

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
1. A new boost for jobs, growth and investment																
1.1. Agriculture and rural development																
1.1.a CAP implementation - develop efficient and innovative tools to implement agricultural legislation, considering also the opportunities of big data and remote sensing and benefiting from the free and open access to Copernicus satellites; help to set standards and provide technical guidance for an optional monitoring approach as from 2018																
4849 - MARS - CAPLand JRC.D.5	496 - GTCAP Guidance and Tools for CAP implementation	GTCAP undertakes research activities to acquire knowledge and develop feasible methodologies relevant to the various inter-related schemes of the Common Agricultural Policy (CAP) regarding farmers' direct payments. This particularly concerns all aspects of the Integrated Administration and Control System of the CAP's Pillar I including the new 'greening' measures for biodiversity and climate benefits, and making appropriate links to harmonise with Pillar II, for example with regard to cross compliance.	JRC.D.5 Wim DEVOS	1.1.a	AGRI	JRC	DG AGRI Head of Units D3 D2, D1 and J3	CLIMA ENV GROW NEAR REGIO	CAP-AG - CAP subsidy paying agencies EU CC Agriculture - EU Candidate countries Competent Authorities for Agriculture EU MS Agriculture - EU Member States Competent Authorities for	01/01/2017 31/01/2020	INS-RS	20181	Towards IACS2.0	A compilation of political priorities, technical solution and MS's wishes on the management of the post 2020 integrated administration and control system that allows the common agricultural policy to be simplified and more performant.	31/12/2018	JRC contributions to policy documents
4848 - MARS4CAST JRC.D.5	3522 - LandSense Engaging citizens in the sensing of land use, land cover and changes	The LANDSENSE project aims to build a citizen observatory for the monitoring of land cover, land use and changes. The LandSense citizen observatory will combine active data collection from citizens in both rural as well as urban areas through targeted case studies related to land change and agricultural monitoring. The focus will be on data collection, development of quality control measures, and development of near-real time services complementing existing systems such as the Copernicus services. The LandSense work package refers to the JRC activities in the H2020-funded LandSense project. The agricultural component refers to the combining high resolution satellite imagery (SENTINEL) and ground based farm-level observations with the aim to improve the operation crop yield forecasting capacity at the JRC. The research in LandSense will contribute to the development of efficient and innovative tools that facilitate the post-2020 implementation of the CAP and which will be of benefit to both farmers and policymakers.	JRC.D.5 Marijn VAN DER VELDE	1.1.a	AGRI	RTD	Pierluigi LONDERO	ENV		01/09/2016 01/09/2020	CON-IA	LYear2	LandSense Year 2	Compilation of the technical and scientific contribution to the introduction of monitoring, foreseen as an alternative control system in the revised Reg 2014/809. Scope, resources and amplitude (number of collaborating Member States) cannot be established at time of the JPB deadline.	01/12/2018	JRC technical reports
4849 - MARS - CAPLand JRC.D.5	3889 - CAPISA CAP Implementation Support Activities	From the introduction of 'controls with remote sensing' in 1993, the original methods have innovatively developed leading to fully documented procedures, validated area measurement methodologies and operational IT services. The R&D work described in WP 496 contributes fundamentally to these activities and critically relies on feedback from them. This work package deals with the more operational components of this support and involves 3 sub packages:	JRC.D.5 Wim DEVOS	1.1.a	AGRI	AGRI	JONES Owen (D3 HoU), SCHEELE Martin (H1 HoU)		CAP-AG - CAP subsidy paying agencies EU CC Agriculture - EU Candidate countries Competent Authorities for Agriculture EU MS Agriculture - EU Member States Competent Authorities for	01/01/2017 31/01/2020	CON-AA	20181 20184 20191	CAPISA Reports - Areas of Natural Constraints CAPISA-3	Compilation and payment request for deliverables for months 11-22 as specified in ToR of the CAPISA AA Assessment of the biophysical criteria implemented by Member States in their ANC submission to the Commission, and follow-up of dossiers to verify technical compliance and seek solutions in areas of difficulty. Compilation and payment request for deliverables for months 23-35 as specified in ToR of the CAPISA AA	30/11/2018 30/11/2018 31/12/2019	Technical systems JRC technical reports Technical systems
156 - IMAP JRC.D.4	6087 - SUPREMA Proposal for call H2020-SFS-2016-2017	Impact assessments in the areas of agriculture are (partly) based on projections delivered by models. Sectoral policies are becoming more and more interrelated. Hence, there is a need to improve the capacity of current models, connect them or redesign them to deliver on an increasing variety of policy objectives, and to explore future directions for agricultural modelling in Europe. SUPREMA comes to address this challenge by proposing a meta-platform that supports modelling groups linked already	JRC.D.4 Jesus BARREIRO HURLE	1.1.a	AGRI	AGRI	n/a	RTD	- EUROCARE GmbH - Universidad Politécnica de Madrid - Agricultural Economics Research Institute - LEI - Swedish University of Agricultural Sciences IASA - International Institute for Applied Systems Analysis	01/01/2018 31/12/2020	CON-IA	D1	Baseline scenario description and divergence analysis	this task will use the updated databases and correspondence tables to construct a baseline projection for a common time-frame (probably 2030). For this task all models represented in SUPREMA will be used. This task includes an assessment of selected model linkages (e.g. iterative simulation or simultaneity, one directional causality, scaling to alternative model-results or parameters) with respect to measuring model linkage impacts and alignment	30/04/2020	JRC technical reports
1.1.b environmental needs - develop methods and tools for the integrated assessment of agriculture, rural development and the environment, taking into account the economic impact at farm and regional level (so that CAP instruments can be tailored to environmental needs); analyse farmers' behaviour towards environmentally friendly practices and the uptake of new technologies																
702 - NC-Soil JRC.D.3	2204 - LANDMARK Land Management Assessment, Research, Knowledge Base	LANDMARK provides the scientific evidence base to support the development of land based policies. Specifically, the project outcomes will include: 1) an on-farm Decision Support Tool (DST) for cost-effective soil management practices; 2) a schema for monitoring of soil quality and soil functions and 3) the ex- post and ex-ante assessments of existing and potential policy instruments, respectively.	JRC.D.3 Arwyn JONES	1.1.b	AGRI	RTD	Annette SCHNEEGANS	ENV RTD	- University of Antwerp - WAGENINGEN UNIVERSITY - UNIVERSITY OF ULSTER - University of Copenhagen - Szent István University ETH Board - The Board of the Swiss Federal Institutes of Technology INRA France - Institut National de la Recherche Agronomique (INRA), France Teagasc - Irish Agriculture and Food Development Authority	01/05/2015 31/10/2019	CON-IA	3 4 5 6	Data warehouse Quantification of the supply of soil functions Policy tools for functional soil management Intercontinental shared learning on soil policies	Long-term data-warehouse that will be housed and managed by the JRC under the ESDAC for storage of new data generated by the Landmark project (with associated metadata) (D2.3) This task will quantify the potential supply of soil functions at EU level through the application of the diagnostic features (WP2) to the pan-EU soil datasets (ESDAC) and a spatial assessment of each soil function based on their relationship with the diagnostic features. The result will be a spatially aggregated estimate of the 'supply' and spatial variation of each of the soil functions across Europe. (D4.1) This task will assess potential EU policy instruments aimed at incentivising the optimisation of soil functions and, where applicable, propose new policy options where current legislation or regulation is lacking. This will include both an ex-post and an ex-ante evaluation of various and potential EU policy tools or measures relating to soil functions and soil management. (D5.3) This task will conduct an assessment of high-level policies relating to soil and land management in three contrasting continents, farming contexts and agroclimatic zones, and critically review which policy interventions have worked in each of the three jurisdictions and which have been less successful, as supported by empirical evidence. We will then assess the transferability / applicability of measures between continents. (D5.4)	31/12/2019 31/05/2018 31/12/2019 31/07/2019	Scientific information systems and databases Datasets Science-for-policy reports Article contribution to periodicals or to conference proceedings listed in SCOPUS
4850 - MARS AGRIENV JRC.D.5	2210 - ENV4AGRI Environmental evaluation, tools and Indicators for Agriculture	ENV4AGRI provides assessment of the agri-environmental conditions in Europe. This covers the development of methods and tools for the evaluation of agricultural impacts on the environment including the provision of sustainability indicators at different levels (regional, farm). This work package also includes the assessment of Member States' designations of Areas with Natural Constraints (ANC), the development of nitrogen budget tools, the assessment of ecosystem services delivered by agriculture and the linking of agri-environmental indicators to agro-economic models for policy scenario assessments	JRC.D.5 Jean TERRES	1.1.b	AGRI	JRC	PL Londero (HoU AGRI.E2), M Scheele (HoU AGRI.H1), S Leiner (HoU ENV.D2), C Wirtz (HoU ESTAT.E1)	ENV ESTAT	EEA - European Environment Agency EU MS Agriculture - EU Member States Competent Authorities for Agriculture INRA France - Institut National de la Recherche Agronomique (INRA), France	01/01/2015 31/12/2020	INS-RS	201803 201804 201805	Supporting the Task Force on Reactive Nitrogen Contribution to the evaluation of the EU Biodiversity Strategy Technical support and scientific validation for the LUCAS grassland survey	Development and application of nitrogen tools in support of the Task Force on Reactive Nitrogen (UN-ECE CLRTAP) and the International Nitrogen Initiative (INI). In particular chairing the Expert Panel on Nitrogen and Food and drafting of a policy report from the expert panel on the emission reductions and health effects of the agro-food system in Europe. Contribution to the Expert Panel on Nitrogen Budgets. Providing support to the first MAES (Mapping and Assessment of Ecosystems and their Services) integrated assessment and the final evaluation of the EU Biodiversity Strategy to 2020. This includes the assessment of condition of agroecosystems, of restoration of ecosystem services. JRC will provide input to the Commission effort to assess if the targets of the EU Biodiversity Strategy for the decade 2010-2020 have been achieved. Contributing to the KIP-INCA process through the elaboration of relevant data for the Accounting system (provision of Food, Feed and Fiber).	15/12/2018 31/12/2019 31/10/2018	Science-for-policy reports JRC contributions to policy documents JRC technical reports
156 - IMAP JRC.D.4	5020 - AgriRegio Territorial aspects of agriculture in the EU	The analysis of agricultural policies requires taking into consideration all other policies that impact the resources used by agriculture including land, water and soil. For this integrated analysis the level of detail in modelling becomes a key driver for the quality and relevance of the results. Therefore a regional agricultural model with the capacity to provide spatial disaggregation of modelling results is key. Within the model platform of IMAP CAPRI plays that role. In the context of the continuous improvements of CAPRI this WPk will provide specific applications of the CAPRI model to policy areas such as biomass, water and soil. Moreover, together with its farm type module can evaluate the distributional impacts of policies to see insofar these contribute to a fairer distribution of impacts and resources across regions and farm types.	JRC.D.4 Jesus BARREIRO HURLE	1.1.b	AGRI	JRC	Pierluigi Londero			01/01/2017 31/12/2020	INS-UR	3 4 5	Model ad-hoc versions Model ad-hoc versions Model ad-hoc versions	The CAPRI core model be modified in order to link the agricultural modelling platform to other policy domains such as water, erosion and biomass. In addition the necessary fixes and alterations for the synchronous development of the model chain with other models within the IMAP Modelling Platform will be developed and implemented. In particular the latter will apply during 2017 to the support to DG AGRI for the anticipation of the post 2020 CAP. The CAPRI core model be modified in order to link the agricultural modelling platform to other policy domains such as water, erosion and biomass. In addition the necessary fixes and alterations for the synchronous development of the model chain with other models within the IMAP Modelling Platform will be developed and implemented. In particular the latter will apply during 2017 to the support to DG AGRI for the anticipation of the post 2020 CAP. The CAPRI core model be modified in order to link the agricultural modelling platform to other policy domains such as water, erosion and biomass. In addition the necessary fixes and alterations for the synchronous development of the model chain with other models within the IMAP Modelling Platform will be developed and implemented. In particular the latter will apply during 2017 to the support to DG AGRI for the anticipation of the post 2020 CAP.	31/12/2018 31/12/2019 31/12/2020	Scientific information systems and databases Scientific information systems and databases Scientific information systems and databases
4850 - MARS AGRIENV JRC.D.5	5807 - LIFT Low Input Farming and Territories: Integrating knowledge for improving ecosystem-based farming	The LIFT WPk aims at assessing the link among ecological approaches in farm management, economic performance and the provision of public goods. Increases in productivity and job creation are included in the analysis. More specifically, the strategic goal of the project is a better identification of low-input farming systems' characteristics, farmers' behaviour and systems' flexibility to improve the provision of private and public goods.	JRC.D.5 Maria-LuísA PARACCHINI	1.1.b	AGRI	RTD	AGRI.E1, AGRID2	ENV		01/03/2018 28/02/2022	CON-IA	201901	First version of the LIFT farm typology	Typologies are groupings of farms having similar characteristics. Clustering farms in such a way is necessary in order to analyse results and draw conclusions on common mechanisms that can increase the development of ecological farming. A specific framework for farm typologies will be developed in LIFT, which will take into account existing typologies (e.g. the consolidated EUROSTAT typology) and existing nomenclature (low-input, organic, extensive, high value farming, agro-ecological etc.) and will particularly address the degree to which farms adopt ecological practices. A first version of the typology will be available at Month 16.	31/08/2019	JRC technical reports
	6240 - WEEF Agriculture	The Task Force on Water and Agriculture launched by the two Commissioners for Agriculture and Water intends to develop a long-term transition to sustainability for EU agriculture with regard to water issues. The action plan prepared by DG AGRI and DG ENV identifies short-term actions to be implemented in 2017-2019 including promotion of investments, review of cross-compliance and rural development measures, and the set-up of a knowledge transfer and innovation hub. The latter is proposed as a task for the JRC to disseminate existing knowledge on water trends and best agricultural practices and steer future knowledge developments. Several forthcoming policy evaluations, e.g. of the Water Framework Directive, the second River Basin Management Plans and the reform of the CAP, and support to policy implementation would benefit from pooling of knowledge. The Work Package on water and agriculture responds to these policy needs. The truly cross-unit work will gather activities such as an improved description of irrigation efficiency in agricultural and agro-economic models, assessments of crop water productivity and impacts of water stress on crop growth, impacts of fertilization scenarios on water quality and ecosystems, identification of alternative						AGRI CLIMA	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) ICPDR - International Commission for the Protection of the Danube River OECD - Organisation for Economic Co-operation and Development			D201801	Improving the knowledge base on the resilience of water-agricultural systems	In the context of the EC Water-Agriculture Task Force the implementation assessment and review of the Water Framework Directive and related water legislation, the work will deliver: (i) Development of a Water-Agriculture Knowledge Hub, including knowledge expressed at EU level, with focus on nutrient and pesticide pollution, water use for crop irrigation and hydromorphological pressures due to agriculture and their impact on water bodies' ecological status (ii) Report on the synergistic implementation of water-agriculture policies in Europe and the Neighbourhood, supporting the coordination of Rural Development Programmes, River Basin Management Plans and Action Programmes for Nitrates and Pesticides, addressing scenarios of implementation of agricultural measures aimed at improving water quality and reducing crop water requirements (iii) Set up of a Synthesis Center addressing the involvement of agriculture as an active driver of water resources protection to stimulate jobs/growth	31/12/2018	Science-for-policy reports

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568 - WEFE Nexus JRC.D.2	WEFE - Water and Agriculture	practices for agricultural water management. It will analyse region-specific targets for the reduction of multiple pressures on water bodies, seeking trade-offs between costs of measures, losses from limitations to agricultural production, and benefits in terms of environmental objectives and ecosystem services. The analysis will focus particularly on point and diffuse pollution from agriculture and urban areas. It will evaluate the potential of certain types of investments in Europe to deliver multiple benefits along the agriculture dimensions while contributing to the reduction of pressures on waters. Applications would use case studies across Europe and beyond, including the Mediterranean region and African countries. Disciplinary models will be enhanced to better account for impacts of varying water availability, such as an improved and updated water module in the agro-economic model CAPRI, and assessments of the impacts on agricultural production, as well as linking CGE economic models with water models, e.g. for one or more African countries.	JRC.D.5 Stefan NIEMEYER	1.1.b	ENV	JRC	n/a	DEVCO NEAR RTD SANTE	OECD (OECD) UNEP MAP - Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (United Nations Environment Programme for the Barcelona Convention)	01/01/2018 31/12/2020	INS-RS	D201802	Accounting for water scenarios in biophysical and agro-economic modelling	This deliverable will produce scientific publications on the aspect of enhancing the modelling capacities of biophysical crop growth and agro-economic models to account for impacts of varying water availability on agricultural production in Europe, including the further development and implementation of integration mechanisms between the two model infrastructures and with water balance models within the WEFE Nexus project. The enhancements will include, among others, specific aspects such as updating the Water module of CAPRI for the new 20212 baseline, revising the role of the water input in the production function with the latest development of the biophysical models, reviewing crop water productivity for the main crops in the different producing regions of Europe, or revising the inclusion of the technical infrastructure (e.g. irrigation).	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
			D201901	Policy analysis for a case study in Africa	Based on the model development which integrates economic and hydrological models for specific basin, the deliverable will provide a policy analysis report for a case study in Africa (e.g. Senegal River basin), including an analysis of regional agricultural, water stress and food security issues. Contributing to the main deliverable on the African WEFE Nexus coordinated by WEFE4Dev (WPK 3888)	02/12/2019	Science-for-policy reports									
4849 - MARS - CAPLand JRC.D.5	6408 - FALISA Farm level tools for sustainable agriculture	The CAP priority to promote and measure farm sustainability implies the definition and development of calculation methods for environmental indicators according to EU monitoring and reporting requirements. Environmental issues and related practices could be better detailed and addressed at national/regional level but within a common European framework. The digital dossier represents the bridge between the collection of data about practices through farm level tools and their possible re-use in the IACS. This WP will, based on literature review meta-analysis of farming practices' impacts on the environment, focus on defining methodologies aimed at: - Adapting/scaling data to be used in environmental indicators from NUTS2 into parcel level - collecting data at farm level in a way that they could be re-used in the IACS, exploiting synergies with the information collected by paying agencies for CAP compliance - establishing a flow of data to monitor and evidence the fulfillment of regional sustainability targets.	JRC.D.5 Vincenzo ANGLIERI	1.1.b	AGRI	JRC	n/a	CLIMA ENV		01/01/2018 31/12/2019	INS-UR	20181	Standards for Farm Level Tools	Given the large collection of such tools and the need to adapt such tools to national / regional characteristics, the work shall consist in preparing guidelines to ensure that the tools will follow EU and international standards to calculate environmental indicators and to measure farm sustainability according to EU monitoring and reporting requirements	31/12/2018	JRC technical reports
			20191	Scaling up to farm level	Scaling environmental indicators data from NUTS2 to farm level: analysis on contents, collection and re-use of these data within the IACS, with the support of case studies after a meta-review of farming practices impacts on the environment based on scientific literature and technical agronomical information, in view to establish robust and possibly quantitative evidence of these effects	31/12/2019	JRC technical reports									
156 - IMAP JRC.D.4	6520 - BIs-AGRI Behavioural Insights for Agricultural Policy	Policy-makers at European, national and local levels increasingly incorporate behavioural insights (i.e., contributions from psychology, behavioural economics and other behavioural sciences) into policy-making. These insights inform all stages of the policy cycle, from problem definition to policy evaluation, by providing empirical evidence of how people think and make decisions in a policy context. Agricultural policies are also progressively integrating evidence from behavioural sciences (OECD, 2012; JRC 2015). The expert workshops organised as part of the Common Agricultural Policy's (CAP) Impact Assessment stressed the importance of better understanding and anticipating farmers' and consumers' behaviours for many policy issues such as food consumption, environmental challenges and climate change, as well as risk management.	JRC.I.2 Francois DESSART	1.1.b	AGRI	AGRI	n/a	ENV		15/06/2018 31/12/2018	CON-AA	BI1804	Annual report: behavioural insights for agricultural policy	This annual report will detail the breadth and depth of support in behavioural sciences offered by the JRC to DG AGRI throughout 2018, in view of informing the reform of the Common Agricultural Policy (CAP). It will cover (1) all the behaviourally-informed scientific outputs generated throughout the completion of this work package, (2) a description of the methodologies used (i.e. literature review, focus groups, experiments), (3) the actual and potential use of the findings in the different phases (i.e. problem definition, identification of policy options, impact of policy options) of the impact assessment and evaluation of the CAP. Issues covered will likely include farmers' environmentally (un)sustainable practices, adoption of new technologies, and/or co-operation between farmers.	14/12/2018	JRC contributions to policy documents
1.1.c resource efficiency, climate change and food security - develop knowledge and models on soil, water and ecosystem dynamics in order to improve their sustainable management (socioeconomic and environmental dimensions) in agricultural systems, and make better use of the potential of the bioeconomy. Study the effects of climate change on the agricultural sector, assess the potential of climate change mitigation and adaptation strategies; forecast																
4848 - MARS4CAST JRC.D.5	1016 - AGR4CAST Crop Production Monitoring and Forecasting	AGRI4CAST provides DG AGRI with timely, independent, and high-quality information and forecasts of crop development, agricultural yields and production in Europe and neighbouring countries. This is used for decision making in agricultural markets, implementing Article 22 of REG(2013) 1306 on Monitoring Agricultural Resources (MARS). The MARS Crop Yield Forecasting System (MCYFS) delivers tailored data and modelling capacities throughout the growing season. Operational aspects are outsourced through a co-delegation from DG AGRI. The JRC provides matching staff for agricultural analysts and experts producing monthly JRC MARS Bulletins for Commission-internal use (e.g. by DG AGRI), but that are also published and well received by private sector stakeholders, academics and the general public. AGR4CAST progressively refines and updates the MARS Crop Yield Forecasting System (MCYFS) and extends its activities with respect to regions and crops. The System contributes to the G20 Initiative Agricultural Market Information System (AMIS), hosted by FAO, and the transparency of global commodity markets. The system also contributes to GEOGLAM. The MCYFS, the Bio-physical Model Applications (BioMA) platform, and the associated data and	JRC.D.5 MAURITS VAN DEN BERG	1.1.c	AGRI	JRC	S. Boger, Hou C4, P. Londero, Hou E2	ENER ENV ESTAT REGIO	- National Institute for Agricultural Research FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) VITO - Flemish Institute for Technological Research EEA - European Environment Agency EFSA - European Food Safety Authority EU MS Agriculture - EU Member States Competent Authorities for	01/01/2016 31/12/2020	INS-RS	2018D1	Monthly MARS Bulletins 2018 plus ad-hoc analyses of Adverse Weather Situations 2018	Monthly MARS Bulletins on "Crop Monitoring in Europe" covering the EU with near-real-time information on the state of crop development and yield forecasts for major crops, in two versions (COM-internal version for DG AGRI; public version and supplementary information on internet). Additional ad-hoc analyses will be conducted following requests from DG AGRI. The bulletins are a high-profile product relying on cutting edge analysis, near-real-time data absorption and regular quality assessment.	31/12/2018	Science-for-policy reports
			2019D1	Monthly MARS Bulletins 2019 plus ad-hoc analyses of Adverse Weather Situations 2019	Monthly MARS Bulletins on "Crop Monitoring in Europe" covering the EU with near-real-time information on the state of crop development and yield forecasts for major crops, in two versions (COM-internal version for DG AGRI; public version and supplementary information on internet). Additional ad-hoc analyses will be conducted following requests from DG AGRI. The bulletins are a high-profile product relying on cutting edge analysis, near-real-time data absorption and regular quality assessment.	31/12/2019	Science-for-policy reports									
702 - NC-Soil JRC.D.3	3706 - SOILCARE Soil care for profitable and sustainable crop production	European crop production is facing the challenge to remain competitive, while at the same time reducing negative environmental impacts. Currently, production levels in some cropping systems are maintained by increased input (e.g. nutrients and pesticides) and technology, which masks losses in productivity due to reduced soil quality. Such increased use of agricultural inputs may reduce profitability due to their costs, while also negatively affecting the environment. The quality of agricultural land is also threatened by human action, leading to, often subtle and gradual, physical, chemical and biological degradation of the soil. This includes soil threats e.g. erosion, compaction, soil pollution, loss of organic matter and loss of soil biodiversity. Soil improvement is necessary to break the negative spiral of degradation, increased inputs, increased costs and damage to the environment.	JRC.D.3 Arwyn JONES	1.1.c	AGRI	RTD	Agnieszka ROMANOWICZ	ENV RTD		01/03/2016 01/03/2021	CON-IA	1	Data management	Support in building the project database so that it fulfills requirement for transfer of it to the ESDC. At the end of the project support in transferring data and making them publicly available via ESDC.	28/02/2021	Datasets
			2	Analysis of the project results and upscaling to t	Support in analysis of the project results and upscaling to the EU level including policy analysis. This deliverable will include also policy advice i.e. possible alternative ways to support soil-improving techniques.	28/02/2021	Science-for-policy reports									
			3	Dissemination and communication	Support in developing an advanced and easy accessible SOILCARE Information Hub and in development of a suite of dissemination products from the research outputs suited to different categories of stakeholders at Study Sites, national and European levels.	28/02/2021	Public information documents									
4848 - MARS4CAST JRC.D.5	4210 - AGBIO EO data-driven modelling of agricultural biomass production in Europe	The objective of this Exploratory Project is investigating the feasibility of an advanced, added-value Earth Observation (EO)-driven Net Primary Production (NPP) model specifically oriented for a quantitative assessment of crops and grasslands production. The new model will represent an important advancement in the application of EO-based technologies in biomass production models for crops, simulating the allocation of assimilated carbon into different plant organs through the incorporation of a biomass partitioning module. The project encompasses three main tasks: the development of the concept of crop-oriented NPP model using experimental data; the implementation of that concept at European scale and production of an historical archive of agricultural biomass in Europe from 1998; and the assessment of the model results with official statistics of crop production and yields, and data on biomass potentials available from different studies.	JRC.D.5 Marijn VAN DER VELDE	1.1.c	AGRI	JRC	Mauro POINELLI	CLIMA ENER ENV GROW RTD SG		01/05/2016 30/04/2018	INS-ER	32	Scientific paper in the use of EO-based monitoring	Scientific paper in the use of EO-based monitoring of biomass supply in the estimation of biofuel production at EU level. This paper will explore the added-value of using the proposed NPP model at European level to compute biofuels production scenarios against existing studies on the matter, discussing the strengths and limitations of the selected approach	30/04/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4848 - MARS4CAST JRC.D.5	4911 - CROPMOD Crop Growth Modelling for Estimating Crop Yield and Production	The CROPMOD work package underpins the existing MARS Crop Yield Forecasting System (MCYFS) in use within the AGR4CAST work package of the MARS4CAST project through Research and Development in crop growth modelling. At the same time, it supports the further use of the existing crop modelling capacity for related applications and projects by adapting and extending the models where appropriate. Crop growth models and their modelling environment are extended to incorporate explicitly the impact of climatic extreme events such as frost kill, droughts, or heat waves that reduce yield expectations. In addition, while the current system assesses yield in terms of quantity, aspects of yield quality, such as e.g. the sugar content become more important. The assessment of the impact of pests and diseases on crop yield will be another focal point of the work package. Recent advances within the international scientific community of crop modelling will be evaluated and tested for use within JRC. The crop model engine currently in place within the MCYFS will be continuously compared and benchmarked against international crop model implementations e.g. within the Agricultural Model Intercomparison and Improvement Project (AgMIP).	JRC.D.5 Stefan NIEMEYER	1.1.c	AGRI	JRC	Pierluigi LONDERO	CLIMA ENER RTD SANTE	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) INRA France - Institut National de la Recherche Agronomique (INRA), France UNI MI - Università degli Studi di Milano - University of Milan	01/01/2017 31/12/2020	INS-UR	D201801	Scientific publication on a new knowledge base for pests & diseases within the MARS Crop Yield Forecasting System	The publication will describe the newly created knowledge base to include the impacts of pests and diseases on crop yield. This knowledge base will serve agricultural analysts to better evaluate crop growing conditions along the season and estimate annual crop yields, taking into account the effects of pests and diseases, and at the same time will serve the bio-physical modelling of the impacts by pests and diseases on yield development in dedicated modelling solutions associated to the crop growth models of the MARS Crop Yield Forecasting System.	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4848 - MARS4CAST JRC.D.5	4912 - METHOD4CAST Exploring novel approaches and improving current methods for crop forecasting	METHOD4CAST is focused on the exploration of new forecast approaches as well as on the improvement of current methodologies in the MARS4CAST project. The overall aim is the general improvement of crop yield forecasts. Improvements of the current methodologies need to be underpinned by an accuracy assessment of the crop yield forecasts to identify which aspects of the implemented forecast methodology need to be addressed. On one side, these improvements will depend greatly on an increased capacity of indicators (crop model outputs, Earth Observation-based indicators) to explain past yield variability. On the other side, novel approaches will be explored. These approaches could have the potential to improve the quality of the forecasts and to extend their spatio-temporal range. This includes for instance exploring the capacity long-range meteorological ensemble forecasts and on a better understanding of the predictability of weather extremes. International scientific collaboration and networking is key in supporting the research developed in this WP.	JRC.D.5 Marijn VAN DER VELDE	1.1.c	AGRI	JRC	Pierluigi LONDERO	TRADE	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)	01/01/2017 31/12/2020	INS-UR	ClimVarCrop Imp	Climate variability and crop impact	This deliverable will report in a scientific publication on the advances in the use of meteorological data (including seasonal forecasts) and information to explain past and predict future crop yields.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
702 - NC-Soil JRC.D.3	5044 - AGSOL Soil: the foundation of agriculture	While soil is the essential natural resource for domesticated animal- and plant-based food production systems, it faces strong pressures partly owing to inappropriate agricultural practices and overuse. In many cases, farming practices associated with the production of biomass cause soil degradation and a loss of associated functions such as carbon sequestration, water retention, nutrient cycling and habitat. As functional soils are central to agriculture and bioeconomies, this WPK is well placed to contribute to policy debate on how farming can contribute to land degradation neutrality targets and SDG goals. The WPK will contribute to the evaluation of the 2014-2020 CAP (mid-term review) through the maintenance and development of policy relevant indicators and modelling scenarios (soil erosion, carbon stocks and belowground biodiversity) that characterize the relationships between food production and soil degradation. These assessments are underpinned by the analysis of pan-European primary data on the condition of soil in agricultural land (e.g. data collected through the LUCAS SOIL programme). The WPK will contribute to the discussions on the design of the post-2020 CAP by providing policy options on the climate change mitigation potential of agriculture and on the visible	JRC.D.3 Panagiotis PANAGOS	1.1.c	AGRI	JRC	Gesa WESSELER	CLIMA ENV ESTAT	- ALTERRA - Colorado State University - WAGENINGEN UNIVERSITY - UNIVERSITY OF BASEL - UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN - Catholic University of Leuven FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) EEA - European Environment Agency INRA France - Institut National de la	01/01/2017 30/12/2020	INS-RS	201801	Support to the post-2020 Common Agricultural Policy impact assessment.	Soil erosion and loss of soil organic carbon arise from various factors including inappropriate management practices, deforestation and climate change. Soil erosion and loss of soil organic carbon are main drivers for land degradation which reduces agricultural productivity. The "Soil erosion index", "SOC/C stock content", "Minimum tillage area" and "risk to soil biodiversity" are among the indicators assessed in the Impact Assessment prepared by DG AGRI.	31/12/2018	JRC contributions to policy documents
			3	Evaluation of the CAP from a soil perspective	Through analysis of LUCAS Soil data from 2009, 2012 and 2015, this deliverable will contribute to the review of the 2014-2020 CAP by assessing the changes in soil condition under agricultural management. The deliverable will deliver a state assessment on the basis of 2015 data and change between the survey dates in relation to LUCAS land use data and in-house datasets on threats to soil. Changes in soil condition with respect to organic carbon stocks and nutrient status will be presented. Data from LUCAS 2015 will underpin agri-environment and SDG indicators.	31/05/2019	Science-for-policy reports									

JRC 2018 - 2019 DETAILED WORK PROGRAMME																												
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category												
442 - AGFORCC JRC.D.5	5084 - Mitigatech Technological Options for Climate Change Mitigation in Agriculture	Within the AGFORCC project, Mitigatech work-package aims to analyse the adoption, economic impacts and GHGs reduction potential of different technological options for mitigation of Climate Change in EU Agriculture. This is done by mainly focusing on the end-users (i.e. EU farmers) of the technological options which allows policy-makers to understand the incentives needed to boost their adoption and maximize the GHGs reduction in a cost-effective manner. The final purpose is to establish a reliable and up-to-date EU reference database on mitigation technological options that can feed the Computable Equilibrium Model CAPRI which assesses the mitigation policy options for EU agriculture and the EU-wide individual farm-level model IFM-CAP. The rationale behind Mitigatech is the lack of precise, integrated and harmonized data regarding the current and potential adoption, the associated cost-effectiveness and GHGs emissions reduction potential of modelled mitigation technologies as well as an absence of knowledge on the incentives needed to boost their uptake by EU farmers and correct the possible market failures. The policy context of this workpackage is mainly	JRC.D.4 Fabio MICALE	1.1.c	AGRI	JRC	Mauro POINELLI	CLIMA ENV	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2017 31/12/2019	INS-RS	2	Study of technological mitigation options adoption	Study of technological climate change mitigation options for the EU agriculture sector. Several mitigation options will be analysed from the angle of their current and potential adoption, costs related to the adoption, driver and barriers for their dissemination in EU agriculture and mitigation potential. The drivers analysis will include supporting tools to farmers within the Common Agricultural Policy (e.g. subsidies). This study will feed with empirical database described in D1 and D3.	30/06/2018	JRC technical reports												
4844 - NATCAPES JRC.D.3	6842 - id-SAFE Integrated Decision-Support for Agriculture and Forestry in Europe	Policies and decisions related to sustainable land use management are complex because of the many challenges posed by multiple social, economic, political and environmental contexts and their interactions. However, such complexity is not reflected in existing policy and decision support tools (DSTs), which are often highly customised to address particular management questions within individual sectors. This ad-hoc and sectoral approach has created a fragmented and incomplete system of individual, disconnected tools. id-SAFE aims to tackle this fragmentation by developing "Decision Support Tool labs", which combine advances in modelling, high performance computing and complex data analytics with the active involvement of stakeholders through a process of participatory design (co-design). The DST labs will incorporate a new generation of models and methods that directly address current gaps in decision support, for example, considering synergies and trade-offs between sectors through integrated modelling, or accounting for the role of human behaviour in complex land use decisions through agent-based modelling. The DST labs will provide greater clarity and flexibility for stakeholders to explore a wide range of	JRC.D.3 JOACHIM MAES	1.1.c	AGRI	RTD	n/a	ENV		02/07/2018 23/12/2022	CON-IA	1	Report on needed project data sets	Support the consortium with access to European wide datasets; provide oversight and coordinate project data sets. This links to on-going efforts of the KIP-INCA to set up a reference data collection for ecosystem accounting. Liaise with relevant stakeholders inside the Commission (with particular focus on KIP-INCA partners and DG AGRI).	29/11/2019	JRC technical reports												
												2	Case study at regional scale (Lombardia)	A key objective is to apply the ESTIMAP model at regional scale along multiple gradients of land use intensity which exist at regional scale (extensive land use in the alpine highlands to intensive land use in Po valley). A key question is to understand how bundles of ecosystem services change in a changing social-ecological system and how this knowledge can be used for local, regional, national and EU based land management.	31/03/2022	JRC technical reports												
1.1.d agricultural market and trade - analyse the competitiveness and trade relations of the European agri-food sector, and the performance of European agri-food systems (including the food chain). Provide detailed analysis of policy options for the CAP beyond 2020 based on economic and agricultural models.																												
156 - IMAP JRC.D.4	795 - AgriTrade Agriculture, trade and the global economy	AgriTrade assesses the impacts of agricultural, climate and trade policies on the EU and global agricultural market. The assessments are based on comprehensive databases, advanced economic modelling tools (mainly Computable General Equilibrium models - CGE) and statistical methods, supporting in particular the main customer DG AGRI (also financed via administrative arrangement, see WPK3349). General equilibrium models link all economic sectors, allowing to connect different priorities on Agriculture, Natural Resources, Energy, Environment, Climate Change, Circular Economy and Development. Within the WPK databases and tools of the agro-economic platform IMAP (mainly the GTAP database, the MAGNET and STAGE models and multipliers techniques) are updated, further developed and used.	JRC.D.4 EMANUELE FERRARI	1.1.d	AGRI	JRC	P. Londero, AGRI.E.2	CLIMA DEVCO RTD SANTE TRADE	- LandbouwEconomisch Instituut B.V.	01/01/2014 31/12/2020	INS-RS	7	Models and database maintenance and development	To anticipate the needs related to the AA IMAP9 and IMAP 10 this deliverable will keep the CGE models currently used within the AA under constant maintenance, keeping the database up to date, updating and improving the parameters used in the models. In addition, based on the most advanced literature and in cooperation with relevant external experts, this deliverable will focus on the gaps existing in currently used CGE models and try to fill them adopting the most advanced modelling techniques.	31/12/2020	JRC technical reports												
156 - IMAP JRC.D.4	922 - AgriFarm - FoodChain Agricultural economics, food supply chain and policy analyses at micro and regional scale	The main objectives of this WPK are to provide policy support in areas of farm level economic and environmental impacts of agricultural policies in EU and selected non-EU countries and the economics of EU food supply chains. This WPK is part of the yearly policy support provided to DG AGRI based on the IMAP administrative arrangements which will last until the end of 2020. This WPK includes three main areas of policy support: - Farm level policy analyses - Food supply chain analyses - Ad-hoc policy support 1) Farm level policy analyses are performed primarily using IFM-CAP farm level model that allows studying policy effects for the EU farming population and across different farming systems in EU regions. This modelling approach allows a flexible assessment of a wide range of farm-specific policies, reflect the full heterogeneity of EU farms in terms of policy representation and farm structural impacts and permit a detailed analysis of different farming systems in EU and their responses to policies. 2) Food chain activities cover micro and market analysis of EU food supply chains with the special focus on exploratory research on market power and unfair trade practices, fairness of income distribution among agents in the food supply chain, and competitiveness and price analyses. 3) Various ad-hoc policy support related to case studies of CAP analyses and agricultural policies implemented in EU and non-EU countries are undertaken within AgriFarm-FoodChain to allow responding to the emergent policy research needs. The main activities cover the analyses of the CAP reform effects in the EU as well as policy impacts in selected non-EU regions, such as the Western Balkans, EU neighbour countries, and other areas.	JRC.D.4 PAVEL CIAIAN	1.1.d	AGRI	JRC	Pierluigi Londero, HoU AGRI.E.2	DEVCO		29/06/2013 31/12/2020	INS-RS	3	Farm-level analysis of market power and unfair trade practices in the EU food chains	Micro agro-economic analysis in selected EU regions. Report related to analyses of vertical coordination, market power and unfair trade practices in the dairy sector based on the on farm survey data collected in selected EU regions. This deliverable is part of the regular policy support provided to DG AGRI based on the IMAP administrative arrangement.	31/03/2018	Science-for-policy reports												
												4	Farm level impact of CAP reform	Policy impact simulations of ex-ante selected agricultural measures at farm-household level, through the IFM-CAP model. Special focus: Impact of CAP reform on farms/farm-types in the EU. This deliverable is part of the regular policy support provided to DG AGRI based on the IMAP10 administrative arrangement which will last until the end 2020. The detailed content of deliverable will be decided based on DG AGRI needs and based on the CAP negotiations and developments.	31/12/2018	Science-for-policy reports												
												5	Unfair trade practices in the EU food chains	Economic analysis of market power, unfair trade practices and income distribution in the EU food supply chains. This deliverable is part of the yearly policy support provided to DG AGRI based on the IMAP10 administrative arrangement which will last until the end 2020.	31/12/2019	Science-for-policy reports												
												6	Integrated modelling and policy impact analysis	Development of methodology for policy impact assessment and empirical application	30/12/2018	Science-for-policy reports												
												7	Farm level impact of CAP reform	Policy impact simulations of ex-ante selected agricultural measures at farm-household level, through the IFM-CAP and/or CAPRI-FARM models. Special focus: Impact of CAP reform on farms/farm-types in the EU. This deliverable is part of the regular policy support provided to DG AGRI based on the IMAP10 administrative arrangement which will last until the end 2020. The detailed content of deliverable will be decided based on DG AGRI needs and based on the CAP negotiations and developments.	31/12/2019	Science-for-policy reports												
												8	Farm-level analysis of market power and unfair trade practices in the EU food chains	Economic analysis of market power, unfair trade practices and income distribution in the EU food supply chains. This deliverable is part of the yearly policy support provided to DG AGRI based on the IMAP10 administrative arrangement which will last until the end 2020.	31/12/2020	Science-for-policy reports												
												9	Farm level impact of CAP reform	Policy impact simulations of ex-ante selected agricultural measures at farm-household level, through the IFM-CAP model. Special focus: Impact of CAP reform on farms/farm-types in the EU. This deliverable is part of the regular policy support provided to DG AGRI based on the IMAP10 administrative arrangement which will last until the end 2020. The detailed content of deliverable will be decided based on DG AGRI needs and based on the CAP negotiations and developments.	31/12/2020	Science-for-policy reports												
156 - IMAP JRC.D.4	4916 - AgriMarkets Perspectives and resource challenges for global agricultural markets	This work package focuses on the prospective analysis of EU and global agricultural commodity markets. It includes the work necessary to develop and expand the Aglink-Cosimo model used for the Medium-term prospects for EU agricultural markets and income 2015-2025, namely. It also includes research work with the CAPRI model for the assessment of economic challenges related to climate change from an agriculture sector perspective. Aglink-Cosimo is a global recursive-dynamic model developed by the OECD and the FAO in joint collaboration. The EU Commission is an official model user, and provides the OECD on a yearly basis a hard view on the most-likely developments of EU agricultural markets. Within this WP relevant model developments are provided, such as the provision of a module for the stochastic analysis of agricultural markets (i.e. to cover the main uncertainties around model assumptions), the analysis of direct and indirect land use effects in key world regions (e.g. Brazil), the impacts on the global agricultural sector of a 'low carbon economy', and the introduction of dietary and environmental indicators in the model. Last but not least, some relevant scientific contributions linked to current policy	JRC.D.4 Ignacio PEREZ DOMINGUEZ	1.1.d	AGRI	JRC	Pierluigi LONDERO	CLIMA ENV	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2017 31/12/2020	INS-RS	ID3	EU Market Outlook and scenario analysis	The Aglink-Cosimo model is further developed in order to assess the EU-Outlook work (institutional contribution to WPK5000 "MAP-10") by performing scenario analysis, both from a deterministic and stochastic view point. This includes going into new areas of work such as (non-exhaustive list): environmental indicators, medium to long term analysis of agricultural markets, dietary patterns and weather anomalies.	31/12/2018	Scientific information systems and databases												
												ID4	EU Market Outlook and scenario analysis	The Aglink-Cosimo model is further developed in order to assess the EU-Outlook work (institutional contribution to WPK5000 "MAP-10") by performing scenario analysis, both from a deterministic and stochastic view point. This includes going into new areas of work such as (non-exhaustive list): environmental indicators, medium to long term analysis of agricultural markets, dietary patterns and weather anomalies.	31/12/2019	Scientific information systems and databases												
												ID5	EU Market Outlook and scenario analysis	The Aglink-Cosimo model is further developed in order to assess the EU-Outlook work (institutional contribution to WPK5000 "MAP-10") by performing scenario analysis, both from a deterministic and stochastic view point. This includes going into new areas of work such as (non-exhaustive list): environmental indicators, medium to long term analysis of agricultural markets, dietary patterns and weather anomalies.	31/12/2020	Scientific information systems and databases												
156 - IMAP JRC.D.4	5000 - IMAP4agri integrated Modelling platform for Agro-economic and rural development	The JRC Agro-Economic Modelling Platform IMAP has developed into a cornerstone of the JRC economic and environmental modelling capacity. Since nine years it receives key funding from DG Agriculture and Rural Development. The IMAP administrative arrangements take account of DG AGRI being an important user of quantitative economic analysis based on modelling tools, both for its market analysis and for its domestic and trade policy analysis. The use of models has now become an indispensable tool in the preparation and negotiation of policy decisions (e.g. Common Agricultural Policy (CAP) reform, bilateral/multilateral negotiations, environmental and rural development analysis, climate change discussions etc.). Validated economic models are crucial for providing a scientific basis for the evaluation and further design of EU policies. Databases provide the necessary input to ensure the reliability and consistency of modelling tools employed for agricultural policy analysis. The 10th edition of the AA with DG AGRI (now called IMAP4agri) will cover three and a half years, allowing for a better planning and execution of the agreed work programme. With a total budget of 7.8 Mio Euros, it provides 12 FTEs and about 1 Mio Euros specific credits per year. The main objective of IMAP4agri is to further contribute to the Agro-Economic Modelling Platform to support the conception, management, evaluation and analysis of the CAP. The research and policy support activities to be carried out by JRC concern in particular (i) the in-house capacity and expertise with regards to modelling tools, (ii) the development of a fully operational database management system, (iii) the update and validation of models, (iv) the development of the models, (v) the development of agri-environmental indicators and the linkage of economic and biophysical models, and (vi) the implementation and use of quantitative tools for commodity market and agricultural policy analysis (including rural development and agri-environment); training on modelling and the organisation of workshops. IMAP4agri covers also the monitoring of the weather impact on the main producing grain areas in the European Neighbourhood and issue consequent short term forecasts of crop productions availability in form of Crop Monitoring Bulletins along the growing season making use of the MARS Crop Yield Forecasting System. Crops of primary interest are wheat, maize, barley, rapeseed and sugar beet.	JRC.D.4 Robert M'BAREK	1.1.d	AGRI	AGRI	Pierluigi LONDERO	CLIMA ENV		12/07/2017 31/12/2020	CON-AA	04	Interim Report No 2	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	30/09/2018	JRC technical reports												
												05	MARS EU neighbourhood Bulletins 2018	The WP will produce MARS Bulletins "Crop Monitoring in the EU neighbourhood" covering Russia, Belarus, Ukraine, Kazakhstan and Northern Africa with timely information on the state of crop development and yield forecasts for the major crops.	31/12/2018	Science-for-policy reports												
												06	Interim Report No 3	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	31/03/2019	JRC technical reports												
												07	Interim Report No 4	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	30/09/2019	JRC technical reports												
												08	MARS EU neighbourhood Bulletins 2019	The WP will produce MARS Bulletins "Crop Monitoring in the EU neighbourhood" covering Russia, Belarus, Ukraine, Kazakhstan and Northern Africa with timely information on the state of crop development and yield forecasts for the major crops.	31/12/2019	Science-for-policy reports												

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
												09	Interim Report No 5	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	31/03/2020	JRC technical reports	
												10	Interim report No 6	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	30/09/2020	JRC technical reports	
												11	MARS EU neighbourhood Bulletins 2020	The WP will produce MARS Bulletins "Crop Monitoring in the EU neighbourhood" covering Russia, Belarus, Ukraine, Kazakhstan and Northern Africa with timely information on the state of crop development and yield forecasts for the major crops.	31/12/2020	Science-for-policy reports	
												12	Final report	The work carried out consists in the maintenance, development and use of three economic models AGLINK-COSIMO and CAPRI as well as AGMEMOD, the general equilibrium model (MAGNET) as well as the farm model IFM-CAP. The operational back-up to DG AGRI for economic and policy analysis in its multiple dimensions (e.g. country, commodity coverage, geographical resolution, policy instruments) includes the impact of agriculture on jobs and growth; on environment and climate change; on commodity markets.	31/12/2020	JRC technical reports	
1.2. Education, culture, youth and sport																	
1.2.a education and training systems - monitor trends under EU policy strategies (e.g. Europe 2020, ET2020 and the Knowledge Hub on Higher Education) and provide evidence of the successful implementation and development of such policy frameworks																	
150 - Education & Skills JRC.B.4	3284 - Edu&Skills INST Education and Skills for growth and inclusion - INST	JRC/B4 supports DG EAC on monitoring, modernising and innovating Education and Training policies. WPK 3284 covers all institutional work which is required to maintain and expand research capacity, foster coherence and collaboration in the area of Education and Skills, both within Unit B4 and across the JRC. This is especially needed due to the increasing cross-unit importance of Human Capital issues and policies. A number of Knowledge Management activities in relation to valorising the research in support of E&T policies will be undertaken such as: setting up and animating a community of practice (CoP) on Education and Skills (EduSkillsCoP). Moreover, research in support of the cross-JRC projects on Fairness, Resilience and the Digital Transformation will be used to increase the quality of deliverables in support of EAC and EMPL policies.	JRC.B.4 Yves PUNIE	1.2.a	EAC	JRC	Bodo RICHTER	CNECT EMPL		01/01/2016 31/12/2019	INS-RS	1	Policy Insights on Education and Skills Community of Practice (EduSkillsCoP)	Shared Education and Skills Community of Practice Deliverable (EduSkillsCoP); the edited outcome of jointly organised conferences.	17/12/2018	JRC technical reports	
7647 - H-EU JRC.B.7	6423 - KH-HE Knowledge Hub for Higher Education	The aim of a Knowledge Hub for Higher Education is to bring together existing higher education data collection exercises - U-Multitrack, ETER and the planned PGTS - to increase their visibility and develop better evidence and greater transparency about the structures and performance of European higher education systems and institutions. The JRC will support DG EAC in the set-up of the Knowledge Hub for HE in the framework of an Administrative Agreement. In 2018, the following activities are planned: The data from the different tools will be combined with other data to form the basis for analyses on 1) how the characteristics of HE institutions/systems affect the labour market outcomes of graduates; 2) the factors which influence the potential of European Higher Education Institutions to contribute to innovation and regional development, and 3) What factors/practices have proven successful in increasing the access, participation and completion rates of under-represented and disadvantaged groups in higher education. The first outcomes of the analyses on the factors which influence the potential of universities to contribute to innovation will feed into the overarching report on	JRC.B.7 Alhina KARVOUNARAKI	1.2.a	EAC	EAC	n/a	CNECT GROW REGIO RTD		01/01/2018 31/12/2020	CON-AA	1	brief policy reports for wider audience	The intermediate analytical work on the three research lines will feed into the development of a series of brief reports for a wider audience for DG EAC.	14/12/2018	Science-for-policy reports	
												2	Report on ETER implementation	The contracting consortium carrying out the data collection and analysis of the European Tertiary Education Register will produce one report on data implementation.	04/12/2018	External study reports	
1.2.b innovative education - carry out research on policy-relevant themes such as efficiency and equity in education investment, the role of (higher) education for regional development and smart specialisation, education and societal wellbeing, the integration of vulnerable groups such as migrants, refugees and other minorities into the education system, and early childhood learning; study digitisation's impact on education and training practices and systems																	
150 - Education & Skills JRC.B.4	4979 - EffectiveEdu-2: FIT EffectiveEdu-2: Facilitating Innovation in Teaching	FB 150 (Education&Skills) researches the area of education and skills with emphasis on the socio-economic implications and the way the wide scale uptake of digital technology affects the everyday life of Europeans. This AA in partnership with DG EAC (WPK 4979) is a continuation of the long-standing work JRC B4 has been undertaken on ICT for Learning and Skills as to provide scientific and policy support on modernising and innovating Education and Training (E&T) in Europe with the aim to improve learning outcomes and provide wider and more inclusive access to education. The WPK collects evidence and analyses facilitators for innovation in teaching with a specific focus on teacher training and continuous professional development as well as on innovative forms of assessment. It addresses the following 4 tasks: WP 1: Levering innovation in teacher continuous professional development in compulsory education WP 2: Training and Development on Innovative Practices in Higher Education WP 3: Assessment formats that support innovation in teaching WP 4: Targeted support to DG EAC in valorising outcome with MS Working Groups.	JRC.B.4 Yves PUNIE	1.2.b	EAC	EAC	Jan Pakulski	CNECT EMPL		01/01/2017 31/12/2018	CON-AA	1	Literature review on Teacher CPD in Europe	This report will scope out innovative, new or emerging Continuous Professional Development (CPD) practices in Europe.	01/03/2018	JRC technical reports	
												2	Literature review on Innovative Assessment	This report will document and conceptualise how both formative and summative assessment in education and lifelong learning can be designed so as to adequately capture complex, real-life competences and thus support more holistic and innovative teaching and learning strategies.	01/03/2018	JRC technical reports	
												3	Final report on innovative forms of CPD and case studies on training in Higher Education	This report will bring together results from case studies with the aim to: (i) better understand the innovative aspects of teacher CPD (Continuous Teacher Professional Development) and (ii) on Training and Development on innovative lecturing practices in Higher Education	03/12/2018	Science-for-policy reports	
148 - LAGREG JRC.B.3	5701 - HESS II Higher Education for Smart Specialisation II	This work package will analyse how higher education is contributing to the implementation of smart specialisation strategies. This will include monitoring of the European Structural and Investment Funds. It also aims to build capacity in selected European regions, for Higher Education Institutions to take a greater role in the innovation system that implements smart specialisation. The specific objectives are: 1.To understand and support HEIs to align their function of human capital development with RIS3 priorities. 2.To analyse how the synergetic and strategic use of public funds can allow HEIs to become transformative institutions in regions and contribute to smart specialisation. 3.To foster change within the selected HEIs to allow them to take on the envisaged boundary spanning role in implementing smart specialisation. 4.To facilitate external cooperation between the HEIs and other actors in the quadruple helix. 5.To co-produce knowledge within a Community of Practice.	JRC.B.3 JOHN HUW EDWARDS	1.2.b	EAC	EAC	Denis CROWLEY			01/07/2017 30/06/2018	CON-AA	2	Final report 2018	Final report on activities up to June 2018	30/06/2018	JRC technical reports	
150 - Education & Skills JRC.B.4	5780 - learn4LDA Learning for life in the digital age	This work package, which is an AA with DG EAC, addresses DG EAC policy priorities on monitoring, modernising and innovating Education and Training (E&T). The new AA will be in detail negotiated with DG EAC and signed before the end of the year 2017. Research work will concentrate around 6 tasks: Task 1: Further development of SELFIE, an instrument offered to educational institutions in Europe to assess their capacity to use digital technologies for more effective learning and to develop an action plan for improvement. This is of high interest to MS and received full support from DG EAC, the Cabinet and Commissioner Navracsics during the JRC Jour fix of 6 April 2017. Task 2: Contribution to the monitoring the evolution of education and training systems, based on indicators and benchmarks that are part of the Europe 2020 strategy and the strategic framework for European cooperation in education and training (ET 2020). Task 3: Tackling social inequalities in education. Provide empirical evidence at EU level on the relationship between (in)equality of opportunities, educational attainment and socio-economic and demographic characteristics. Task 4: Supporting effective teaching and the teaching profession. Teachers and the teaching	JRC.B.4 Yves PUNIE	1.2.b	EAC	EAC	n/a	EMPL	OECD - Organisation for Economic Co-operation and Development (OECD)		01/01/2018 31/12/2019	CON-AA	1	Effective Digital Age Learning: Evidence from a large scale self-assessment pilot on schools' digital	This report will present an analysis of evidence from piloting the SELFIE instrument in more than 3000 schools across 4-5 countries in Europe. This analysis will lay the foundation for the further mainstreaming of SELFIE in schools in Europe.	29/03/2019	Science-for-policy reports
												2	Joint Assessment Framework (JAF)	This technical report will provide the quantitative analysis of the indicators and benchmarks of ET 2020 which are produced on a yearly basis, jointly with related charts.	25/06/2018	JRC technical reports	
												4	Inequalities in education: Reducing the gap in student performance	The report will provide an analysis of PISA data to better understand the drivers of inequality of PISA scores, across countries and across time, distinguishing between factors that are related to the students' households, to students' characteristics and to school characteristics.	24/12/2018	Science-for-policy reports	
												5	Improving the teaching profession in Europe: an empirical analysis	This report will provide results from a secondary statistical analysis of PISA 2015 which allows investigating teachers' classroom practices and their relation to students' learning outcomes and possibly also from an analysis of 2016 Adult Education Survey 2016 focusing on the category of adults working in the teaching profession.	24/12/2018	JRC technical reports	
148 - LAGREG JRC.B.3	6307 - HESS III HESS III	HESS III will follow two previous work packages and analyse how higher education is contributing to the implementation of Smart Specialisation Strategies (S3). There are three main activities: - Action research in selected European regions to help build partnerships between regional authorities and local Higher Education Institutions (HEIs) and understand how Higher Education can be integrated into S3 policy mixes. - Monitoring of the European Structural and Investment Funds related to HE spending - Disseminate results to a wider policy audience. The research undertaken in this WP will also contribute to the Knowledge Hub on Higher Education that is managed by the JRC on behalf of DG EAC.	JRC.B.3 JOHN HUW EDWARDS	1.2.b	EAC	EAC	n/a			01/07/2018 30/06/2020	CON-AA	703308	Policy brief	Policy lessons from project mid term	31/03/2019	JRC contributions to policy documents	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
150 - Education & Skills JRC.B.4	6403 - Learn4LDA-II Learning for life in the digital age	This WP is an AA, to be negotiated with DG EAC in 2018 and signed before the end of 2018, represents the continuity of the partnership with DG EAC and its support on JRC financing each year. It consists of research and policy support on modernising and innovating Education and Training (E&T) and on addressing the 21st century skills challenges faced in Europe, so as to achieve more effective and relevant learning outcomes, tackle skills mismatches and provide wider and more inclusive access to education. Specific research targets will be identified so as to better address ET2020 policy priorities in agreement with DG EAC. This work-package also includes research in support of lifelong learning including the analysis and monitoring of Europe's education and training systems so as to reinforce EAC's competence for evidence-based policy coordination. B.4 has set itself firmly as an important actor in EAC's broader network of knowledge management, showing clear competitive advantage when compared to other actors.	JRC.B.4 Yves PUNIE	1.2.b	EAC	EAC	n/a	EMPL	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2019 31/12/2020	CON-AA					
7647 - H-EU JRC.B.7	6425 - E.UNIV2 Entrepreneurial Universities	E.UNIV2 consists of an analysis which integrates a comparative case study of 7 European universities with a multi-level econometric analysis to assess the effect of a number of university characteristics and institutional factors on the propensity of universities to engage strategically and intensively with private sector actors in their innovation system. The main data source for the qualitative case studies involves data collected in 2017 by a network of experts following a JRC provided set of questions which build on the joint EAC-OECD work in the framework of HEInnovate. This information is supplemented by desk research and interviews. The experts were also asked to provide data that will be used in the quantitative analysis. Other university level data sources include the ETER, UMR, the Leiden Ranking and participation in the EIT KICs. For the national level data, use is made of public funding data collected through the PREF study, an operationalization of the data collected on evaluation systems in the Performance Based Funding study and other system level data collected e.g. by the European University Association. These analyses will yield intermediate reports that feed	JRC.B.7 KOEN JONKERS	1.2.b	EAC	JRC	n/a	CNECT GROW REGIO RTD		01/01/2017 31/12/2018	INS-RS	2	2-3 articles on entrepreneurial universities and their contribution to innovation	Following presentations at scientific conferences, 2-3 articles will be based on the analytical work on entrepreneurial universities which will draw lessons from the comparative case study analysis, country level characteristics and the quantitative analysis exploring the factors which influence the propensity of universities to engage with private sector actors, focusing on the relative role of university characteristics, autonomy, funding and evaluation systems. The aim is to publish these articles in journals like research policy, research evaluation, science and public policy and scientometrics.	13/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
1.2.c cultural and creative sectors - to assess the impact of specific culture-oriented initiatives on economic and social development, develop further tools for measuring and monitoring cultural activities and creativity in cities (see also key orientation 10.1.c)																
661 - COIN JRC.I.1	3968 - C3Monitor&more Monitoring & Benchmarking tools for EAC, RTD, NEAR, DIGIT, CNECT, GROW	The WP includes institutional activity in support to the CAB of Commissioner Navracsics. First, the JRC will further work on the development of the Cultural and Creative Cities Monitor, following request of the JRC Director General and in agreement with Commissioner Navracsics. It is an evaluation tool that aims at monitoring cultural and creative initiatives at city level in Europe and at assessing the impact of specific culture-oriented initiatives on cities' economic and social development. The tool could help to better prioritise resources and to advocate for building upon one of Europe's key strengths: its talented and diverse creative population, with a focus on smart specialization in terms of cultural and creative activities. Second, the JRC will work towards the development of a WALKABILITY INDEX for the EU (at neighbourhood, city and functional urban area level). Policy goals underpinning the index development: to promote low-carbon mobility, increase road safety, promote physical activity of local populations. The index could further inform urban planning in the EU. [jointly by the CC on Composite Indicators and Scoreboards, the KC on Territorial Development, the REGIOTRANS project, MIT lab, DG REGIO]. The WPK contribute to the Cities megaproject	JRC.I.1 Valentina MONTALTO	1.2.c	EAC	JRC	TIBOR NAVRACSICS	REGIO	- MASSACHUSETTS INSTITUTE OF TECHNOLOGY FGFAF - Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung E.V. WIPO - World Intellectual Property Organization	01/01/2016 31/12/2019	INS-RS	201801	Cultural and Creative City Monitor-Policy	This report derives key policy recommendations for the EU based on quantitative results from the Cultural and Creative City Monitor (CCCM) and from the dedicated web app of the CCCM	30/11/2018	Science-for-policy reports
												201802	Submission of Peer-Reviewed Articles on the Cultural and Creative Cities Monitor	At least one peer-reviewed article relating to policy recommendations stemming from the analysis of the data underpinning the Cultural and Creative Cities Monitor will be submitted to good-impact journals.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201901	Cultural and Creative Cities Monitor-release 2.0	The report discusses the features and properties of the second release of the Cultural and Creative Cities Monitor. The first release took place (6/7/2017 by Commissioner Navracsics). It is an evaluation tool that aims at monitoring cultural and creative initiatives at city level in Europe and at assessing the impact of specific culture-oriented initiatives on cities' economic and social development. The tool could help to better prioritise resources and to advocate for building upon one of Europe's key strengths: its talented and diverse creative population, with a focus on smart specialization in terms of cultural and creative activities. The report describes all the steps undertaken for the development of the cultural and creative cities monitor, from the development of the framework, selection of indicators, statistical analysis, quality assurance and policy recommendations.	30/11/2019	Science-for-policy reports
1.3.Environment																
1.3.1. Protecting and enhancing our natural capital																
1.3.1.a freshwater and marine environment - assess water resources and water-use efficiency, floods and droughts (linked to key orientation 9.1.1.a); provide hydro-economic modelling and assessment of implementation scenarios for the Water Framework Directive and related directives; provide integrated analyses of water allocation across economic sectors for Europe and other regions of the world (water-energy-food-ecosystems); develop methods to																
341 - Reference Materials JRC.F.6	654 - EnvRM Environmental Reference Materials	Judgements of the resilience of our natural capital to pollution are often based on monitoring data. The quality of this data is crucial for sound decision taking. Directive 2009/90/EC requires water monitoring laboratories in the EU to use reference materials to ensure the reliability and comparability of their monitoring data. This workpackage will develop certified reference materials (CRMs) for pollutants in water, including seawater and related biota and sediments. This concerns CRMs for substances which are regulated in the EU Water Framework Directive (WFD) 2000/60/EC and the Marine Strategy Framework Directive (MSFD) 2008/56/EC, many of which are potential endocrine disruptors, and for which no CRMs are available or under preparation by other CRM producers. The work will include the sustainable provision of environmental CRMs to analytical laboratories world-wide as well as contributions to the relevant working group(s) of the Common Implementation Strategy of the WFD and MSFD on measurement issues for chemicals.	JRC.F.6 Andrea HELD	1.3.1.a	ENV	JRC	Helen CLAYTON, ENV C.1			01/01/2014 31/12/2018	INS-RS	181	Certified Reference Materials	Reference Materials certified for pollutants and other substances relevant to the Water Framework Directive 2000/60/EC and Marine Strategy Framework Directive 2008/56/EC, including the related certification reports and scientific papers.	31/12/2018	Reference Material
703 - NC-Waters JRC.D.2	905 - Water4you Water quality for human consumption and use	Scientific leadership and support for the management of water quality for societal and ecosystem resource benefits under the European Directives (Water Framework Directive-WFD, Drinking Water Directive-DWD, Bathing Water Directive-BWD and Urban Waste Water Treatment Directive-UWWTD). Water4you is dealing with the complexity of chemical substances by implementing effect-based assays (bioassays) and harmonisation of nutrient standards (ECOSTAT Working Group). These are key challenges for the forthcoming WFD evaluation, with the final goal to improve the assessment of risk to humans and aquatic life. It provides scientific expertise and coordination for the Watch List mechanism, and investigates the contribution of water, as a reservoir of antibiotics, to microbial resistance and the route of exposure, e.g. drinking and bathing water. It provides a harmonised science-based approach in the implementation and review of the key EU legislation dealing with microbial water quality, thus improving coordination across Directives, and anticipates the need to consider climate-change events such as algal blooms and release of toxins. Acting as a centre for the assessment and certification of alternative methods for the microbiological monitoring foreseen in the DWD and the BWD, it contributes to the standardisation of best practices and innovative methods for the detection of pathogens.	JRC.D.2 Teresa LETTIERI	1.3.1.a	ENV	JRC	Bettina Doerer (ENV C1); Matjaz Malgaj (ENV C2)	CLIMA GROW SANTE	- WORLD HEALTH ORGANIZATION REGIONAL OFFICE FOR EUROPE ECHA - European Chemicals Agency (ECHA) EEA - European Environment Agency EFSA - European Food Safety Authority EMA - European Medicines Agency (EMA) ENV EU - Environmental authorities of the Member States and Candidate Countries	01/01/2016 31/12/2020	INS-RS	201801	Outcome of the first Watch List from the Water Framework Directive	The JRC will evaluate the monitoring data sets from 2015-2017 provided by the Member States in their implementation of the first Watch List of the Water Framework Directive (WFD). The report will collect the outcomes of the data analyses and will contribute to a first assessment of priority chemical substances, their concern for water quality in European waters and eventually of an extension of their monitoring programmes.	30/03/2018	JRC contributions to policy documents
												201803	Classification of ecological status	Within the ECOSTAT working group, guidance on ecological classification is developed, taking into account biological, physicochemical and hydromorphological quality elements. To support this process, JRC will deliver technical reports on classification methods and their sensitivity to specific pressures, and on the use of supporting elements for classification. The documents will establish criteria for a common framework required for understanding the impacts associated with pressures.	15/12/2018	JRC contributions to policy documents
												201901	Resistance to antibiotics: agricultural runoff and its contribution to Antibiotic Resistance	Agricultural runoff can be a potential sink of antibiotics and resistance-carrying elements as well of resistant bacteria. The Action Plan issued by the G20 Ministers of Agriculture in 2017, commits to taking action to reduce the risk of diseases and prevent the unnecessary use of antibiotics. To evaluate the potential contribution to the Anti-Microbial Resistance (AMR), water samples of agricultural runoff collected from areas close to farms and agricultural fields will be evaluated for the concentration of antibiotics, other pollutants and antibiotic-resistance carrying elements (DNA) presence. Outcomes of this study will be reported with the final goal to provide a map of the AMR areas.	30/11/2019	JRC technical reports
												201902	Algal bloom, toxin release and economic impact	Algal blooms are increasingly frequent phenomena which have a strong socio-economic impact (tourism) as well as consequences on human health and ecosystem resources. The report will provide the outcome of the investigation on the mechanisms of algal bloom events and provide parameters for detection of micro-organisms as an early warning system. These parameters can also be incorporated into modelling for forecast risk reduction and for support to crisis management systems.	30/10/2019	JRC technical reports
703 - NC-Waters JRC.D.2	1081 - SEACOAST Monitoring, modelling and assessment of the environmental status of marine and coastal waters	SEACOAST assists in implementing the environmental objectives of Directive 2008/56/EC (Marine Strategy Framework Directive - MSFD), as the environmental pillar of the EU's Integrated Maritime Policy. The Work Package also supports the cyclic review and revision of the MSFD technical annexes, and the assessment of Member State implementation status of (and compliance with) MSFD, ensuring continuity and coherence of approach as well as independent, robust scientific and technical advice to Commission and Member States, also through the continuous development of the MSFD Competence Centre (MCC). It also assists in the process of policy cross-compliance and integration in relation to all legislation connected to MSFD (e.g. Common Fisheries Policy, Water Framework Directive, Birds and Habitat Directive, EU Regulation on Invasion Alien Species). SEACOAST contributes as well to the development and exchange of marine knowledge and assessment of the marine environment through targeted modelling and monitoring activities. In particular, comprehensive ecosystem modelling, including higher trophic level, contributes to the further development of criteria, methodological standards, specifications and standardised methods for monitoring and assessment of Good Environmental Status (GES) descriptors in accordance with Articles 9 and 11 of the Directive; even more crucial, the modeling activities allow to test scenarios that anticipate the effects of policy implementation on the achievement of GES targets in EU regional seas. SEACOAST activities and products support the objectives of the Blue Growth agenda, enhancing knowledge on the marine environment as one of the essential components for the development of key sectors such as fisheries, coastal tourism, and marine biotechnology, thus effectively contributing to strengthen the economic resilience of EU coastal communities and maintain/develop the provision of ecosystem services against pressure from human activities and climate changes.	JRC.D.2 Francesca SOMMA	1.3.1.a	MARE	JRC	Matjaz.MALGAJ, DG ENV-C2	DEVCO ENV NEAR RTD	BSC - COMMISSION ON THE PROTECTION OF THE BLACK SEA AGAINST POLLUTION EEA - European Environment Agency HELCOM - Baltic Marine Environment Protection Commission/Helsinki Commission (HELCOM) ICES - International Council for the Exploration of the Sea OSPAR - Commission for the Protection of the North-East Atlantic Oslo-Paris Convention (OSPAR) UNEP MAP - Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (United Nations Environment Programme for the Barcelona Convention)	01/01/2018 31/12/2019	INS-RS	201801	Determining Good Environmental Status (GES) for the Marine Strategy Framework Directive (MSFD)	The JRC will carry out an in-depth assessment of Member State submissions pursuant Art. 9 in the MSFD and integrate with current work of the Regional Sea Conventions and latest research findings, to identify gaps and provide guidelines for common agreed methodological standards and rules for setting threshold values/reference levels for the newly adopted GES criteria (Article 9.3) at (sub)regional level for selected descriptors as per Annex I of the MSFD.	31/12/2018	Science-for-policy reports
												201802	Mediterranean and Black Sea modelling	The coupled hydrodynamic and ecosystem models for multi-year simulations of past and future socio-economic and climate scenarios in the Mediterranean and Black Sea (including validated higher trophic level modelling, linked to project AA MSFD 2016-18) will be delivered. Scientific/technical assessment of impacts from climate change and policy measures on GES and on provision of ecosystem services at different time and subregional scales in support of the MSFD implementation.	31/12/2018	Science-for-policy reports
												201901	Towards a revision of the Marine Strategy Framework Directive: scientific and technical evaluation of the MSFD over the first cycle of implementation.	JRC will analyze the overall process of the first cycle of the implementation of MSFD, focusing on the technical issues related to assessment, monitoring and measures. The analysis aims to evaluate the performance of MS at national and regional level regarding the achievement of GES. The outcomes of this analysis will provide scientific and technical input into the second cycle of implementation and will guide the follow-up work to the identified outstanding issues. The inclusion of the in-depth-assessment of the Member States' 2018 reporting will further evaluate the impact and the extent of the recommendations derived from the work conducted by JRC during the first cycle. This work will feed the reform of the MSFD foreseen in 2023.	31/12/2019	Science-for-policy reports
												201902	A Marine Modelling Framework for European Seas	Delivery of a Marine Modelling Framework (MMF) that is suitable for simulating selected European Regional Seas falling under MSFD legislation and beyond. Specifically, the MMF will allow assessing the consequence of different policy/climate scenarios on the ecosystem status comprising hydrodynamics, biogeochemistry and higher trophic levels, thereby covering the relevant MSFD indicators. By considering potential policy/climate scenarios, the MMF will permit to evaluate how political decisions and Programmes of Measures (e.g. freshwater management, litter, contaminants) could affect the Good Environmental Status (GES) of the marine ecosystems downstream. This analysis further contributes to the major components of the Blue Growth strategy, providing knowledge for the sustainable management of key sectors, such as fisheries and tourism.	31/12/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
565 - IPCheM-NextGen JRC.F.7	1734 - SOLUTIONS Solutions for present and future emerging pollutants in land and water resources management	Aims to produce consistent solutions for the large number of legacy, present and future emerging chemicals posing a risk to European water bodies with respect to ecosystems and human health. It will deliver a conceptual framework for evidence-based development of environmental & water policies. JRC will coordinate the development of an Integrated Data Portal (IDPS) to identify links between exposure and epidemiological data, to explore potential biological effects and lead to improved health.	JRC.D.2 Bernd GAWLIK	1.3.1.a	ENV	RTD	Bettina DOESER (ENV.C.1)	SANTE		01/10/2013 30/09/2018	CON-IA	2	Integrated Data Portal for SOLUTIONS	The Integrated Data Portal hosts the knowledge-base of the entire consortium and ensures the linkage between compound and structure-specific (UFZ), site-specific geo-referenced (EI), receptor-specific (species traits, species interactions), and spatial data (population and demography, land-use pattern, geology, soil types, hydrology, climate etc.) (Deltares). While sectorial aspects need to be embedded into a database, it is key to obtain an infrastructure allowing also sub-structure searches.	30/09/2018	Scientific information systems and databases
568 - WEFE Nexus JRC.D.2	1756 - GLOBAQUA Managing the effects of multiple stressors on aquatic ecosystems under water scarcity	GLOBAQUA is seeking the understanding of stressors interactions, species interactions, species-stressor-relationships and impacts on the ecological functioning, stability and resilience of the aquatic ecosystems in order to implement water policy and optimal decision making in water resources management under complex multiple stress conditions.	JRC.D.2 Alberto PISTOCCHI	1.3.1.a	ENV	RTD	Peter GAMMELTOFT (ENV)	CLIMA		01/02/2014 31/01/2019	CON-IA	114	Optimum of alternative management strategies	D11.4 Optimum of alternative management strategies communicated as maps and tables In: 012 Policy recommendations	31/01/2018	Scientific information systems and databases
												115	Evaluation and upscaling	D11.5 Evaluation of Indicators of biodiversity and water scarcity as results of a 5x5km resolution upscale to a pan-European scale in comparison with results from the case study basins In: 016 Final integrated models at the basin scale	31/07/2018	Scientific information systems and databases
568 - WEFE Nexus JRC.D.2	2321 - NITRATES DIRECTIVE Ad-hoc support for the assessment of Nitrates Vulnerable Zones (NVZ) in the EU	Implementation of the Nitrates Directive and associated Vulnerable Zones	JRC.D.2 Faycal BOURAOUI	1.3.1.a	ENV	ENV	Alia Altifar de la Fuente; Andrea Vettori (ENV B1)	RTD		17/03/2015 16/03/2021	CON-AA	201801	Final Report	Final report covering the work under Del 1.1: Refitted and updated multi-layered ArcGIS viewer producing maps and automatic reports with layers description; Del 1.2: Comparative viewer on the monitoring networks of MS in the framework of the monitoring exercises implemented; Del 2.1: Assessments of NVZ designation; Del 3.1: Updated FATE map including NVZ layers based on datafiles on NVZ provided by MS; Del 3.2: Ad-hoc maps and tables of designations in specific areas	16/03/2018	Scientific and policy reports
												202101	Comprehensive reports	Comprehensive reports including eventual gaps in Nitrate Vulnerable Zones designation and assessment of water quality, as concerns nitrates concentrations in surface water and groundwater, as well as eutrophication in surface water, including water courses, lakes, estuaries, coastal waters and marine waters.	28/02/2021	JRC technical reports
703 - NC-Waters JRC.D.2	3880 - MSFD 2016-2018 Implementation of GES and other aspects of Directive 2008/56/EC (MSFD)	This work package provides technical and scientific assistance to the Commission in: i) the assessment of Member States implementation status of (and compliance with) MSFD; ii) the process of policy integration, cross-compliance and efficient reporting in relation to all related legislation (Habitat and Birds Directives, Common Fisheries Policy, etc.), e.g. under the principle "report once, use many". JRC prominent role will ensure continuity and coherence of approach as well as independent, robust scientific and technical advice in the process of further implementation and assessments of the Directive.	JRC.D.2 Francesca SOMMA	1.3.1.a	ENV	ENV	Matjaz MALGAJ, DG ENV-C2	MARE RTD	BSC - COMMISSION ON THE PROTECTION OF THE BLACK SEA AGAINST POLLUTION HELCOM - Baltic Marine Environment Protection Commission/ Helsinki Commission (HELCOM) OSPAR - Commission for the Protection of the North-East Atlantic Oslo-Paris Convention (OSPAR) UNEP MAP - Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (United Nations Environment Programme for the Barcelona Convention)	01/09/2016 31/12/2018	CON-AA	1	Advances in monitoring for the Marine Strategy Framework Directive (MSFD)	The JRC will carry out a thorough in-depth assessment of the state of the art methodological approaches at national and Regional Sea Conventions (RSCs) level and review Member State's reporting on monitoring programmes submitted in 2014, to produce guidance on methodological approaches to monitoring for MSFD descriptors; the guidance will also propose standardised methods for monitoring, while identifying aspects which need further harmonisation between Member States to improve the consistency of monitoring data and ultimately monitoring effectiveness across EU and beyond.	31/12/2018	Science-for-policy reports
												13	Recommendations on standardised monitoring	Report(s) with recommendations on standardised methods for monitoring for descriptors 1, 22, 5, 7, 8, 9 and 103 to be considered for future revision of the Commission Decision on GES covering requirements of MSFD Art. 11.4.	31/12/2018	JRC technical reports
												14	Methodological standards for GES	Report(s) with guidelines/recommendations for common agreed methodological standards and rules for setting threshold values for GES criteria (where relevant) for descriptors 1, 22, 5, 7, 8, 9 and 103 to be considered in future revision of the Commission Decision on GES covering requirements of MSFD Art 9.3.	31/12/2018	JRC technical reports
												2	Reference levels for marine litter under Marine Strategy Framework Directive (MSFD)	A final report on litter baselines and reference values, including (to the extent possible) quantities of litter at the appropriate geographical level.	31/12/2018	Science-for-policy reports
568 - WEFE Nexus JRC.D.2	3922 - WIRE Water reuse for Irrigation and aquifer REcharge	The Part I of the work to be conducted shall result into a final (technical) report proposing: • the technical requirements for minimum quality requirements for water reuse in agricultural irrigation and aquifer recharge, in a format that will allow an easy transcription into Commission recommendations or a legal instrument; • technical and scientific justifications for these requirements, including a description of the relevant scientific and technical references and of the experts' consultation process; • a draft mandate to the European Committee for Standardization (CEN) for further development of standards, if appropriate and necessary. Part II of the work includes a best-practice guide on setting of nutrient standards for surface waters, to be developed and reported to the Common Implementation Strategy Process.	JRC.D.2 Bernd GAWLIK	1.3.1.a	ENV	ENV	Bettina Doeser DG ENV C1	AGRI REGIO		04/05/2016 28/02/2019	CON-AA					
703 - NC-Waters JRC.D.2	3924 - CHEMISS Chemical issues to address under Water Framework Directive	Water Framework Directive (WFD) is the European directive which final goal is to protect the European waters by achieving the good water quality either for ecological or chemical status. Chemiss is dealing with the chemical status and provides scientific support to the review of Watch List, a mechanism aims to provide high-quality monitoring information on the concentrations of polluting substances in the aquatic environment across the EU and support the identification of priority substances for regulation under the WFD. Furthermore to the light of the new scientific evidences, it reviews the availability and suitability of practical effect-based assays for assessing chemical mixtures, develops effect-based assay and Environmental Quality Standard (EQS). The project will also provide scientific support to the review of the WFD foreseen in 2019.	JRC.D.2 Teresa LETTIERI	1.3.1.a	ENV	ENV	Bettina Doeser Bettina.DOESER@ec.europa.eu; Helen CLAYTON, Helen.CLAYTON@ec.europa.eu; Jorge RODRIGUEZ ROMERO, Jorge.RODRIGUEZ-ROMERO@ec.europa.eu.	GROW SANTE	ECHA - European Chemicals Agency (ECHA) EEA - European Environment Agency EFSA - European Food Safety Authority	01/01/2017 31/12/2018	CON-AA	3	Development/Refinement of the Effect-based Assays	Report on the development/refinement of effect-based assays, including on their relationship to chemical analysis and the trigger values, and on the inter-laboratory comparison. The report will provide a list of bioassays recommended for the identified effect groups based on in-house experimental data in collaboration with European and International groups as well from literature data.	30/06/2018	JRC technical reports
												4	Id new substances with the effect-based approach	Report on the approaches recommended for identifying the substances contributing most significantly to effects detected using the effect-based assays.	30/10/2018	JRC technical reports
												5	Summary report on effect-based assays	Summary of the report on the effect-based methods and the recommendations for the review of the WFD. The report should provide advantages and limitation of these methods highlighting the strengths and weaknesses for their potential inclusion in the regulatory process.	31/12/2018	JRC technical reports
568 - WEFE Nexus JRC.D.2	4040 - AMBER Adaptive Management of Barriers in European Rivers	AMBER develops innovative solutions to river fragmentation in Europe through an integrated adaptive barrier management approach. Main outputs are the first global atlas of stream barriers in Europe, accessible by all citizens via an online web portal, and a toolkit for solving problems of barrier effects.	JRC.D.2 Wouter VAN DE BUND	1.3.1.a	ENV	RTD	Lourdes ALVARELLOS, ENV C.1			01/06/2016 31/05/2020	CON-IA	2	Online Stream Barrier Interactive Atlas	Online INSPIRE compliant GIS spatial database with the location of barriers, their type and their attributes covering Europe, publicly accessible with interface for data input by the public, integrated in the JRC Water Portal	31/01/2019	Scientific information systems and databases
568 - WEFE Nexus JRC.D.2	4900 - WEFE-2030 Water-Energy-Food interactions under current and future climate and socio-economic conditions	WEFE-2030 will provide modelling-based estimates of the baseline conditions and interactions of water quantity, water quality, energy production and food production. It will also assess the impacts of alternative solutions of water management, energy and food production strategies that result in overall benefits to the economy and society at broad, with a more balanced water demand and availability, especially in water-stressed areas. It is important to analyze these strategies using linked modelling systems - to become reference models -, such that various feedback mechanisms are taken into account properly. The focus will be on Europe, the full Mediterranean area and Africa. The added value of this Work Package is that state-of-the-art model estimations (CAPRI, Dispa-SET, EPIC, LISFLOOD and BIOMA) of water, food and energy production will build on cross-disciplinary contributions at the JRC. Interactions between water-energy, water-food, and food-energy will be elaborated, with the various feedback mechanisms for the first time embedded in the various models. This enables a more thorough analysis of the constraints and a sound evaluation through modelling of proposed measures for their joint impact on water quantity and quality, food production, and energy production. Several time windows will be examined: - Time-horizon 2018-2020: Immediate effects of measures on water, food and energy availability under present conditions - which are for example relevant for the Water Framework Directive and Floods Directive. - Time-horizon 2030: Intermediate effects of measures on water, food and energy availability, taking into account socio-economic changes, land use and climate projections until 2030, with an embedding of the agricultural policies. - Time-horizon 2050: Mid-term effects, including socio-economic changes, land use and climate projections until 2050, embedding climate mitigation measures implemented following the Paris agreement, and of relevance for the "The World In 2050 (TWI2050) initiative and the fulfilment of several of the Sustainable Development Goals. WEFE-2030 will lead to an integrated Water-Energy-Food toolbox ready for support across several sectoral policies. It will also contribute to DG ENV's efforts to establish an integrated policy assessment capacity for freshwaters in Europe. Main deliverables include the outlook reports on	JRC.D.2 Arie DE ROO	1.3.1.a	ENV	JRC	Bettina DOESER ENV C.1, Matjaz MALGAJ	AGRI CLIMA DEVCO ENER ESTAT REGIO	- United States Department of Energy ICPDR - International Commission for the Protection of the Danube River EEA - European Environment Agency UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2018 31/12/2020	INS-RS	201804	Global Dataset on Reservoir and Lakes Extent and Volume 1984- 2015	Surface water extent and volume dataset of lakes and reservoirs for 1984-2015, consisting of monthly timeseries of extent and (where possible) volume of the largest reservoirs and dams, to support the modelling of water resources and the estimation of energy production and irrigation water availability. Based on the Google Engine Global Surface Water Dataset developed by JRC	30/11/2018	Datasets
												201807	Integrated assessment modelling for an assessment of the effectiveness of water policy measures	Report supporting the BLUE2 initiative of DG ENV on the analysis of scenarios about driving forces and pressures and about measures taken to improve freshwater environments. It will provide more insight into the functioning of the WFD and could be used in the context of the possible review of the EU water legislation. It will build on existing models from flood and drought monitoring and forecasting to water resource management prepared as open source toolbox.	31/10/2018	Technical systems
												201901	Projected water-energy-food supply-demand disparities and alternative options for management of consumption	Report providing an outlook on trajectories on water resources use in the next decades in Europe, taking into account policy changes, climate change, and socio-economic changes incl demographic changes.	31/12/2019	JRC technical reports
												201902	A spatial baseline analysis and projection of water and energy requirements of agricultural and urban areas in the Mediterranean region	Report on the assessment addressing the intersectoral flows of energy and water as source of stability and socio-economic development in the Mediterranean area	31/12/2019	JRC technical reports
												201801	report on baseline and full implementation scenarios for freshwater and marine systems	Establishment of a baseline scenario and a full implementation scenario in the form of data layers that can be used by the various models	31/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
568 - WEFE NEXUS JRC.D.2	Model development and operation in the context of the BLUE2 project (BLUE2)	The aim of the WMF is to specifically assess the consequences of different policy/climate scenarios on the ecosystem status (from hydrodynamics, biogeochemistry up to higher trophic levels) of regional European Seas. The second part of the AA covers the freshwater modelling. It is intended to support the development of databases and scenario generator acquired in a separate initiative by DG ENV. This integrated approach is fully in line with the importance that the Commission attaches to Better Regulation. The modelling tools supported with the work of the present AA should progressively become open to Member States or regional bodies to support their own activities. In the midterm it	JRC.D.2 Adolf STIPS	1.3.1.a	ENV	ENV	Bettina Doesser ENV C1	ENV MARE	ENV EU - Environmental authorities of the Member States and Candidate Countries	01/01/2018 31/12/2019	CON-AA	201901	Postprocessing of outputs and reporting	Modelling the impacts of EU water policy implementation scenarios on freshwater and marine resources, postprocessing the output, making the results available & report writing	31/12/2019	JRC technical reports	
703 - NC-Waters JRC.D.2	5460 - SeaDataCloud SeaDataCloud - Further developing the pan-European infrastructure for marine and ocean data manage	The SeaDataCloud project focuses on the management and availability of marine and maritime knowledge in Europe and beyond. It aims at building upon and expanding the achievements of the existing SeaDataNet infrastructure, with the following main objectives: (1) to enhance and innovate the SeaDataNet-developed standards, products and services, offered to an expanded multi-disciplinary community; (2) to promote the adoption of the protocols and standards developed for interoperability to other key downstream initiatives in the marine/maritime field, with a perspective to expand the communities of data providers and of data users, and to exploit synergies with relevant ESFR/ infrastructures; (3) to present a long-term sustainable arrangement for the integrated SeaDataNet infrastructure, and for networking the key data centres in Europe dealing with in situ and remote sensing data for marine research (including coastal research) and their resources.	JRC.D.2 Vittorio BARALE	1.3.1.a	ENV	RTD	MATJAŽ MALGAJ			01/01/2017 31/12/2020	CON-IA	012018	Scientific Committee report	Report with objective to: (1)improve understanding and meeting requirements of lead user communities, such as science community, EMODnet, Copernicus Marine Environmental Monitoring Service (CMEMS), and international scientific programmes; (2)tune the specifications and developments of SeaDataCloud services from a user perspective.	14/12/2018	Science-for-policy reports	
												012019	Scientific Committee Report	Report with objective to: (1)improve understanding and meeting requirements of lead user communities, such as science community, EMODnet, Copernicus Marine Environmental Monitoring Service (CMEMS), and international scientific programmes; (2)tune the specifications and developments of SeaDataCloud services from a user perspective.	13/12/2019	Science-for-policy reports	
												012020	Scientific Committee report	Report with objective to: (1)improve understanding and meeting requirements of lead user communities, such as science community, EMODnet, Copernicus Marine Environmental Monitoring Service (CMEMS), and international scientific programmes; (2)tune the specifications and developments of SeaDataCloud services from a user perspective.	18/12/2020	Science-for-policy reports	
703 - NC-Waters JRC.D.2	6741 - Antibiotic4you Antibiotics in aquatic environment: mechanism and key factors to understand the environmental contribution to the antimicrobial resistance.	The Antibiotic4you project contributes to the Exploratory Research (ER) Programme. The development of antibiotics has been one of the most important achievements of the 20th century, saving millions of human lives since then. Antibiotics have been produced and employed for many purposes, not only to treat infectious diseases, but also for other applications such as antitumor, antiviral and anticancer agents. However, we live now in an era where the antibiotics that we have relied on are becoming less efficient due to the apparent overuse in medical and veterinary applications. High concern has been expressed worldwide due to the increase development and spread of antimicrobial resistance (AMR), which occurs when drugs are no longer effective in treating infections caused by micro-organisms. The ER project antibiotic4you aims to address the contribution of the aquatic environment to microbial resistance. Water (fresh and marine waters) can act as reservoir of antibiotic resistant bacteria (ARB) due to a combination of naturally occurring resistance with resistance present in animal and human waste. Furthermore, continuous exposure to low concentration of antibiotics present in environmental	JRC.D.2 Teresa LETTIERI	1.3.1.a	ENV	JRC	n/a			01/03/2018 29/02/2020	INS-ER	01	Final report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of the first year.	28/02/2020	JRC technical reports	
702 - NC-Soil JRC.D.3	6801 - BIO4A-Soil Soil considerations associated with the production of advanced sustainable BIOfuels for aviation	The work package aims to assess the soil-related feed backs associated with the large-scale production of certified aviation biofuel produced from sustainable waste feed stock in the European Union. As inputs to the overall assessment of the viability of producing commercial-scale volumes of ASTM-certified biojet (HEFA) at competitive prices, the work package will carry out a focused assessment of the environmental sustainability of potential feedstock production on marginal land in the Mediterranean region of the EU through the development of a set of environmental sustainability indicators that also consider scenarios for land use change (driven by climate change) and through the cultivation of drought resistant no-food oil crop for biofuel production. The JRC will assess changes in key soil-nutrient cycles to ensure that cultivation strategies are compliant with low-Indirect Land Use Change specifications within the current EU REDII proposal, SGD targets and strategies for land-degradation neutrality. The activity will assess the potential increase in the resilience of marginal soils to pressures of drought, climate change and desertification through the preservation and increased sequestration of soil organic carbon.	JRC.D.3 Arwyn JONES	1.3.1.a	ENER ENV	RTD	n/a	AGRI CLIMA RTD		01/03/2018 01/03/2022	CON-IA	BIO4A1	Sustainable potential for advanced biofuel production on marginal lands in the Mediterranean Region	Identification of marginal and underutilized land suitable for growing dedicated energy crops to be defined as the result of a review of scientific literature together with previous EC-funded and international projects on the subject (i.e. harmonization of definitions); Planting zonation/crop suitability maps of main varieties of oil crops on marginal lands based on their biological characteristics, environmental requirements, developmental status, type of farming system and natural geographic conditions. Estimation of the amount of the potential feedstock production on the identified areas according to the availability of land, the level of exploitation and utilization of the selected areas, and the characteristics of the selected dedicated energy crop(s).	31/05/2020	Science-for-policy reports	
												BIO4A2	Assessment of the environmental sustainability indicators for advanced biojet fuel value chains on marginal lands in the Mediterranean.	This deliverable aims to build an environmental sustainability assessment of the integrated and optimized Bio4A process. The cultivation of advanced biofuels feedstock on marginal and underutilized land requires the development of a robust and reliable methodology to describe the effective environmental sustainability indicators the context of the case study sites of the overall project. Particularly, this assessment will take into account the fossil energy consumption and potential contributions to renewable energy and GHG emission reduction targets. Where environmental data necessary for the measurement of the tailored set of sustainability indicators for bioenergy are not available, suitable proxies will be developed. This task will provide the goal and scope of the assessment, identification of environmental impacts to be considered and definition of indicators, methodologies to evaluate environmental sustainability criteria selected, and their application at case study sites.	30/09/2021	Science-for-policy reports	
												BIO4A3	Assessment of socio-economic sustainability indicators for advanced biojet fuel value chains on marginal lands in the Mediterranean	The objective of this deliverable is to study the potential socio-economic impacts of the Bio4A methodology by conducting a sustainability assessment of the overall value chain based on inputs from all Bio4A project partners. A tailored methodology will be developed to describe the effective parameters of interest to develop a set of social and techno-economic sustainability indicators, that will be measured for each of the selected representative pathways. Particularly, the social impacts will assess the potential effects of advanced biofuel production on issues such as rural and social development, local food security, land rights, allocation and tenure of land used for bioenergy production, change in income, jobs in the bioenergy sector, bioenergy used to expand access to modern energy services.	30/09/2021	Science-for-policy reports	
												BIO4A4	Contribution to project reporting	JRC contribution to Mid-Term Report 1, Mid-Term Report 2 and the project Final Report	01/03/2022	Science-for-policy reports	
568 - WEFE Nexus JRC.D.2	7242 - NB-SOLUTIONS Nature-based solutions for climate change adaptation and water pollution in agricultural regions	The project will identify 9 pilot cases where nature-based solutions are implemented with different primary purposes. The pilots will focus on three categories of problems: 1)Treatment of manure-derived wastewater and sludge before application as fertilizer. This category will cover aspects of constructed wetlands or other solutions exploiting natural processes under human control, with well-identified input flows and required effluent standards; 2)Landscape elements in relatively wet and cold regions, addressing diffuse sources of pollution due to fertilizers and/or pesticides, unlike the previous category, in this case the landscape elements are "passive" (i.e. the natural processes they support are not man-managed) and treat input flows which	JRC.D.2 Alberto PISTOCCHI	1.3.1.a	ENV	JRC	n/a	AGRI CLIMA ENER REGIO	EGS - Eurogeosurveys ICPDR - International Commission for the Protection for the Danube River EIB - European Investment Bank ENV EU - Environmental authorities of the Member States and Candidate Countries	01/01/2018 31/12/2019	CON-AA	201801	Consultant studies on the pilots and EU scale synthesis	Consultant reports on the 9 pilot cases and EU-wide synthesis.	31/12/2018	External study reports	
												201901	Nature based solutions in agricultural water management - policy messages	Report summarizing the outcomes of the work and outreach to the European Parliament and decision makers in the field of water and agriculture.	31/12/2019	Science-for-policy reports	
1.3.1.b biodiversity, forests and soils - support the implementation and final evaluation of the EU biodiversity strategy, notably by assessing ecosystem conditions, ecosystem services and natural capital accounting in the context of the environmental knowledge community, the green infrastructure, the invasive alien species information system, global biodiversity monitoring and the sustainable supply and demand of biomass for all uses. Analyse and model																	
702 - NC-Soil JRC.D.3	899 - SOIL-NACA Securing SOIL as Natural Capital	SOIL_NACA provides the soil-centric framework required to support the EU's Soil Thematic Strategy while contributing to related policy areas (e.g. CAP, Climate and Energy Strategy, SDGs, EU Biodiversity Strategy, UNCCD, UNCCD) that depend on the cross-sectorial aspects of soil and the land-based services it sustains. The WPK assesses soil functions (e.g. food production, water regulation, carbon sequestration) in relation to pressures (e.g. erosion, pollution, sealing) due to competition for land and climate change. The WPK contributes to policy development through its support to the EU Soil Expert Group Global, the European Soil Partnership (Secretariat, and involvement in technical working groups), the Global Soil Partnership (JRC chairs the Intergovernmental Technical Panel on Soils - ITPS), the Common Forum on Contaminated Land, the Global Soil Biodiversity Initiative and through high interaction with Member State institutions (both scientific and policy making) through networking at European and global levels (ESBN, EIONET-SOIL, ENSA, ELSA, EU Danube Strategy). The WPK generates value-added knowledge for assessments of the security of soil as a resource, by generating novel data that underpin policy-relevant indicators (e.g. EU SDG Core, Contaminated Sites) while supporting scenario and trend analyses. Data are derived through the harmonisation of national sources (both EU and internationally), from in-house modelling and the analysis of primary data (e.g. LUCAS). In response to formal requests from DG ENV, this WPK will deliver policy-relevant reports on soil condition based on LUCAS data and contribute to the MAES Soil Pilot regarding ecosystem services provided by soil. The WPK provides active support to soil awareness-raising initiatives, by developing strategies to better communicate soil-related issues to policymakers and the wider community through mechanisms such as targeted policy briefings, the continued development of the the JRC Soil Atlas series (e.g. for Asia) and EC public engagement events where soil is a major theme. There is high demand for collaboration from several EC agencies (EEA – e.g. State of European Environment Report, EFSA – e.g. pesticide residue assessment) and UN bodies (FAO – Global Soil Partnership, CBD/IPBES – Regional Assessments, UNCCD – land degradation). The WPK will contribute a soil organic carbon indicator to the EU SDG Core Indicator Set and support JRC collaboration with CRAES on soil pollution.	JRC.D.3 Arwyn JONES	1.3.1.b	ENV	JRC	Jacques Delsalle (ENV B.1)	AGRI CLIMA DEVCO ECHO ESTAT GROW OP REGIO RTD SANTE			01/01/2016 30/12/2020	INS-RS	201701	Improving soil awareness, education and outreach	The EU Soil Thematic Strategy aims to improve the appreciation of the value and relevance of soil by all levels of civil society. The JRC will continue to expand these elements by developing strategies for communicating soil-related issues to the wider community through mechanisms such as policy briefings, the JRC Soil Atlas series (peat/Asia), 2nd Global Soil Biodiversity Conference and public engagement events (e.g. ESOF 2018, Salone Dei Gusti 2018, EDD, European/Global Soil Partnership).	21/12/2018	Conferences and workshops organized by the JRC
													201703	Soil ecosystem services indicators	Indicators are critical to monitor the impact of EU land-based policies and progress towards SDGs. Quantitative methodologies will be developed to integrate information derived from the LUCAS Topsoil Survey and other data within the European Soil Data Centre to improve indicator performance and to enable regular monitoring. Updated assessments will be provided to customer DGs particularly on the valuation of soil ecosystem services and economics of land degradation. Support to MAES-SOIL Pilot.	22/12/2018	JRC contributions to policy documents
													201705	Towards a global assessment of soil erosion	Adaption of the EU RUSLE2015 model to develop the first global soil erosion assessment. This deliverable will contribute to the ITPS 2020 Status of the World's Soil Resources Report, and provide a benchmark for soil degradation considerations in EU development policies.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													201707	European Soil Data Centre (ESDAC)	Maintenance of a permanent repository of EU soil data and information by policy-relevant data collection (e.g. soil monitoring systems, citizen science, EO) and harmonisation, quality control and distribution to Commission Services & other parties. Coordination of formal data requests to Member States will be carried out through the EIONet-Soil network and thematic networks. Metadata and access to data will be provided to the ESDAC/JRC OpenData Portal. Support to the EU Danube Strategy.	21/12/2018	Scientific information systems and databases
													201803	Support to Global Soil Initiatives	In line with the goals of the EU Soil Thematic Strategy, the European Commission has pledged to support the Global Soil Partnership (GSP) and its regional implementation as the European Soil Partnership (ESP). The JRC provides scientific support to the work of the ITPS, the implementation of action plans for each GSP Pillar and as the Secretariat of the ESP. It will also initialise the coordination of the ITPS 2020 Status of the World's Soil Resources Report and liaise with IPCC/UNCCD and the IPBES Land Degradation and Restoration Assessment.	31/12/2018	JRC contributions to policy documents

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
									ISRIC - World Data Centre for Soils OECD - Organisation for Economic Co-operation and Development (OECD) UN CBD - UN Convention on Biological Diversity UNCCD - United Nations Convention to Combat Desertification (UNCCD)			201804	Support to EU Soil Thematic Strategy Impact Assessment	The EU Soil Thematic Strategy aims to improve the appreciation of the value and relevance of soil by all levels of civil society. In anticipation of a new drive to establish a legislative framework in soils, DG ENV plan to prepare an evidence based document in preparation of formal impact assessment and working documents. This deliverable will support this through contributions to the EU Soil Expert Group (SECGEN - E03336) and directly to ENV.D1 through supporting briefings, reports and data from the ESDAC on soil functions (e.g. MAES-SOIL) and soil threats (e.g. erosion, landslides, contaminated sites, diffuse pollution, etc). The deliverable will also continue to develop strategies for communicating soil-related issues to the wider community through mechanisms such as public engagement events and the European/Global Soil Partnership, and continued collaboration with JRC strategic network of partners.	31/12/2019	JRC contributions to policy documents
												201807	Soil contamination	Update indicator "Progress in the management of contaminated sites in Europe (LSI003)", support continued development of EU contribution to SDG target 3.9 (deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination) and Goal 12 Target (environmentally sound management of chemicals and all wastes throughout their life cycle). Support to the implementation of formal collaboration on soil pollution in China (JRC-CRAES Collaboration Agreement). Inclusion of the analysis of plant protection product residues and other organic pollutants in the laboratory analysis of LUCAS 2018 soil samples.	31/12/2018	Science-for-policy reports
												201808	Report on LUCAS SOIL 2015	Report of soil state as assessed from data collected and analysed from the 2015 LUCAS Soil Survey. The report will include regional and bioclimatic assessments of soil characteristics, including soil carbon, which will be the basis of EU SDG soil organic carbon. The report will also contain an assessment of change in soil condition from 2009/2012. This will be the first systematic assessment of trends in soil conditions for the EU.	31/10/2018	Science-for-policy reports
701 - NC-Forest JRC.D.1	927 - FISE APPS Forest Information System for Europe Applications	The overall goal of FISE Applications is to contribute to the further development the Forest Information System of Europe by creating harmonised Europe-wide information on the multifunctional role of forests and forest resources and integrating diverse information systems and data platforms (e.g. EFDAC) into a dynamic modular system that combines data and models into applications. Applications on forest disturbances (including pests in Europe and the detection and quantification of potentially irregular logging activities in forests protected by Natura 2000), forest and the bioeconomy, forest and climate change and forest and ecosystem services will be developed. FISE-APPS will support the EU Forest Strategy (for forests and the forest-based sector), the communication on protective measures against pests of plants, the EU Bio economy Strategy ("Innovating for Sustainable Growth: A Bioeconomy for Europe) and the implementation of Horizon 2020 by contributing to strengthening the methodological framework for more accurate and harmonized information derived from forest inventories and monitoring systems, able to feed into the EU information systems, e.g. the European Forest Data Centre.	JRC.D.1 PIETER BECK	1.3.1.b	ENV	JRC	Claudia OLAZABAL and Ernst SCHULTE (ENV.B1)	SANTE	EEA - European Environment Agency EFSA - European Food Safety Authority	01/01/2017 31/12/2018	INS-RS	422017	Pest vulnerability and spread modeling framework	Forest are increasingly pests exposed, partly due to growing volumes and reach of global trade/travel. Furthermore, climate change is likely to affect pest organisms/hosts in different ways, leading to new spatio-temporal patterns in pest outbreak dynamics. The task is to develop a framework to model the vulnerability of forest/tree crops to the spread of pests of particular concern including complex network theory to describe host parasite relations with the monitoring of abiotic stressors.	01/08/2018	Scientific information systems and databases
												9272018001	Contribution to 5th MAES report on ecosystem condition	The foreseen report will integrate the work of seven pilots (forest, agri, urban, freshwater, marine, nature and soil) on a common analytical framework for mapping and assessment of ecosystem condition. The aim of the framework is to prepare a proposal for assessing ecosystem condition at EU and MS level under the coordination of the DG-ENV's MAES working group.	31/12/2018	JRC contributions to policy documents
												9272018002	Paper on remote sensing of Xylella fastidiosa symptoms	A peer-reviewed research paper will demonstrate that advanced remote sensing techniques permit the early, and in some cases pre-visual, detection of Xylella fastidiosa symptoms. Early detection of Xylella fastidiosa infection is one of the major hurdles to efficient management of this pest, which is regulated at EU level. These scientific findings therefore have great policy relevance.	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
702 - NC-Soil JRC.D.3	1693 - RECARE Preventing and Remediating degradation of soils in Europe through Land Care	Develops effective prevention, remediation and restoration measures using an innovative trans-disciplinary approach, actively integrating and advancing knowledge of stakeholders and scientists in 17 Case Studies, covering a range of soil threats in different bio-physical and socio-economic environments. The current state of degradation and conservation will be assessed using a new methodology based on the World Overview of Conservation Approaches and Technologies (WOCAT) mapping procedure. Land Resource Management Unit (H05) is the Work Package Leader WP10 "Data use, Management and hosting" and will develop a data infrastructure for the project data (17 case studies for 10 soil threats).	JRC.D.3 Panagiotis PANAGOS	1.3.1.b	ENV	RTD	Birgit de BOISSEZON (RTD I.3.), Jacques Delsalle (ENV B.1)	AGRI	- UNIVERSITA DEGLI STUDI DI PADOVA - Norwegian Institute for Agricultural and Environmental Research - INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU FIZICA SI INGINERIE NUCLEARA - CYPRUS INTERNATIONAL	01/11/2013 31/10/2018	CON-IA	3	Mapping Chemical Soil properties	Mapping Chemical Soil properties based on LUCAS survey (pH, CACO3, N, P, K, CEC)	31/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4850 - MARS AGRIENV JRC.D.5	2301 - PEGASUS Public Ecosystem Goods And Services from land management - Unlocking the Synergies	Focusing on the provision of public goods by EU agriculture and forestry, PEGASUS will develop ways of making public good and ecosystem service concepts accessible and operational. The JRC will participate in several areas and lead WP2 concerning mapping and assessment of current and potential ES/PG provision in relation to the diversity of EU farming and forestry systems in the EU	JRC.D.5 Maria-Luisa PARACCHINI	1.3.1.b	ENV	RTD	Gaeten DUBOIS, AGRI H5	AGRI		01/03/2015 28/02/2018	CON-IA	52	D5.2 - Final version of the operational framework	To aid decision making processes on land management requirements to optimise the provision of public goods in agriculture and forestry in different bio-geographic, economic and social contexts in the EU (M35)	28/02/2018	JRC technical reports
4844 - NATCAPES JRC.D.3	2341 - Esmeralda Enhancing ecosystem services mapping for policy and decision making	To deliver a "flexible methodology" that can simultaneously provide innovative building blocks for pan-European national and regional ecosystem service mapping and assessment. Contributes to ensuring timely delivery of action 5 of the European Biodiversity Strategy and local assessments as required for spatial planning, agriculture, climate, water and nature policy.	JRC.D.3 JOACHIM MAES	1.3.1.b	ENV	RTD	Anne Teller (ENV.B.2)			01/02/2015 31/07/2018	CON-IA	3	Guidance Report	Guidance Report on how to apply the Multi-tiered flexible methodology for mapping ecosystem services integrating the three value domains (social, economic and biophysical). This deliverable will assess the current state of ES mapping in the EU and to develop a multi-tiered flexible ES mapping methodology to integrate the three value domains of ES (biophysical, economic and social) at different spatial and temporal scales.	31/07/2018	JRC technical reports
												4	Multifunctional assessment methods & map analysis	Report on multifunctional assessment methods and the role of map analysis. This will develop an integrated and consistent assessment framework in which different mapping approaches and techniques can be embedded.	31/07/2018	JRC technical reports
569 - BIOECONOMY JRC.D.1	3626 - ALTERFOR Improved forest management models	The forests of Europe are expected to generate a range of ecosystem services (ES), so that their management complies with European Union policies in the domains of environment, energy and rural development. Those objectives must be met despite increasing risks and uncertainty associated with anthropogenic climatic change, and interlinked with the dynamism of forest governance, ownership structures and land-use patterns. In its current state, the following objectives are: 1. To develop a set of FMM robust in terms of their relative capacity to deliver ES and reduce	JRC.D.1 Andrea CAMIA	1.3.1.b	ENV	RTD	DORU-LEONARD IRIMIE	AGRI CLIMA ENER GROW	MCPFE - Ministerial Conference for the Protection of Forests in Europe (MCPFE) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/04/2016 30/09/2020	CON-IA	1	Scientific publications	Scientific paper on the performance of the European Forestry Dynamics Model (EFDM) and comparison with other area-based forest simulators such as CBM and EFISCEN used for EU level projections.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												2	Analysis of European forest scenarios	Analysis of EU prospective forest scenarios and forest management models (FMM) on the basis of CBM and GFTM	15/12/2019	JRC technical reports
701 - NC-Forest JRC.D.1	3783 - FISE - Pro Forest Information System Prototyping	Availability of a FISE prototype (including its underlying systems and modules) which is ready for public access. Transfer of the FISE to the future host - to be selected by DG ENV - based on a sound concept paper and business plan jointly developed and agreed upon by all relevant parties.	JRC.D.1 Peter VOGT	1.3.1.b	ENV	ENV	Peter Loeffler	SANTE	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) Fo Fi Serv - Forest and forest fire services in the MS MCPFE - Ministerial Conference for the Protection of Forests in Europe (MCPFE)	01/01/2017 30/06/2019	CON-AA	201702	FISE Platform	Build a reporting function into FISE to provide monthly web statistics reports on FISE. These should contain at least the following data: -Total number of unique visitors, repeat visitors, visits, and page views for the whole month -Number of visits and page views per day -Traffic sources (direct visitors, search visitors, referral visitors) -Bounce rate and exit pages Pages visited and top pages	31/07/2018	Scientific information systems and databases
												201705	FISE updating and EFDAC	Following the INSPIRE Directive provide DG ENV and the potential future host access to relevant datasets within the European Forest Data Centre and provide support to the updating of FISE following requirements from Dg ENV.	28/06/2019	Scientific information systems and databases
												201706	FISE expert	Provide a dedicated JRC expert with responsibility for the FISE transfer and who acts as a contact point for DG ENV and the potential future host during the transition phase. Provide also the IT expertise and capacity necessary for the system transfer. Periodically, this will require daily contacts between JRC and the potential future host.	28/06/2019	Scientific information systems and databases
4844 - NATCAPES JRC.D.3	3803 - ASPEN Alien Species Monitoring to Protect European Nature	Alien Species (AS) are organisms unintentionally or deliberately introduced through human activities into regions far beyond their natural range. Some of these, the Invasive Alien Species (IAS) are the main cause of biodiversity loss worldwide, a condition that severely affects Europe, where the damages cost an estimated 12 billion euro every year. The overall objective of the WPK is to improve the scientific network to acquire, assess, generate and disseminate the scientific knowledge required for an early warning of the introduction of alien species presenting significant risk to Europe's natural capital, scientific analysis of AS distributions, and for their management. A centralised and updated research network, managing and generating information on AS (e.g. assessment of species introduction pathways, impact, distribution), based on multiple tools (e.g. internet scanning, citizen science, dedicated expert networking) can assist in the implementation of European policies on biodiversity in light of changes caused by human activities, considering also the current trend in climate change, which exposes citizens to emerging risks (e.g., economic loss due to damaged production, loss of habitats of high value, worsened living conditions; disease vectors such as mosquitoes and ticks; exposure to chemicals used to control the spread of alien species). ASPEN aims to contribute to the prevention and management of IAS, supporting also the implementation of the EU	JRC.D.2 Ana CARDOSO	1.3.1.b	ENV	JRC	Spyridon Flevaris, DG ENV-C2	AGRI DEVCO REGIO SANTE TRADE	EEA - European Environment Agency	02/01/2017 31/12/2019	INS-RS	201801	Scanning future bioinvasions in Europe	Revision of the current status of Invasive Alien Species (IAS) predicted as likely to be introduced in Europe. Organisation of workshop on scanning of future bioinvasions in Europe, with the participation of a consortium of taxonomic experts (EASIN Editorial Board members) covering all species groups and environments. Development of recommendations for species to be risk assessed in the context of the EU Regulation on IAS.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201901	Geographical distribution of invasive alien species added to list of species of Union concern	Screening and analysis of data concerning the present distribution and biological traits of species added to the list of Invasive Alien species (IAS) of Union Concern. Collaboration with the competent authorities of the EU Member States. The document will serve the purpose of surveillance, monitoring and early detection of new occurrences in the context of the implementation of the EU Regulation 1143/2014 on IAS.	30/11/2019	Science-for-policy reports
												4160201806	Pilot ecosystem accounts (data platform)	One of the tasks of JRC under KIP-INCA is to operationalise the experimental ecosystem accounts so that they can be used by external users. These prototype accounts will be made available first by JRC before final accounts can be transferred to Eurostat. This deliverable is linked to an on-line data infrastructure to publish experimental ecosystem accounts.	30/06/2018	Scientific information systems and databases

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4844 - NATCAPES JRC.D.3	4160 - INCA INCA: Integrated system for Natural Capital Accounting	Services).	JRC.D.3 JOACHIM MAES	1.3.1.b	ENV	JRC	Stefan Leiner (ENV.B.2)	ECFIN ESTAT MARE RTD	EEA - European Environment Agency	01/01/2016 31/12/2020	INS-RS	4160201811	Experimental accounts No 2	This deliverable is the second of a series of reports which will describe an EU wide system of natural capital accounts on ecosystem services. The report contains a consolidated set of physical accounts and will include monetary accounts for a selected set of services. This report is a contribution to KIP-INCA. This deliverable is in collaboration with JRC.D.2 (use of the model GREEN for updating the water purification accounts). Special attention will go on how the pollination accounts can be used to support the new policy initiative on pollinators and pollination.	30/11/2018	JRC technical reports
		4160201902										Specific accounts and recommendations	Contributions to the scientific literature on challenges of developing natural capital and ecosystem services accounts, lessons learned and scientific publications of specific accounts (e.g., pollination accounts)	28/02/2019	Article contribution to a monograph or other periodicals	
		4160201911										Pilot ecosystem accounts	This deliverable is the third in a series of technical reports which updates the previous experimental ecosystem accounts and published pilot type physical and monetary flow accounts of selected ecosystem services	30/11/2019	JRC technical reports	
		4160202010										Updated pilot accounts	Updated pilot accounts and preparation to role out a full accounting system with published account (for Eurostat)	30/09/2020	Scientific information systems and databases	
4844 - NATCAPES JRC.D.3	4968 - EASIN 4 Technical support to the implementation of the European Regulation on Invasive Alien Species	The overall aim of the WPK is to further develop EASIN research network and assist DG ENV in the implementation of the requirements of the Regulation 1143/2014 on IAS. The WPK supports the objectives of target 5 of the EU Biodiversity Strategy: "By 2020, invasive alien species and their pathways are identified and prioritized, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new invasive alien species", and thus to the protection of biodiversity, ecosystem services and human activities from the impact of Invasive Alien Species. The project will encompass the following main tasks: 1) update and management of the EASIN Catalogue and geodatabase for species added to the lists of IAS of Union concern, Member State, regional and outermost regions concern (as defined under the IAS Regulation) as well as for species under consideration for inclusion on such lists; 2) establishment of efficient mechanisms of data extraction from collaborating EASIN Data Partners; 3) initial step towards re-engineering of the EASIN "Search and Mapping" tools; 4) development of tools allowing exporting of information from the EASIN Catalogue; 5) inclusion in NOTSYS of other functions related to the IAS Regulation implementation; 6) development of full system documentation.	JRC.D.2 Ana CARDOSO	1.3.1.b	ENV	ENV	Spyridon Flevaris	AGRI MARE REGIO SANTE TRADE	ENV EU - Environmental authorities of the Member States and Candidate Countries	01/01/2017 31/03/2018	CON-AA	201801	Final Report	Report with description of work achievement on all tasks: 1) all updates of the EASIN catalogue and geodatabase; 2) all new data partnerships; 3) progress achieved with the re-engineering of the EASIN "Search and Mapping" tools; 4) EASIN RESTful web services for extraction of information in the EASIN catalogue and; 5) NOTSYS upgrades.	30/03/2018	Scientific information systems and databases
		201802										EASIN system documentation	Report on full documentation of EASIN/ NOTSYS/ EB system describing the capabilities, limitations, design, operation, and maintenance (software and hardware).	31/03/2018	JRC technical reports	
4844 - NATCAPES JRC.D.3	5099 - MAVES Mapping, Assessment and Valuation of Ecosystems and their Services	The work package MAVES contributes to the knowledge base for the EU Biodiversity Strategy to 2020 and to the implementation of the Action Plan for nature, people and the economy. MAVES is organized along three main strands: (1) technical support to the working group MAES which oversees the implementation of Action 5 of the EU Biodiversity Strategy; (2) technical support to Action 6 of the EU Biodiversity Strategy and Action 12 of the Nature Action Plan; and (3) contribution to the final review of the Strategy. (1) Action 5 under Target 2 asks Member States, with the assistance of the Commission, to map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020. MAVES will continue the JRC support to Action 5 by assessing the relation between ecosystem condition and ecosystem services with special relevance for urban ecosystems and species and habitats reported under Article 17 of the Habitats Directive. Furthermore MAVES will provide input to Action 1 of the Nature Action Plan on integrating ecosystem services into decision making. (2) MAVES gives dedicated policy support to the further implementation of EU Biodiversity Strategy to 2020 with a particular emphasis on target 2, which aims for the restoration of 15% of degraded	JRC.D.3 JOACHIM MAES	1.3.1.b	ENV	JRC	Stefan LEINER	MARE	EEA - European Environment Agency	01/01/2017 31/12/2019	INS-RS	2	Scientific publications	Scientific publications on the supply and demand of ecosystem services in Europe, regional ecosystem assessments, trade offs and synergies with conservation of biodiversity, and the role of green infrastructure in supplying ecosystem services.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
		5099201904										Updated baseline 2010	This deliverable updates the biodiversity baseline 2010 with information on ecosystem services. It will be based on JRC model outcomes (ESTIMAP) and data (earth observation and remote sensing). The baseline will be the reference against which the 2020 biodiversity targets will be evaluated. It will complement the biodiversity baseline. It is based on the report JRC94889 (Mapping and Assessment of Ecosystems and their Services: Trends in ecosystems and ecosystem services).	30/04/2019	JRC technical reports	
		5099201912										Trends in ecosystem services consolidated version	This deliverable assists in the final review of the EU Biodiversity Strategy by assessing the trends in biodiversity and ecosystem services in Europe. It will build on the report JRC94889 (Mapping and Assessment of Ecosystems and their Services: Trends in ecosystems and ecosystem services).	31/12/2019	JRC technical reports	
4844 - NATCAPES JRC.D.3	5101 - EnRoute Enhancing Resilience Of Urban Ecosystems through	EnRoute is an Administrative Agreement between DG Environment and the JRC, with a view to implement a European Parliament Pilot Project on Urban Green Infrastructure.	JRC.D.3 JOACHIM MAES	1.3.1.b	ENV	ENV	Stefan LEINER	RTD	EP - European Parliament	01/12/2016 31/12/2018	CON-AA	5101201812	Urban GI ecosystem assessment	This deliverable reports an EU wide ecosystem assessment at city scale. It will test the MAES urban ecosystems indicator framework which is developed during the MAES urban pilot. The deliverable may be part of the MAES report series.	31/12/2018	JRC contributions to policy documents
702 - NC-Soil JRC.D.3	6082 - LUCAS-Soil LUCAS Soil	Originally based on Decision 1445/2000/EC by the European Parliament and of the Council of 22/5/2000, and then updated by Decision 2066/2003/EC of 10/11/2003, the statistical office of the European Union (Eurostat) undertakes a regular survey to monitor the situation of land use, land cover and changes over time across the European Union (EU). This survey is known as Land Use and Coverage Area frame Survey (LUCAS). Under the current EU financial framework the legal basis for the financing of the LUCAS survey is in Article 6(a) of Regulation (EU) No 1306/2013 on the financing, management and monitoring of the Common Agricultural Policy (CAP). In 2009, the scope of the survey was extended by including a topsoil component (i.e. the uppermost 20 cm of soil). The aim of	JRC.D.3 OIHANE FERNANDEZ UGALDE	1.3.1.b	ESTAT	ESTAT	n/a	AGRI CLIMA ENV SANTE		01/01/2018 30/12/2020	CON-AA	201801	2018 Survey coordination	Contribution to the planning and coordination of the 2018 survey, including training and contact with field teams	30/11/2018	JRC contributions to policy documents
		201802										LUCAS Analysis	Coordination of external laboratory for analysis of samples collected during 2018 and open procurement process	31/12/2019	JRC contributions to policy documents	
		201803										LUCAS Analysis	Reporting of 2018 survey results and preparation of Member State assessment Change analysis between 2018 and 2015/2009 data Input to LUCAS Working Group, liaison with Member States and other Commission Services	30/12/2020	JRC contributions to policy documents	
4844 - NATCAPES JRC.D.3	6263 - EASIN 5 Strengthening the policy support capacity of the European Alien Species Information Network (EASIN) and its notification system (NOTSYS)	Invasive Alien Species (IAS) represent a growing threat to Europe, causing increasing environment, economic and social problems. Recognising the need for robust action to control biological invasions, the European Parliament and the Council have adopted the Regulation 1143/2014 on the prevention and management of the introduction and spread of IAS, in force since January 2015. The effective implementation of the IAS Regulation requires accurate, detailed, and timely information on IAS occurrences and distribution for the efficient prevention, early detection, rapid response, and for evaluating the effectiveness of management measures applied. EASIN constitutes the central platform of the information support system foreseen under Article 25 of the IAS Regulation and is necessary for underpinning the overall implementation of the Regulation. This WPK concerns the maintenance, update and further development of the technical aspects of EASIN, facilitating the access to science-based information on alien species in Europe, serving the Commission and the MS in management decisions as well as the scientific community (e.g. through the catalogue, geodatabase, and the Editorial Board activities), which will be supplementary and complementary to the scientific work implemented by the JRC institutional WPK ASPEN. EASIN will continue to complement and build upon the research and the experiences carried out in Europe (such as those funded under the Horizon 2020, COST and LIFE projects) and will constitute a major EU contribution to the Global Invasive Alien Species Partnership (GIASIP), under development in the framework of the Convention on Biological Diversity (CBD). Moreover, EASIN will continue to feed into the INSPIRE geoportal maintained by JRC. Support will also be provided to the e-reporting foreseen under the IAS Regulation, in collaboration with EEA. The following main tasks will be carried out: 1) updating and management of the EASIN Catalogue and geodatabase, including enlargement of the network of data partners; 2)	JRC.D.2 Ana CARDOSO	1.3.1.b	ENV	ENV	n/a	EEA - European Environment Agency		01/01/2018 31/12/2020	CON-AA	1	Report year 1	Report with description of work achievement during year 1 on tasks: 1) updates of the EASIN Catalogue and geodatabase; 2) new data partnerships; 3) Editorial Board activity; 4) NOTSYS upgrades; 5) EASIN website updates and 6) account of the status of the web service enabling data harvesting from NOTSYS.	31/03/2019	Scientific information systems and databases
		2										Trends in the distribution of the IAS of Union concern reported by Member States vs. baseline reports	JRC has published a policy report on the baseline distribution of IAS of Union concern (the 37 species on the first Union list). Similar baseline reports for the species to be added on the Union list during the course of this AA. After reception of the Article 24 reports from the Member States, JRC will analyse the reported distributions vs. the baseline reports. Report on trends in the distribution of the IAS of Union concern reported by Member States vs. baseline reports.	31/12/2019	Science-for-policy reports	
		3										Report year 2	Report with description of work achievement during year 2 on tasks: 1) additions to the EASIN Catalogue and geodatabase; 2) new data partnerships; 3) Editorial Board activity; 4) NOTSYS updates; 5) EASIN website updates, and 7) description of the citizen science validation procedure.	31/03/2020	Scientific information systems and databases	
		4										EASIN documentation	Updated system documentation as to keep the description of EASIN and its early warning and rapid response notification system (NOTSYS) up to date.	31/12/2020	Scientific information systems and databases	
		5										Report year 3	Report with description of work achievement during year 3 on tasks: 1) additional updates of the EASIN Catalogue and geodatabase; 2) additional data partnerships; 3) Editorial Board activity; 4) NOTSYS updates; 5) EASIN website updates and 6) documentation of the back end application.	17/12/2020	Scientific information systems and databases	
702 - NC-Soil JRC.D.3	7045 - ESP European Soil Partnership	The Global Soil Partnership (GSP) was established in 2012 under the auspices of the Food and Agriculture Organization of the United Nations as a mechanism to develop a strong interactive network, enhanced collaboration and synergy of efforts between all stakeholders to improve the governance and promote sustainable management of soils in order to guarantee healthy and productive soils for a food secure world, as well as sustain other essential ecosystem services on which our livelihoods and societies depend including water regulation and supply of clean water, climate regulation, biodiversity conservation and cultural services. The GSP is formally supported by the the European Commission (ARES). The GSP foresees the establishment of Regional Partnerships where the process of implementing the five thematic pillars of the GSP is undertaken. The pillars address 1) sustainable management of soil resources, 2) encourage investment, technical cooperation, policy, education awareness and extension in soils, 3) promote targeted soil research and development, 4) enhance the quantity and quality of soil data and information and 5) harmonization of methods. The European Soil Partnership (ESP) was launched with the support of the JRC in 2014 to initiate a consultative process with European, national and regional soil stakeholders (soil survey institutions, soil management institutions, scientific soil societies, etc). The ESP should provide guidance on regional goals/priorities and the required implementation mechanisms and should regularly review progress in reaching common objectives and targets. In 2016, the JRC was nominated as the Secretariat of the ESP and currently Chairs the Intergovernmental Technical Panel on Soils (ITPS) and Chairs the Pillar 2 Working Group. The scope of this Work Package is to support the implementation of the ESP through targeted activities (meetings, studies, working groups), joint coordination of the Plenary	JRC.D.3 Marc VAN LIEDEKERKE	1.3.1.b	ENV	ENV	n/a	AGRI CLIMA DEVCO ESTAT	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) EEA - European Environment Agency	01/02/2018 31/12/2020	CON-AA	201801	European Soil Partnership Secretariat	The Secretariat supports the operation and implementation of European Soil Partnership. It facilitates the execution of the ESP implementation plan and communication among ESP partners. It supports the ESP Steering Committee on activities related to the ESP implementation and it develops and maintains the ESP web pages under ESDAC as a way of communication. Annual activity report will be produced.	31/12/2018	JRC technical reports
		201802										Sustainable Soil Management	In the context of ESP Pillar-1, and coordinating with the Pillar-1 leader, select and organize various activities that support the sustainable soil management in Europe (Action-1 and Action-2 of the ESP Implementation Plan).	31/12/2018	JRC technical reports	
		201803										Support to Pillar 2 Implementation	Pillar 2 of the European Soil Partnership is wide ranging in scope and there is a growing realization that its core issues underpin many of the actions of the other pillars of the Global Soil Partnership initiative. In particular, the need to address the lack of societal awareness of the importance of soil, combined with a lack of education, is partly responsible for unsustainable land management, an overall lack of investment in soil and a political reluctance to meaningfully adopt and ensure soil protection and enhancement measures. This deliverable will focus on the development of a policy brief and accompanying compendium on best practices for soil awareness, education and outreach.	31/12/2018	Science-for-policy reports	
		201901										Summer School	In the context of ESP Pillar-1 and Pillar 2, the WP will plan and organise a Soil Summer School (Action-5 of the ESP Implementation Plan) addressing the key objectives of the ESP scope. The final scope and venue will be defined in consultation with ESP Steering Committee and DG ENV.D1. Participants will be sought from Member States institutions.	31/12/2019	Training	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		Sessions and the operation of the Secretariat.										201902	European soil data infrastructure	In the context of the ESP Pillar-4, and in cooperation with both the Pillar-4 working group members and the European members of the GSP network of International Network of Soil Information Institutions (INSII) - which are mandated national soil information institution, the WP will undertake several activities in support of a European Soil Data Infrastructure. These include organising a joint technical meeting of European INSII members and other soil information institutions to discuss ESP related Pillar 4 and Pillar-5 tasks (Action-1 of the ESP Implementation Plan) and to define concrete data products that will be delivered in this context, the design and implementation of an infrastructure to host, to view and to download data products that will be provided by INSII members, and a road map towards a Soil Metadata Database for Europe	31/12/2019	Science-for-policy reports
4844 - NATCAPES JRC.D.3	7306 - IAS-EU IAS Europe app: engaging citizens in alien species surveillance	Tackling Invasive Alien Species (IAS) requires accurate, detailed, and timely information on IAS occurrences and distribution for early detection and rapid response, and for evaluating the effectiveness of management measures. Citizen Science (CS) is seen as essential to ensure the spatial and temporal resolution of data capture, allowing for the success of prevention and management programs. The JRC (JRC.B.6 in collaboration with JRC.D.2) has developed a smartphone application called "Invasive Alien Species in Europe", which allows users to report the presence of species listed as IAS of Union concern (EU Regulation no. 1143/2014). The overarching goal of the proposal is to promote the uptake of the IAS Europe app as a tool in the IAS surveillance activities in Europe for national purposes, guaranteeing at the same time the link to the EC official information system on IAS (EASIN) and the reuse of the data at European level. The specific objectives of the proposal are: (i) to develop a community of users of IAS Europe app, with particular attention to the engagement of national IAS competent authorities; (ii) strengthen the link between the	JRC.D.2 Ana CARDOSO	1.3.1.b	ENV	JRC	n/a	AGRI REGIO SANTE		01/05/2018 31/10/2019	INS-PC	5	Final report	An account of the work accomplished during the project, including an evaluation of the degree to which the objectives were attained and following up work.	31/08/2018	JRC technical reports
1.3.2. A circular, green and competitive low-carbon economy																
1.3.2.a sustainable consumption and production and the circular economy - elaborate criteria and measures for implementing sustainable product policies (EU Ecolabel Regulation, Green Public Procurement Communication, Ecodesign requirements for Energy-related Products Directive, Energy Label Regulation) and facilitating the exchange of information on best practices. Determine best available techniques and develop indicators for waste management,																
228 - ETV II JRC.C.7	235 - ETV II ETV Pilot Programme	Provide DG Environment with scientific and technical assistance to support the implementation of the EU Environmental Technology Verification pilot programme (ETV), which links with the EU eco-innovation action plan adopted in December 2011, through, among others, setting-up and running 3 technical groups on i) water treatment and monitoring, ii) energy technologies and iii) materials, waste and resources; and supporting DG ENV in the coordination of ETV.	JRC.C.7 Jean-Pierre SCHOSGER	1.3.2.a	ENV	ENV	HENRY Pierre (ENV)			01/09/2012 31/12/2018	CON-AA	10 201802 9	Other JRC contributions to ETV implementation Contribution to feasibility study Written contributions to standardisation activity	This deliverable concerns the following outputs that are foreseen in the AA: - Update of the Work Programme for the TWGs - Minutes of TWG meetings - Presentations to the Steering Group meetings - Report in participation in information events and forums - Mission reports of the IWG/ISO meetings Contribution to feasibility study This deliverable will outline the JRC contributions to the ETV-related ISO work	30/06/2018 31/12/2018 30/06/2018	JRC technical reports JRC contributions to policy documents JRC technical reports
160 - Product Policies JRC.B.5	267 - SUSTIM Development of implementation measures for SCP instruments	The AA "Development of implementation measures for SCP instruments SUSTIM (AA No. 07.0307/2012/642653/C1)" supports the Circular Economy Action Plan through providing techno-economic and scientific analysis for the development and implementation of environmental product policies. This includes for each product group the analysis of the underlying technologies as well as their diffusion into the market, the environmental assessment and the identification of respective improvement potentials including their cost effectiveness, and the formulation of criteria, benchmarks and values in order to materialise these improvements. The outcomes of this multi-disciplinary analyses are discussed with all relevant stakeholders. On this basis, JRC B5 prepares a proposal for the legal text for each respective product policy instrument.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	Hugo SCHALLY	ENER GROW		18/12/2012 17/12/2019	CON-AA	1	Ecodesign Preparatory Study (Product Group to be defined)	Preparatory Study according to the task and processes set out in article 15 and Annex VII of the ErP Directive and the most updated version of the MEErP methodology for a product group to be defined	17/12/2019	Science-for-policy reports
161 - EIPPCB JRC.B.5	557 - EIPPCB European Integrated Pollution Prevention and Control Bureau (EIPPCB)	The European IPPC Bureau (EIPPCB) discharges the obligation put on the Commission in Article 13(1) of the Industrial Emissions Directive (IED, 2010/75/EU) to "organise an exchange of information between Member States, the industries concerned, non-governmental organisations promoting environmental protection and the Commission" in order to draw up, review and, where necessary, update BAT reference documents, the so-called BREFs. A series of 32 BREFs covering the main EU industrial activities has been drawn up and the IED sets the demanding objective to review each of these BREFs every 8 years. Each of the 32 BREF documents are drawn up/reviewed through a complex exchange of information process steered by the EIPPCB and involving a Technical Working Group (TWG) made of between 100 to 300 experts representing all stakeholders. The formal process to draw up/review a BREF typically spans over three to four years. The information exchange process has been enshrined into EU law (Commission Implementing Decision 2012/119/EU). The information in each BREF is organised using a standard format: Chapters 1 and 2 provide general information on the (agro-)industrial sector in question and on the common processes and techniques used within the whole sector. Chapters 3 provides information and data on the environmental performance of installations in terms of current emissions, consumption of raw materials, water and energy, as well as on the generation of waste. Chapter 4 includes information on the techniques that can be used in the sector to prevent and/or reduce emissions, the so-called BAT-candidate techniques. Chapter 5 is the key part of a BREF; it presents the BAT conclusions for the sector, as	JRC.B.5 Serge ROUDIER	1.3.2.a	ENV	JRC	Ian Hodgson / Chris Allen / Aneta Wilems (ENV.C.4)	AGRI CLIMA ENER GROW SANTE	ADB - African Development Bank MIN Env EU MS - Environment Ministries EU Member States MS EU - Member states EU WB - World Bank	01/01/2013 31/12/2019	INS-RS	14 15 16 17 18 19 20	Draft 1 revised Ferrous Metals Processing BREF Final Draft revised Food, Drink & Milk (FDM) BREF Published revised Waste Treatment BREF Draft 1 Waste Gas in the Chemic. sector (WGC) BREF Final Draft revised Waste Incineration (WI) BREF Published revised Food, Drink and Milk BREF Final Draft revised STS BREF	Produce the First Draft (D1) of the revised Ferrous Metals Processing (FMP) BREF for comments of the Technical Working Group (TWG) Produce the Final Draft (FD) of the revised Food, Drink and Milk (FDM) BREF in order to receive a formal opinion of the IED Article 13 forum Produce and publish the revised Waste Treatment (WT) BREF taking into account the IED Article 13 forum opinion and the IED Article 75 Committee vote Produce the First Draft (D1) of the Common Waste Gas Treatment in the Chemical Sector (WGC) BREF for comments of the Technical Working Group (TWG) Produce the Final Draft (FD) of the revised Waste incineration (FDM) BREF in order to receive a formal opinion of the IED Article 13 forum Produce and publish the revised Food, Drink and Milk (FDM) BREF taking into account the IED Article 13 forum opinion and the IED Article 75 Committee vote Produce the Final Draft (FD) of the revised Surface Treatment using Organic Solvents (STS) BREF in order to receive a formal opinion of the IED Article 13 forum	31/12/2018 30/06/2018 31/12/2018 31/03/2019 30/04/2019 30/06/2019 31/12/2019	JRC contributions to policy documents JRC contributions to policy documents Science-for-policy reports JRC contributions to policy documents JRC contributions to policy documents Science-for-policy reports JRC contributions to policy documents
4862 - LCM-IABR&SM JRC.D.1	1738 - EFME2 Technical support for Environmental Footprinting, Material Efficiency and the European Platform on LCA	This AA with the title "Technical support for Environmental Footprinting, Material Efficiency and the European Platform on LCA" constitutes a further development of the AA on Environmental Footprint and Material Efficiency (33046). Overall objective of this AA (ADMINISTRATIVE ARRANGEMENT JRC N°33446 -2013-11 07.0307/ENV/2013/SI2.668694/A1, incl. Amendment no. 3) is in line with Recommendation 2013/179/EU: to further improve the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF) methods by updating Life Cycle Impact Assessment (LCIA) methods related to resource use, land use, water scarcity and respiratory inorganics; to finalise the development of PEF Category Rules (PEFCRs) and OEF Sector Rules (OEF SRs); to develop a method to further aggregate the EF results for up to 15 impact categories into a more condensed information that is better usable for decision support and communication, the so-called "weighting"; to further develop the European Platform on Life Cycle Assessment (EPLCA) and the Life Cycle Data Network (LCDN) in relation to EF.	JRC.D.1 Rana PANT	1.3.2.a	ENV	ENV	Maria-Hugo SCHALLY, ENV.A.1; Desk Officers: Michele Galatola, Ferenc Pekar			12/12/2013 10/06/2018	CON-AA	4 5	D4 Continued support to JRC led pilots D5 Evaluation of pilots and revision of EF guides	This task covers the continuation of the 3 PEFCR and OEF SR pilots for which JRC-IES has a direct involvement in for of chairing or co-chairing the Technical Secretariat. Evaluation of the PEFCR or OEF SR pilots for which JRC-IES has the function as the chair of the Technical Secretariat and revision of the PEF and OEF methods based on the learnings from the other pilots for which the evaluation – as far as finished - was conducted by the technical helpdesk established by DG ENV.	10/04/2018 10/05/2018	JRC technical reports JRC technical reports
160 - Product Policies JRC.B.5	2052 - PPS 2015 Scientific support to the EU Ecolabel and EMAS (PPS 2015)	The AA "Scientific support to the EU Ecolabel and EMAS (PPS 2015)" (AA No. 070201/2014/692342/SER/ENV.A.1) supports the Circular Economy Action Plan through providing environmental, techno-economic and scientific analysis for the development and implementation of environmental product policies. Based upon work packages #169 and #267 JRC B5 will develop new or revise existing Ecolabel criteria for a number of product groups, supporting DG ENV in preparing the draft legal proposals for interservice consultation and voting in regulatory committee, and give scientific support to DG ENV during interservice consultation and regulatory committee.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	Hugo SCHALLY	ENER GROW		01/01/2015 30/06/2018	CON-AA	7 9	GPP criteria Copying & Graphic Paper Ecolabel user manuals for 5 product groups	Product sheet for Green Public Procurement criteria for the product group Copying and Graphic Paper, together with the accompanying scientific background report. Ecolabel user manuals for applicants and member states for up to 5 product groups	31/05/2018 31/05/2018	Science-for-policy reports JRC technical reports
160 - Product Policies JRC.B.5	2921 - GPP 2015 Scientific support to Green Public Procurement (GPP 2015)	The AA "Scientific support to Green Public Procurement (GPP 2015)" (AA No. 070201/2014/693195/SER/ENV.F.1) supports the Circular Economy Action Plan through providing environmental, techno-economic and scientific analysis for the development and implementation of environmental product policies. Based upon previous work (#169, #267), IPTS will develop new or revise existing Green Public Procurement criteria for a number of product groups, supporting DG ENV in preparing the draft legal proposals for interservice consultation. The work package is closely linked to Wkp PPS 2015 (#2052) which is executed in parallel.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	ROBERT KAUKEWITSCH	ENER GROW		01/06/2015 31/05/2018	CON-AA	7	Draft criteria Imaging Equipment	Draft criteria to be discussed with stakeholders for the product group Imaging Equipment (incl. updates of the technical report) to be further developed for the Interservice Consultation.	30/05/2018	JRC technical reports
4862 - LCM-IABR&SM JRC.D.1	3060 - EFME3 Technical support for Environmental Footprinting and the Life Cycle Data Network	This AA with the title "Technical support for Environmental Footprinting and the Life Cycle Data Network" constitutes a further development based on the AA on Environmental Footprint and Material Efficiency (33446). Overall objective of this AA (ADMINISTRATIVE ARRANGEMENT JRC N°33909 DG ENV No 070201/2015/704456/SER/ENV.A.1, including Amendment no. 1) is in line with Recommendation 2013/179/EU: to further improve the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF) methods by updating Life Cycle Impact Assessment (LCIA) methods for toxicity related categories, e.g. for freshwater eco-toxicity and human toxicity both cancer and non-cancer; to further develop the European Platform on Life Cycle Assessment (EPLCA) with focus on providing information and training material related to the Life Cycle Data Network (LCDN) to facilitate larger uptake by external stakeholders and attracting more datasets and nodes to become available online.	JRC.D.1 Rana PANT	1.3.2.a	ENV	ENV	Maria-Hugo SCHALLY (Hugo-Maria.Schally@ec.europa.eu), ENV.A.1; Michele GALATOLA (michele.galatola@ec.europa.eu), ENV.A.1			09/04/2015 08/11/2019	CON-AA	4 D102020	D2 Final report on toxicity, covering freshwater ecotoxicity, human toxicity non-cancer and cancer D5 Support for EF transition process	The JRC-IES will review Life Cycle Impact Assessment (LCIA) methods for freshwater ecotoxicity, human toxicity non-cancer and cancer. The review will lead to the identification of necessary updates of the recommended LCIA methods for the EF and the provision of characterization and normalisation factors. Continued support for the Environmental Footprint and standardisation related activities with a focus on CEN TC350 and aligning EN15804 more with relevant EF requirements. Includes also the participation in and preparation of EF Steering Committee and Technical Advisory Board related meetings in the transition phase (after the EF pilots have ended but before any - potential - policy applying the EF is introduced).	30/06/2018 30/04/2019	JRC technical reports JRC contributions to standards

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		In the amendment No1, LCIA methods for the Environmental Footprint will be further developed and improved, with a focus on the environmental assessment for biotic and abiotic resources. The amended AA also comprises the continued support for the Environmental Footprint in the transition phase and the continued support of Environmental Footprint related data activities with a focus on the Life Cycle Data Network (LCDN).							Confederation of Iron and Steel Industries (EUROFER) FEFCO - EUROPEAN FEDERATION OF CORRUGATED BOARD MANUFACTURERS			D92019	D4 Revised EF recommendation for biotic and abiotic resources	The JRC-IES will further develop methods for assessing biotic and abiotic resources in the Environmental Footprint context. The concept of dissipative use for biotic and abiotic resources will be explored. The task will lead to the identification of necessary updates of recommended methods and indicators but also take into account limitations stemming from the currently available Life Cycle Inventory (LCI) data.	31/10/2019	JRC technical reports
159 - Waste Management JRC.B.5	3630 - REPAIR Resource management in peri-urban areas: going beyond urban	A shift towards a more circular economy is crucial in order to achieve more sustainable and inclusive growth. The core objective of REPAIR is to provide local and regional authorities with an innovative transdisciplinary open source Geodesign Decision Support Environment (GDSE) developed and implemented in Living Labs in six metropolitan areas. The GDSE allows creating integrated, place-based eco-innovative spatial development strategies (defined using appropriate life cycle based methods) aiming at a quantitative reduction of waste flows in the strategic interface of peri-urban areas. These strategies will promote the use of waste as a resource, thus support the on-going initiatives of the European Commission towards establishing a strong Circular Economy. Policy dissemination activities are planned.	JRC.B.5 Peter EDER	1.3.2.a	ENV	RTD	Julius LANGENDORFF	CLIMA ENV GROW	- Delft University of Technology	01/09/2016 31/08/2020	CON-IA	2	Impact and evaluation models	Developing and implementing impact and evaluation models	31/12/2018	JRC technical reports
												3	Eco-innovative solutions and change	Developing eco-innovative solutions and change models	31/12/2019	JRC technical reports
160 - Product Policies JRC.B.5	3870 - EcoDesign4Circular Ecodesign4Circularity	As further development of the AA 070307/2012/ENV.C1/635340 and 07.0307/ENV/2013/SI2.668694/A1, the overall objective of this AA "Ecodesign4Circularity" (AA No. 070201/2015/SI2.719458/ENV.A.1) is to further develop and improve the REAPro method for the setting of potential requirements on material / resource efficiency within EU product policies (in Ecodesign but also in EU Ecolabel and Energy Labelling), and apply it to relevant product groups. The assessment method and associated product criteria will concentrate on waste prevention (e.g. lifetime, durability, re-usability), material recycling (e.g. recycled content, recyclability rates) and/or development of non-toxic material cycles (e.g. substitution, restriction, extraction). It also aims at contributing to related standardization activities when developing standardized product criteria on circularity that can be easily measured and hence verified. The AA also links to the Life Cycle Indicators activities through the development of basket of products for appliances.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	Ferenc PEKAR (ENV.A.1), Cesar Santos Gil (GROW.DDG1.C.1)	ENER GROW	- EUROPEAN COPPER INSTITUTE - European Consumers' Organisation CEN - European Committee for Standardization CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EAA - European Aluminium Association EUROFER - European Confederation of Iron and Steel Industries (EUROFER) ORGALIME - European Engineering Industries Association PlasticsEurope - Association of Plastics Manufacturers (PlasticsEurope) Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2016 31/12/2018	CON-AA	201801	Report on resource efficiency analyses & criteria	This report will summarise the analysis of resource efficiency of two product groups from various perspective (e.g. recyclability/recoverability, content of relevant materials and substances of concern, durability, reparability), using the REAPro. JRC B5 will also calculate benefits and impacts of identified options for potential material efficiency requirements for these product groups in new Ecodesign and Energy labelling measures/revisions. The product groups to be analysed will be agreed.	30/11/2018	JRC technical reports
												201802	Durability of products	The report will summarize the knowledge and know-how developed to enhance the future adoption of durability criteria in the context of the Ecodesign and Energy Labelling Directives. In particular, based on previous results, this task will propose further refinement of the testing method, potentially standardized, concerning the durability of washing machines, based on additional testing campaigns on exemplary products.	30/11/2018	JRC technical reports
												201803	Reparability of products	The report will develop further the knowledge and know-how needed to enhance the future adoption of reparability criteria in the context of the Ecodesign Directive. Based on previous work (e.g. on dishwashers and washing machines), the task will develop further assessment method to calculate benefits and impacts concerning reparability scenarios, including ways to identify relevant components in products. It will also develop and test metrics that could be used to assess reparability of products	15/06/2018	JRC technical reports
												201804	CEN/CENELEC activities on material efficiency	Since 2014, JRC has been representing DG ENV and DG GROW This task aims at ensuring continuous support of JRC B5 within the 'Resource efficiency' Task Force (TF4) of the CEN/CENELEC 'Eco-design Coordination Group', in strict cooperation with DG ENV and DG GROW. This task could also involve the preparation of some technical input to Technical Committees that will be formed when the standardization mandate on material efficiency is accepted.	15/12/2018	Oral presentation
												201805	Investigating alignment and potential synergies	The report will analyse how synergies could be exploited and if appropriate alignment achieved between Ecodesign and these other policies. It will also consider Product Environmental Footprint (PEF). The process and results of the Administrative Arrangement between JRC and DG ENV on indicators and assessment of EU consumption LCIND RE2 will also be considered in this task.	30/11/2018	Science-for-policy reports
												201806	Final technical report	This report will describe major achievements and potential follow up actions to be taken.	15/12/2018	JRC technical reports
												201807	Basket of product appliances	The report will present the results of the life cycle based Basket of Product (BoP) indicators, focused on the environmental impacts of representative appliances selected in agreement with DG ENV. The study is aiming at strengthening the link between several life cycle based product policies. Illustrative scenarios will be tested against the baseline scenario, focusing on the benefits of eco-innovations and shifts in consumer behavior.	30/06/2018	JRC technical reports
159 - Waste Management JRC.B.5	4840 - CEBEST Circular economy best practices and benchmarking	This work package supports policy making and circular economy policy implementation by - facilitating the exchange of information and benchmarking of best practices in waste management (including of mining waste) and other key sectors for the circular economy - exploring with industry experts and technology leaders how to improve the conditions for the adoption of the most resource efficient and environment friendly practices and technologies - supporting the use of EMAS sectoral reference documents (SRDs) by EMAS registered and other organisations and drawing lessons for the future development or potential revision of the SRDs - techno-economic characterisation of key technologies for a resource efficient circular economy - developing quality standards for secondary raw-materials and end-of-waste criteria	JRC.B.5 Peter EDER	1.3.2.a	ENV	JRC	Hugo SCHALLY	GROW	Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2017 31/12/2019	INS-RS	2	Policies to support industrial leadership in the circular economy	Proposals of innovative policy instruments for facilitating the transition of industrial activities to a more circular economy, based inter alia on benchmarking and the exchange of best practices.	31/12/2019	Science-for-policy reports
												3	Quality standards for secondary materials	Technical requirements and quality criteria for save and environmentally friendly secondary raw-materials	31/12/2019	Science-for-policy reports
703 - NC-Waters JRC.D.2	5960 - DK D-L CP Market Analysis: Detection kit for dioxin-like chemical pollutants	The aim of this project is to analyse the market for the in-house detection kit developed under the project Proof of Concept " Generation of a detection kits for chemical pollutants using competitive binding assay for the Aryl Hydrocarbon Receptor" completed in 2014. The patent filing has been registered in 2015. JRC developed a free-labeling assay for the Aryl Hydrocarbon binding activity to test the binding of chemical pollutants such as polycyclic aromatic hydrocarbons (PAHs) which toxicity is exert through the AhR receptor interfering with the endocrine system. The toxicity of dioxin TCDD (one of the most known potent non-genotoxic tumour-promoting substances) is almost exclusively mediated via this receptor.	JRC.D.2 Teresa LETTIERI	1.3.2.a	ENV	JRC	HELEN CLAYTON	SANTE		15/02/2017 30/06/2018	INS-PC	01	Report on the market analysis	This report will provide the analysis on the potential market for this kit covering the field of application i.e. environment , potential income of the size for demand and supply. Analysis of the competitors available on the market. The profile analysis of the competitors will help to evaluate a better strategy for the market allocation of the AhR detection system.	30/01/2018	JRC technical reports
4862 - LCM-IABR&SM JRC.D.1	6063 - Plastics LCA Plastics Life Cycle Assessment	The Plastic Strategy is part of the Circular Economy Package and will go further than recycling of plastics. It should address issues such as : feedstock alternative to fossil feedstock , more sustainable production ways (e.g. industrial symbiosis, resource efficiency,), more sustainable ways of producing plastic articles (e.g. new designs, longer life, easy to recycle, biodegradability...), more sustainable consumption and use of plastics and better collection and sorting of plastics to achieve the objective of 60% of recycled plastics in by 2030. In this AA the JRC will develop a method to assess plastics from a mainly environmental and life cycle perspective and conduct a range of LCAs on various plastics according to the developed methodology. For this the cooperation of 3 units in 3 different JRC directorates will be required and deployed, namely B5, C4 and D1.	JRC.D.1 Rana PANT	1.3.2.a	GROW	GROW	n/a	ENV		01/09/2017 31/08/2019	CON-AA	D22019	Methodology Report on Life Cycle Assessment for plastics from different feedstock and case studies	Methodology Report on Life Cycle Assessment for plastic from different feedstock and case studies covering updated results from a draft methodology report (taking into account stakeholder feedback), LCAs of 10 plastic articles (selected by DG GROW and JRC, taking into account stakeholder feedback), and guidance on how to conduct LCAs for other plastic articles applying this methodology.	30/06/2019	JRC technical reports
159 - Waste Management JRC.B.5	6085 - SafeManure Criteria for Safe Use of Processed Manure in Nitrate Vulnerable Zones	The Administrative Agreement will help define which harmonised criteria that could apply to allow nitrogen fertilisers, partially or entirely derived from manure, to be used in areas with water pollution by nitrogen nutrients following the same provisions applied to nitrogen containing mineral/chemical fertilisers, while ensuring to provide adequate agronomic benefits.	JRC.B.5 Peter EDER	1.3.2.a	ENV	ENV	n/a	AGRI GROW		01/02/2018 31/05/2020	CON-AA	1	Criteria for Safe Use of Processed Manure in Nitrate Vulnerable Zones	Document with proposals for criteria for safe use of processed manure in Nitrate Vulnerable Zones	31/05/2020	Science-for-policy reports
159 - Waste Management JRC.B.5	6088 - BEMPS Monitoring and updating the EMAS best environmental management practices & managing the stakeholder network	Monitoring and updating of the EMAS best environmental management practices & management of the stakeholder network. The JRC will develop and implement a new approach to exchanging information on best practices among relevant stakeholders and keeping reference information up-to-date. This approach will also address the current barriers to the implementation of best practices with a specific focus on SMEs and small public administrations. The work will focus on selected priority sectors. (DG ENV 070201/2017/760268/AA/ENV.B.1)	JRC.B.5 Peter EDER	1.3.2.a	ENV	ENV	n/a	GROW		01/11/2017 31/12/2019	CON-AA	1	New approach to information exchange for state-of-the-art best environmental management practice	Report on a new approach to exchange information and update best environmental management practice. It will set out how to harness and maintain the relevance of the EMAS sectoral reference documents and their established working process, for the diffusion and uptake of best practices in environmental management in a circular economy.	31/12/2019	Science-for-policy reports
160 - Product Policies JRC.B.5	6352 - PPS 2018 Product Policy Support 2018	PPS 2015 supports the Circular Economy Action Plan through providing environmental, techno-economic and scientific analysis for the development and implementation of environmental product policies. In continuation of work packages #169, #267 and #2052 JRC B5 will develop new or revise existing Ecolabel and GPP criteria for a number of product groups, supporting DG ENV in preparing the draft legal proposals for interservice consultation and voting in regulatory committee, and give scientific support to DG ENV during interservice consultation and regulatory committee.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	n/a	CLIMA ENER GROW		01/01/2018 31/12/2020	CON-AA	1	Ecolabel criteria Hard Coverings	For the product group Hard Coverings: Draft legal proposal for Ecolabel criteria for interservice consultation and regulatory committee voting, together with the accompanying scientific background report.	30/11/2020	Science-for-policy reports
160 - Product Policies JRC.B.5	6355 - Photovoltaic Panels Photovoltaic Panels, Inverters and Systems - Policy Implementation Support	'Photovoltaic Panels' supports DG GROW in developing product policy instruments for photovoltaic panels, inverters and systems for the first time. This work includes environmental, techno-economic and scientific analysis similar to work carried out in work packages #169 and #267 for different product groups. JRC B.5 will support DG GROW in preparing the draft legal proposals for interservice consultation and voting in regulatory committee, and give scientific support to DG GROW during interservice consultation and regulatory committee.	JRC.B.5 Oliver WOLF	1.3.2.a	GROW	GROW	n/a	ENER ENV		01/10/2017 31/07/2019	CON-AA	1	Ecodesign Preparatory Study for Photovoltaic Panels	The output of WKP 6355 will be the Ecodesign Preparatory Study for Photovoltaic Panels, which summarises all evidence necessary for the development of an implementing measure for photovoltaic panels under the Energy related Products (ErP) Directive 2009/125/EC and the Energy Labelling Directive 2010/30/EU.	31/07/2019	Science-for-policy reports
160 - Product Policies JRC.B.5	6356 - Efficient Build 2 Resource Efficiency Assessment in the Building Sector 2	Efficient Build 2 is the continuation of Wkp #2051 'Resource Efficiency Assessment in the Building Sector' and supports the Circular Economy Action Plan with a focus on the priority area 'Construction and Demolition'. The project is framed by the Communication (2014) 445 on Resource Efficiency Opportunities in the Building Sector and aims at monitoring and refining the set of indicators and benchmarks of resource efficient buildings that has been developed in #2051.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	n/a	ENER GROW		01/01/2018 31/12/2019	CON-AA	1	Findings and recommended improvements resulting from the testing phase of the common EU framework for buildings	This deliverable supports the Circular Economy Action Plan with a focus on the priority area 'Construction and Demolition'. The project is framed by the Communication (2014) 445 on Resource Efficiency Opportunities in the Building Sector. It delivers the findings of an evaluation of the EU common framework of sustainability indicators for buildings, which has been developed in Wkp 2051 'Resource Efficiency Assessment in the Building Sector'. These results may be used to modify and adapt the indicator framework.	31/12/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
160 - Product Policies JRC.B.5	6820 - EcodesignScoreCE Support in developing and implementing Ecodesign and Energy Label implementing measures and a scoring system for use in Ecodesign to support the transition towards a Circular Economy	The AA "Support in developing and implementing Ecodesign and Energy Label implementing measures and a scoring system for use in Ecodesign to support the transition towards a Circular Economy" (AA No. 070201/2017/768638/SER/ENV.B1) aims at analysing and developing a scoring system on repair and where relevant upgrading. This may cover aspects such as product reparability and, whenever possible, provision of repair/upgrade service by the manufacturer incl. availability of spare parts, availability and precision of repair manuals, access to upgrades, etc. Where relevant, aspects related to the product expected service time, robustness of components and/or provision of product guarantees by the manufacturer, and product characteristics in its End-of-Life phase should be taken into account. In addition implementing measures on Ecodesign and Energy Labelling for 1 product group will be developed, or, if agreed by both parties, for one horizontal measure covering several products.	JRC.B.5 Oliver WOLF	1.3.2.a	ENV	ENV	n/a	ENER GROW		01/01/2018 31/12/2020	CON-AA					
4862 - LCM-IABR&SM JRC.D.1	7003 - ConsumptionFootprint Application of the consumption footprint indicators in policy analysis	Linking micro level Life Cycle Assessment and life cycle based indicators with macro level EU policy goals related to EU consumption and the EU consumer footprint. The aim of this AA is to further develop and apply a life cycle framework for assessing the environmental impacts of EU consumption as a reference tool for policy support. This includes a methodology for analyzing environmental and resource efficiency targets as well as distance to planetary boundaries.	JRC.D.1 SERENELLA SALA	1.3.2.a	ENV	ENV	n/a			15/03/2018 14/03/2020	CON-AA	20181	inception report	Inception report reflecting the discussion held at the kick-off of the meeting detailing policy support to be deployed in the projects	15/05/2018	JRC technical reports
												20191	interim report	Calculation of consumer and consumption footprints in different areas of consumption. Assessing environmental impact of EU consumption for informing both micro and macro-level policies	14/03/2019	JRC technical reports
												20201	final report	Final calculation and time-related update of the consumer and consumption footprint. Definition of case studies to illustrate the use of the indicators in the context of e.g. monitoring of circular economy, resource efficiency policies, new product policy framework	14/03/2020	JRC technical reports
1.3.2.b environmental knowledge, information and indicators - develop environmental indicators and lifecycle-based methods for the roadmap to a resource-efficient Europe and for incorporating environmental considerations into other policies, e.g. via the better regulation toolbox. As a better way to generate, plan and share environmental knowledge, contribute to the environmental knowledge community, including through its knowledge innovation																
484 - INSPIRE JRC.B.6	1052 - INSPIRE-TC+E INSPIRE Technical Coordination and Evolution	This work package (WP) involves the overall technical coordination of the implementation of the INSPIRE Directive in the Member States aiming to develop the European Spatial Data Infrastructure (SDI). The WP reflects the new INSPIRE strategy that addresses various challenges that emerged in the INSPIRE REFIT, the new INSPIRE Maintenance and Implementation Work Programme (MIWP) 2016-2020, new Commission initiatives and priorities (e.g. Digital Single Market, Better Regulation, eGovernment Action Plan) and the emerging challenges and opportunities resulting from the Digital Transformation in the Public Sector. Specifically, the WP will provide institutional resources to complement the AAs with ESTAT and DG ENV supporting the execution of the MIWP 2016-2020, in order to: - evaluate the INSPIRE technical and legal framework to make INSPIRE easier to implement and more fit-for-use in broad end-user applications and to support new business opportunities and the development of innovative applications; - follow global Geo-ICT standardization initiatives such as ISO, W3C, Open Geospatial Consortium; - develop a strategy for the long-term sustainability of the INSPIRE infrastructure and its central components; - develop a structured approach for creating synergies with other policy areas and EC initiatives, e.g. on eGovernment, Copernicus and Data, Information and Knowledge Management; and - coordinate the development of reusable solutions supporting INSPIRE implementation and improving the sharing and use of geospatial data between public administrations, businesses and citizens (through activities under the ISA2 Action 2016.10 ELISE). The WP will also develop a vision for an evolution of INSPIRE beyond the 2020 implementation deadline to improve the efficiency and effectiveness of public tasks based on geospatial data from the public and private sector as well as citizens. This vision will be based on an analysis of the technological and policy evolution as well as an investigation on how INSPIRE is supporting and affected by Digital Transformation in the Public Sector. This work will be carried out in close cooperation with the Digital Transformation flagship project. Finally, the WP will promote INSPIRE in Europe and worldwide as a best practice in the field of spatial data & information interoperability. This includes, but not limited to, the UN initiative on Global Geospatial Information Management (UN-GGIM) and the Group on Earth Observations (GEO).	JRC.B.6 Michael LUTZ	1.3.2.b	ENV	JRC	Robert KONRAD	AGRI CNECT DIGIT ESTAT GROW	CC EU - Candidate Countries EEA - European Environment Agency MS EU - Member states EU	01/01/2015 31/12/2020	INS-RS	201702	INSPIRE infrastructure sustainability	Report on possible options and feasibility for the long-term management and operation of the INSPIRE infrastructure components currently being developed and operated by the JRC. The report will investigate e.g. the feasibility of migrating the INSPIRE Geoport into the pan-European (Open) Data Portal and propose options for the operation of the INSPIRE Registry Service.	31/10/2018	JRC technical reports
												201801	Updated Technical Guidelines & Legal Acts	Updated Technical Guidelines and/or draft amendments to legal acts based on implementation experiences in the Member States and priority actions in the Maintenance and Implementation Work Programme (MIWP) 2016-2020 agreed between the Commission and the Member States. In particular, the updated guidelines and legal acts will reflect the outcomes of MIWP actions 2016.1 on INSPIRE fitness for purpose and 2016.2 on INSPIRE monitoring and reporting 2019 (and their follow-up actions).	14/12/2018	JRC contributions to policy documents
												201802	Update of the INSPIRE knowledge base	The update will reflect user needs collected directly in the on-line INSPIRE knowledge base as well as further integration, based on the common content data model, of the individual components and tools.	30/11/2018	Scientific information systems and databases
												201803	Scientific articles on geospatial interoperability	Scientific articles in peer-reviewed journals and/or conferences documenting the JRC's work in INSPIRE and the ELISE ISA2 action on improving geospatial interoperability.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201804	The role of INSPIRE in the digital transformation of public administration	This report will evaluate how INSPIRE is supporting and affected by Digital Transformation in the Public Sector. The evaluation will be based on in depth analysis of the MS 3-year INSPIRE implementation reports accompanied by statistical analysis of the evolution of the data content of the EU Geoport and selected national geoportals. In order to detect different patterns due to national conditions and European drivers, the report will also evaluate existing monitoring indicator schemes on Europe's digital performance (e.g. DISE) and propose how to complement them with relevant INSPIRE aspects. This set of indicators will allow future progress monitoring of various aspects defined by the Digital Single Market and related policies. The evidence on the evolution of INSPIRE implementation provided by the report will be used as input for the INSPIRE 2025-30 vision and also will be carried out in close cooperation with the relevant activities of the Digital transformation project.	30/09/2018	JRC technical reports
												201901	Reusable interoperability solutions for sharing and use of geospatial data	Reusable solutions (guidelines, tools and services) developed under the ISA2 Action 2016.10 ELISE that support INSPIRE implementation and improve the sharing and use of geospatial data between public administrations, businesses and citizens. These include e.g. the INSPIRE validator and registry (and the underlying software), the INSPIRE data specification software toolbox and guidelines & tools for sharing geospatial data on the Web.	29/11/2019	Scientific information systems and databases
												202001	INSPIRE vision 2025-2030	This science for policy report will (a) analyse the challenges in terms of technology evolution and requirements from Digital Transformation in the public sector, (b) identify best practices in Member States and (c) make policy recommendations on the evolution of EU policies (including, but potentially going beyond, INSPIRE) to improve the efficiency and effectiveness of public tasks based on geospatial data from the public and private sector as well as citizens.	31/03/2020	Science-for-policy reports
484 - INSPIRE JRC.B.6	1740 - GEOPS INSPIRE Geoport Operations	The subject matter of this Administrative Arrangement is the daily operation of the INSPIRE Geoport. Objectives: 1.To host the INSPIRE Geoport in a fully operational environment. 2.To continuously adapt the Geoport and its infrastructure in order to optimize performance, and allow for growth scenarios. 3.To provide technical support to Member States and other service providers that want to link their services to the Geoport.	JRC.B.6 Michael LUTZ	1.3.2.b	ENV	ESTAT	Hugo De Groof ENV D.4	AGRI CNECT DIGIT ESTAT GROW	CC EU - Candidate Countries EEA - European Environment Agency MS EU - Member states EU	29/11/2013 28/11/2018	CON-AA	201801	Operational service of the INSPIRE EU Geoport	Operational service offering the EU INSPIRE Geoport, allowing Member States to publish their INSPIRE metadata and services in a central portal and allowing users to discover and access Member States' INSPIRE data through a single point of access	01/12/2018	Scientific information systems and databases
484 - INSPIRE JRC.B.6	2123 - INSPIRE SEIS EREP INSPIRE SEIS and e-Reporting	This Administrative Arrangement (07.0201/2014/681763/AA/ENV.D.4), together with two further AAs with DG ENV (Implementation and Evolution of INSPIRE, wpg 3062, and INSPIRE for Better Regulation, wpg 3785), supports DG Environment in addressing various challenges that emerged in the Fitness Check for environmental monitoring and reporting, the INSPIRE REFIT, the alignment with other new Commission initiatives and priorities (e.g. Digital Single Market, Better Regulation,...) and provides the resources needed to execute the INSPIRE Maintenance and Implementation Work Programme 2016-2020.	JRC.B.6 Michael LUTZ	1.3.2.b	ENV	ENV	Hugo DE GROOF, Joeri ROBBRECHT	AGRI ESTAT MARE NEAR REGIO	EEA - European Environment Agency MS EU - Member states EU Reg Aut Env - Candidate Countries Members States regulatory authorities on Environment	27/05/2014 25/05/2019	CON-AA	201801	Final Management Report	Final Management Report summarizing all activities and deliverables during the implementation of WPK/AA.	25/05/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
4862 - LCM-IABR&SM JRC.D.1	2307 - LCIND 2 Indicators and Assessment of the Environmental Impact of EU consumption	The aim of this AA with the title "Indicators and Assessment of the Environmental Impact of EU consumption" (ADMINISTRATIVE ARRANGEMENT 070201/2015/SI2.705230/SER/ENVA.1. incl. amendment No2) is to develop and apply a life cycle framework for assessing the environmental impacts of EU consumption as a reference tool for policy support. This includes a methodology for analysing environmental and resource efficiency targets, as well as comparing environmental performance against planetary boundaries.	JRC.D.1 SERENELLA SALA	1.3.2.b	ENV	ENV	Hugo-Maria SCHALLY, ENV B.1 Head of Unit; Jiannis KOUGOULIS, ENV B.1 Thomas VERHEYE, ENV A.2 Head of Unit	ESTAT	EEA - European Environment Agency	09/04/2015 08/10/2018	CON-AA	3	Final report	Summary of the development of the LCA based assessment framework for assessing relevant consumption and eco-innovation policies. The methodology assesses environmental impacts from three different perspectives: end consumer product group (micro level); food, housing, mobility, household pr. (meso level); average EU consumer (micro level). Will cover the development of an index to monitor the evolution of the environmental impacts of EU consumption/production at macro level.	09/08/2018	JRC technical reports
484 - INSPIRE JRC.B.6	3062 - INSPIRE Imp & Evol Implementation and Evolution of INSPIRE	This Administrative Arrangement (07.0201/2015/705430/ENV.D.4), together with two further AAs with DG ENV (INSPIRE, SEIS and SIIFs, wpg 2123, and INSPIRE for Better Regulation, wpg 3785), supports DG Environment in addressing various challenges that emerged in the Fitness Check for environmental monitoring and reporting, the INSPIRE REFIT, the alignment with other new Commission initiatives and priorities (e.g. Digital Single Market, Better Regulation,...) and provides the resources needed to execute the INSPIRE Maintenance and Implementation Work Programme 2016-2020.	JRC.B.6 Michael LUTZ	1.3.2.b	ENV	ENV	Hugo DE GROOF, Joeri ROBBRECHT	AGRI ESTAT MARE NEAR REGIO	EEA - European Environment Agency MS EU - Member states EU Reg Aut Env - Candidate Countries Members States regulatory authorities on Environment	21/04/2015 19/04/2019	CON-AA	201901	Final Report	The final report will summarise all activities and outcomes of the tasks performed under this AA.	19/04/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
484 - INSPIRE JRC.B.6	3785 - INSPIRE-BR INSPIRE for Better Regulation	This Administrative Arrangement (07.0203/ENV/2016/734394/D.4) supports DG Environment in addressing various challenges and new priorities defined in the new INSPIRE strategy reflected also in the new INSPIRE Maintenance and Implementation Work Programme 2016-2020 (MIWP). The Administrative Arrangement provides also the necessary resources to execute the INSPIRE MIWP 2016-2020 covering activities in the following main working areas: • Fostering "Fitness for purpose": This activity will analyse possibilities for streamlining and simplification of INSPIRE implementation technical and legal framework, proposing and implementing an action plan based on this analysis. The activity aims at making the INSPIRE implementation requirements and guidelines easier and more feasible to implement and better fit for use in broad end-user applications. • Focusing on "End user applications": This activity will cover further development of a list of priority	JRC.B.6 Michael LUTZ	1.3.2.b	ENV	ENV	JOERI ROBBRECHT	AGRI ESTAT MARE NEAR REGIO	MS EU - Member states EU Reg Aut Env - Candidate Countries / Members States regulatory authorities on Environment	29/06/2016 28/06/2019	CON-AA	201801	Status report on INSPIRE for Better Regulation 2	This interim report will summarise the activities carried out under the AA up to the date of the report and evaluate how INSPIRE has been contributing to better regulation. The report will cover activities related to the following working areas defined in the INSPIRE maintenance and implementation work programme 2016-2020: (1) Fostering "Fitness for purpose", (2) End user applications and (3) Continued support to implementation	31/08/2018	Project management related documents/reports identified as outputs of the JRC Work Programme
												201901	Final Report on INSPIRE for Better Regulation	This report will summarise the activities carried out under the AA up to the date of the report and evaluate how INSPIRE has been contributing to better regulation. The report will cover activities related to the following working areas defined in the INSPIRE maintenance and implementation work programme 2016-2020: (1) Fostering "Fitness for purpose", (2) End user applications and (3) Continued support to implementation	28/06/2019	Project management related documents/reports identified as outputs of the JRC Work Programme

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4862 - LCM-IABR&SM JRC.D.1	3813 - BE SMART-LCA Bio and green Economy in the Single Market: supporting better Regulation through environmental LCA	The transition towards sustainable economies requires integrated assessment methodologies for ensuring reduction of environmental burdens associated to innovation and solutions. The "better regulation" toolbox associated to COM(2015)215 explicitly mentioned life cycle analysis as a tool for supporting impact assessment of policies. Hence, several deliverables of this WP will support the development of competence (through training and guidance), towards the use of life cycle based methods for policy impact assessment. Specifically, BE SMART-LCA supports the implementation of life cycle analysis into the Better Regulation package, focusing primarily on key elements of a green bio economy, by providing the life cycle-based methods and indicators for mainstreaming environmental and sustainability issues into a broader range of policy areas such as a sustainable bioeconomy, a circular economy (CE) and the Single Market. It also is designed to support the implementation of the Bioeconomy Action Plan, section 9, supporting "(...) the future development of an agreed methodology for the calculation of environmental footprints, e.g. using life cycle assessments (LCAs)". Resource efficiency requires integrated assessment methodologies and indicators geared towards sustainable solutions. BE SMART-LCA focuses on developing indicators and assessing solutions for improving environmental sustainability at various levels: micro scale (e.g. products like plastic articles, services), meso scale (e.g. industrial sectors) or macro scale (e.g. EU wide policy options). Life cycle thinking and assessment are applied to help avoid the shifting of burdens from one stage to another (e.g. from mining to end of life), from one environmental issue to another, from one generation to the next or from inside the EU to third countries. Improved methods for carrying out environmental impact assessment will help provide a more holistic and evidence-based decision support in the context of the Better Regulation package and tools to complement socio-economic assessments towards a more competitive and resilient sustainable European Market.	JRC.D.1 Rana PANT	1.3.2.b	ENV	JRC	HUGO SCHALLY - HoU;	AGRI CLIMA ENER GROW SANTE SG	- EUROPEAN FOREST INSTITUTE - EUROPEAN COPPER INSTITUTE - European Consumers' Organisation - World Wide Fund for Nature - European Policy Office - European Aluminium Association DTU - Technical University of Denmark - Danmarks Tekniske Universitet EEB - European Environmental Bureau FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) ACE AISBL - THE ALLIANCE FOR BEVERAGE CARTONS AND ENVIRONMENT AISBL L ALLIANCE CARTON ET L'ENVIRONNEMENT ACE EUROFER - European Confederation of Iron and Steel Industries (EUROFER) Food SCP - European Food Sustainable Consumption and Production Round Table INRA France - Institut National de la Recherche Agronomique (INRA), France ORGALIME - European Engineering Industries Association PlasticsEurope - Association of Plastics Manufacturers (PlasticsEurope) Tech Serv - Member States and their Technical Services/type approval authorities UNEP - United Nations Environment Programme (UNEP) WBCSD - World Business Council for Sustainable Development (WBCSD)	01/01/2016 31/12/2019	INS-RS	20174	Organisational Footprint-Ispra site	In cooperation between the Institute for Environment and Sustainability and the Ispra Site Management (ISM), the existing Organisation Environmental Footprint (OEF) of the JRC Ispra site will be updated via a contractor to bring it in line with the more recent developments of the OEF method and underlying OEF data. An external review of the OEF report will be carried out to enable the communication of OEF results for the JRC Ispra site in line with Recommendation 2013/179/EU.	30/06/2018	JRC technical reports
												20183	EPLCA information system	The European Platform on LCA provides the EU Commission platform for distributing and promoting best practice and data for LCA. It includes Life Cycle Inventory (LCI) and Life Cycle Impact Assessment (LCIA) related data and the LCA Resource Directory (RD). The JRC will support this primarily by increasing the availability of data and methods to support the environmental footprint, as well as bio and green economy in global supply chains. Moreover, through continuous developments, maintenance, updates and additions of data sets the Life Cycle Data Network (LCDN) will ensure the accessibility of quality assured and peer reviewed life cycle data to industries involved in the Environmental Footprint (EF) work. This will cover product categories and sectors covered from the ~25 industry led EF pilots, 12 of which focusing on food, feed, textile and the wood-related sector.	31/12/2018	Scientific information systems and databases
												20185	Publications in the area of Life Cycle Assessment and Environmental Footprint	Focusing on the 4 year support gained in the 3 JRC led Environmental Footprint (EF) pilots, the lessons learned will cover experiences from the EF pilots (12 of which related to the food and feed sector, textile and wood-related products). Conclusions will be drawn from a JRC perspective for further policy support activities in the area of environmental assessments with a focus on the relevance of pre-normative activities and stakeholder involvement. Recent developments in the area of Life Cycle Impact Assessment (LCIA) also will be a focus area.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												20186	Guidance on LCA-based policy impact assessment	The Better Regulation with its toolbox n.58 foresees the enhanced application of Life Cycle Analysis for the purpose of supporting policy Impact Assessments. This deliverable will provide a categorization leading to guidance in which policy cases LCA should be further investigated as a means for the policy Impact Assessment, in which cases an initial screening should be sufficient, and in which cases the application of LCA is not indicated. Case studies will focus on bio and green economy.	31/12/2018	Science-for-policy reports
												20191	Training on LCA supporting Better Regulation	The training material on Life Cycle Thinking will be revised/adjusted in terms of format and content based on feedback and expressed needs from participants in the last sessions. The possibilities to produce an e-learning tool for policy desk officers will be tested.	20/12/2019	Training
												20192	Scientific papers in the area of Life Cycle Assessment and Environmental Footprint	Scientific papers in the area of Life Cycle Assessment and Environmental Footprint with a focus on Life Cycle Impact Assessment, e.g. on the dissipative use of resources and related to the LCA of plastics.	20/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												20193	EPLCA Information System	The European Platform on Life Cycle Assessment (EPLCA) provides the EU Commission platform for distributing and promoting best practice and data for LCA. It includes Life Cycle Inventory (LCI) and Life Cycle Impact Assessment (LCIA) related data and methods and the LCA Resource Directory (RD) which includes applications and case studies, e.g. to plastics LCAs. The JRC will support this primarily by increasing the accessibility of data and case studies to support LCA and the environmental footprint, as well as bio and green economy in global supply chains.	20/12/2019	Scientific information systems and databases
20194	Better Regulation: implementation guide for toolbox n.58	The Better Regulation with its toolbox n.58 foresees the enhanced application of Life Cycle Analysis for the purpose of supporting policy Impact Assessments. This deliverable will provide a guide on how to implement LCA throughout the policy cycle with a focus on providing clear guidance on it and how to apply LCA in the policy Impact Assessment. Case studies will focus on bio and green economy and the area of plastics.	20/12/2019	Science-for-policy reports												
7653 - ENGAGE JRC.I.2	3826 - CSData Citizen Science Data Platform	This work package examines the integration of Public Sector Information (which is increasingly available thanks to Open Data policies) with dynamic data streams from novel sources, esp. data collected by citizens. It develops methodologies and tools, and demonstrates their combined use for selected European policies, and reflects on the implications for established information flows and processes with existing stakeholders. The demonstrators will first contribute to the Environmental Knowledge Community (EKC), and policies such as the Action Plan for nature, people and the economy, and the Action Plan to streamline environmental reporting. They will be extended to other policy areas depending of policy interests. As part of this work, we provide a data handling and visualization platform for Citizen Science and demonstrate its value for European policymaking at the intersection of the Better Regulation and Open Science agendas. This platform will be gradually extended in order to support re-use across the JRC as a support facility for thematic applications that include contributions from citizens as part of their activities. Scenarios for the possible future migration of this JRC Citizen Science data platform to a sustainable operational environment will also be developed and assessed. This activity contributes to the joint work on public engagement (with units I.1, I.2 and I.3, as well as relevant production units) with the data-handling platform, citizen science experiences and the collaborations with the EKC.	JRC.B.6 Jean DUSART	1.3.2.b	ENV	JRC	John MAGAN	CNECT ESTAT RTD SG	EEA - European Environment Agency	02/01/2017 31/12/2020	INS-RS	201801	Citizen Science Data Platform	Release of the platform that provides access to Citizen Science data, tools, and applications of the JRC and selected EU-funded projects. The platform showcases the wealth of Citizen Science in Europe (collected in an inventory), and includes successful demonstrators of using Citizen Science for European policies (e.g. on invasive alien species, nature protection, air quality or support to the 2018 Year of Cultural Heritage). It thereby supports the EKC and other Units of the JRC, and contributes to a jointed pilot on public engagement with Dir. I. Data is provided via the JRC Open Data catalogue where appropriate.	31/12/2018	Scientific information systems and databases
												201802	Feasibility studies on the use of citizen science data	Presenting solutions that are driven by the integration of public sector information with data streams from citizens, considering feasibility assessments given ethical, legal and organisational constraints, and addressing different parts of the policy cycle. Including findings and lessons learned about the effectiveness of Citizen Science, and methodologies for data integration. Based on joint work within the JRC, and with DG ENV, DG EUROSTAT and the EEA.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201901	Evolution of the Citizen Science Data Platform	Further extension of the data platform in order to address emerging needs from collaborating units in the JRC. Accommodating additional digital tools, technical and methodological guidelines, best practices, and contributing to common practices in collaboration with Dir. I. It includes a sustainability plan and a study of the hand-over options.	31/10/2019	Scientific information systems and databases
												201902	JRC's support for Citizen Science	Report about structures, tools and methods that are available to the JRC for carrying out Citizen Science at different scales, by providing and experimenting with interconnected physical and virtual spaces where citizens, scientists, policy makers and other stakeholders can interact supported by sound methodological approaches as well as adequate information infrastructures and data platforms. Presenting the results of collaborations with units I.1, I.2 and I.3, as well as with other knowledge production units. Among others, contributing to Action 8 of the action plan to streamline environmental reporting.	15/12/2019	Science-for-policy reports
												202001	Citizen Science Data Platform - handover	Depending on the feasibility study for the future operations of the Citizen Science Data Platform (deliverable 201901), this deliverable entails the platform ready for handover. It includes details such as the handover implementation plan, ensuring its continued maintenance and functioning. This deliverable also contains an operations manual and systems documentation that facilitate the future operation of the platform.	15/10/2020	Scientific information systems and databases
												202002	Citizen Science for Policy	Reflections on new ways of contributing to the provision of scientific evidence. Providing a new perspective to interconnect Citizen Science and public administration, considering methods for transparently integrating traditional data flows and Citizen Science at different stages of the policy cycle in ways that meet expectations. Outlining possible governance structures for operational approaches at EU level including contributions to the Better Regulation Toolbox (with other JRC units, ENV, RTD, ESTAT and SG).	15/12/2020	Science-for-policy reports
1.3.3. Protection from environment-related risks to human health and wellbeing																
1.3.3.a chemicals and nanomaterials - help to design and implement legislation on chemicals, including for nanomaterials, and support policy development in cross-cutting areas. Set up a toxicology knowledge base and further develop and maintain the Information Platform for Chemical Monitoring IPChem, especially to support the European Human Biomonitoring Initiative HBM4EU. Support mutual acceptance of chemicals and nanomaterial data at																
101 - Predict JRC.F.3	805 - Predict-WPK3 Endocrine disruptors and reproductive/developmental toxicants	There is concern that manufactured chemicals released into the environment on their own or in combination with other chemicals may be partly responsible for the rise in certain types of disorders in humans and wildlife. It is suspected that these disorders originate from exposure during development and may in some cases be caused by the chemicals interfering with the production or action of hormones. This project will focus on the development and evaluation of integrated approaches for testing and assessment of endocrine disrupting chemicals and reproductive toxicants, including developmental (neuro)toxicants, with a view to improving the protection of humans and ecosystems from the harmful effects of chemicals. In particular, this will include exploiting the value of 'non-animal' in vitro and in silico methodologies for understanding how chemicals perturb the reproductive and/or endocrine systems to produce toxic effects. This will be achieved by reviews of the state of the art, input to international (OECD) and EU expert working groups and workshops and development of strategy documents on the way forward, including identification of relevant in vitro assays for	JRC.F.3 SHARON MUNN	1.3.3.a	ENV	JRC	ENV.A.3, Peter KORYTAR	GROW SANTE	- United States Environmental Protection Agency Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals	01/01/2016 31/12/2018	INS-RS	5	Advanced methods for identification of EDs	To provide scientific support to DG ENV for a series of workshops/activities (including disruption of hypothalamic-pituitary-thyroid axis and retinoid pathway, as well as temporal aspects of exposure and interspecies sensitivity) leading to a strategy for the identification and prioritisation of new methods and enhancement of existing methods for the assessment of endocrine disrupting substances (EDs).	31/12/2018	JRC technical reports
												7	Linking combined exposure to disease outcome	Scoping study to explore the feasibility of using information on combined exposure to chemicals for predicting combined health effects and comparison to disease incidence data.	31/10/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																											
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category											
101 - Predict JRC.F.3	807 - Predict-WPK1 Toxicity assessment of combined exposures and chemical mixtures	variety of EU regulations, but currently there is no harmonised methodological approach for their assessment. This gap in the EU regulatory assessment framework has recently gained more attention, following the 2012 Commission Communication on the Combined Effects of Chemicals, and in the context of the ongoing chemicals fitness check (REFIT). The aim of this work package is to contribute to the development of an internationally harmonised risk assessment methodology and EU regulatory guidelines for chemical mixtures. The risk assessment methodology is based on the use of existing hazard and exposure information, along with data generated by in vitro experiments and computational modelling to characterise and predict the toxicokinetic and toxicodynamic interactions of chemical substances in mixtures. A close collaboration with the EuroMix H2020 project has been established to guide research efforts and translate research developments into regulatory guidance. The work also	JRC.F.3 Stephanie BOPP	1.3.3.a	ENV	JRC	ENV.A.3, Peter KORYTAR	GROW SANTE	ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority	01/01/2014 31/12/2018	INS-RS	8	Case studies on Cumulative Risk Assessment Methodologies	Case studies to illustrate the combined effects of chemicals and the applicability of new approach methods. This will include: a) the development of an in vitro approach for evaluating combination effects of potential developmental neurotoxicants (e.g. pesticides, industrial chemicals, heavy metals and polychlorinated biphenyls) to determine whether synergistic, antagonistic or additive effects are observed for realistic mixtures; b) the use of human biomonitoring data; c) the application of ecological Thresholds of Toxicological Concern; and d) the application of the AR-CALUX method validated under Validate WPK2.	30/11/2018	JRC technical reports											
102 - Disseminate JRC.F.3	814 - Disseminate-WPK2 Data, information & knowledge platforms supporting chemical safety assessment & alternative methods	The work package disseminates knowledge generated in the unit and within its cross-JRC, cross-Commission and global collaborations, dealing with Adverse Outcome Pathways (AOPs), chemical hazards and internationally agreed data reporting formats. Knowledge is distributed on three levels: conceptually (e.g. the AOP principle), content-wise (e.g. concrete AOPs, chemical hazard information) and practice-oriented (ICT systems, data formats, tools for data migration to these formats). The conceptual level is covered by the provision of publications, conference presentations and contributions to international steering groups (e.g. OECD EAGMST); content provided to the stakeholder community are in-house developed AOPs, data on chemical hazard properties (e.g. genotoxicity/carcinogenicity), while the tool aspect is implemented by providing public access to relevant knowledge bases (e.g. AOP-KB, especially a module dealing with Intermediate Effects of chemicals) and portal applications (e.g. CheLIST and ChemAgora), as well as OECD Harmonised Templates and tools to format legacy data accordingly.	JRC.F.3 Clemens WITTEWEHR	1.3.3.a	ENV	JRC	ENV.A.3, HANSEN Bjorn	GROW SANTE	- United States Environmental Protection Agency Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2014 31/12/2018	INS-RS	14	AOP-KB evolution reports	Report on progress in development and roll-out of further releases and modules of the Adverse Outcome Pathway Knowledge Base (AOP-KB), including the Intermediate Effects DB (IEDB), the JRC module of the AOP-KB. The AOP-KB, developed through a collaboration of JRC and the US EPA and launched by the OECD, allows stakeholders to build AOPs by entering and linking information about AOP elements in a "crowdsourcing" fashion. Value is added by re-using AOP-KB elements across different AOPs.	30/11/2018	Scientific information systems and databases											
												15	Chem Inf Systems (dev/update) - 2018	2018 Status report on Chemical Information Systems related activities. This includes outputs on all levels of abstraction (from prescriptive standards to descriptive DB content), like reporting formats (OHTs, AOP-XML, ...), tools (XLS2OHT), portals (CheLIST, ChemAgora, eChemPortal, ...), and in-house toxicological databases (Skin Sensitisation DB, Genotoxicity/Carcinogenicity DB, Acute Systemic Toxicity DB...).	31/10/2018	Scientific information systems and databases											
												16	Content Contribution to the AOP-KB 2017-2018	Development and evaluation of Adverse Outcome Pathways (AOPs) which are structured, mechanistically-based descriptions of chemically-induced toxicity. This includes harvesting and generating knowledge on the causal chain of events from exposure of an organism to an adverse outcome. The information will be used to populate the AOP Knowledge Base, inform development of computational models, prioritise in-vitro assays for validation and guide the development of approaches to integrated assessment.	30/11/2018	Datasets											
												17	Measures to improve 3R Knowledge Sharing	In the context of the Commission reaction to the 2016 Citizen's Initiative "Stop Vivisection" and the F.3 contribution by the study on 3R knowledge sharing, three issues were identified as possible follow-up: 1) intensification and co-ordination of 3R-related Training and Education activities, 2) the creation of a 3R Knowledge Sharing community, 3) introduction of indicators to measure the impact of 3Rs on society and science. A first step will be commissioning external studies to identify the best way to make progress. This deliverable will collect the external studies, as well as reports on measures that resulted from the study recommendations.	30/11/2018	External study reports											
												31	The Adverse Outcome Knowledge Base Intermediate Effects DB	In the context of the OECD project "Adverse Outcome Knowledge Base" (AOP-KB), a module to manage chemical in-vitro results is foreseen. The module is titled "Intermediate Effects DB" (IEDB), and it will rely both on the OECD Harmonised Template 201 (OHT 201, for reporting Intermediate Effects) and the IUCLID SW, managed by ECHA. The OHT 201 is currently being revised at OECD level (with JRC collaboration). The JRC will use an updated version of IUCLID to create the IEDB once OHT 201 is finalised.	31/12/2018	Scientific information systems and databases											
102 - Disseminate JRC.F.3	816 - Disseminate-WPK1 Dissemination and knowledge management of advanced and alternative methods in life sciences	This WPK fulfils an EURL ECVAM mandate to provide PUBLIC DATABASES for the dissemination of ready-to-use information on various aspects of non-animal methods (e.g. in vitro, in silico), together with SEARCH GUIDANCE and REVIEWS ON THEIR STATUS to facilitate the uptake in various sectors. This principally includes the: i) DataBase service on ALternative Methods (DB-ALM), QSAR Model Database, Tracking System for Alternative methods towards Regulatory acceptance (TSAR), as well as ii) the Search Guide, and the iii) the EURL ECVAM Status Report. For 2018 emphasis is given to non-animal models in use in biomedical research, in addition to methods related to toxicological evaluations of chemicals with various modes of action. Nanomaterials, medical devices, drugs or biological agents are also addressed as they become available. The EURL ECVAM databases are unique in providing methods and models in OECD accepted formats, which has a huge potential to make readily available the knowledge from the R&D domain in a standardised manner, thus facilitating their assessments and consequently uses by regulators, scientists or any end user in life sciences. The JRC is attracting a large stakeholder community through the services: e.g. 2000 newsletter subscriptions, over 5000 registrations from 82 countries. The multidisciplinary context covering various policy areas, the central access to new methods at all stages of development and acceptance from various sources in internationally recognised formats make them unique resources. However, to further ensure the provision of public high-quality databases continuity for content update and system evolution is required.	JRC.F.3 Annett JANUSCH RO	1.3.3.a	ENV	JRC	ENV.A.3, Satu Susanna LOUHIMIES	GROW RTD SANTE	Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority EMA - European Medicines Agency (EMA) EP - European Parliament ICATM - International Cooperation on Alternative Test Methods (ICATM) KNIC3Rs - Korean National Information Center for the 3Rs OECD - Organisation for Economic Co-operation and Development (OECD) Reg Aut BR - Regulatory Authorities from Brazil	02/01/2018 30/12/2018	INS-RS	12	Advanced EURL ECVAM databases	Provision of: i) UPDATED CONTENTS with particular emphasis on novel non-animal models in use for biomedical research, in addition to mechanistic investigations in toxicology and related fields of sciences at all stages of development and acceptance. The methods originate from individual scientific or integrated EU projects, from validation activities indicating their tracking status towards acceptance or other international sources; ii) further developed SCIENTIFIC TAXONOMY on alternative methods to ensure accuracy for data retrieval procedures during dissemination and allows for systems interoperability; iii) UPDATED REPORTING FORMATS to new standards or scientific needs with particular attention to research methods; and iv) INNOVATED SYSTEMS regarding new uses, such as for integrated approaches to testing; data display, retrieval and management; interoperability and technological evolution.	21/12/2018	Scientific information systems and databases											
												13	Harmonised taxonomy - TO BE DELETED-MERGED WITH D.12	Structured controlled scientific vocabulary (including headings, sub-headings, index terms) shall be provided enhancing access to mechanistic information by methods of EURL ECVAM databases supporting integrated approaches to testing, adverse outcome pathways and addressing sectors of biomedical research. It will include evaluation of ontologies, assessments during practical applications to ensure accuracy for data retrieval procedures during dissemination with the aim to further pursue systems interoperability.	30/12/2018	Scientific information systems and databases											
												15	2018 EURL ECVAM Overview on the status of alternative methods	The 2018 EURL ECVAM Overview provides regulators, stakeholders and the general public with an update on the progress made in the development, validation and regulatory acceptance of alternative methods and approaches since the last report published in 2017. It is informing on ongoing research and development activities, validation studies, peer reviews, recommendations, strategies and international acceptance of alternative methods and approaches.	30/11/2018	Science-for-policy reports											
												16	History of alternatives in toxicology	The deliverable will consist of a series of contributions to a book entitled "The History of Alternative Test Methods in Toxicology", which was commissioned by Elsevier and includes JRC editorship (Balls M, Combes R, Worth A). The book will focus on replacement methods, offering a historical account of contributions from different perspectives (country/organisation, application/sector, toxicological endpoint, technology type). JRC contributions include historical accounts of: the role of ECVAM; principles and procedures of validation; the role of the OECD; Spain; integrated approaches to testing and assessment; assessment of chemicals in food; alternatives for carcinogenicity and reproductive toxicity; and the role of databases.	31/10/2018	Article contribution to a monograph or other periodicals											
												5	EURL ECVAM Search Guide	The Search Guide provides advice and good practice for structured and systematic data retrieval approaches in life sciences together with information sources thereby reducing the reliance on animal use in scientific projects. It has found wide application in academic and legally required training courses in and outside Europe. An updated version will be prepared considering new or improved search tools and strategies, as well as information sources, basic principles and terminologies to be published by using different means.	30/09/2019	Books and monographs with JRC editorship											
												7	Mechanistic information on non-animal methods	In order to make all EURL ECVAM databases and systems interoperable, a harmonised classification system for non-animal methods for toxicological assessments will be developed also considering the adverse outcome pathway approach on key-events. It will include a proposal for amendments of the database on in vitro and in silico methods compliant with relevant international ontologies and scientific vocabularies for indexing and classifying information contents in life sciences.	28/02/2018	JRC technical reports											
												213 - TMA CC JRC.I.3	3351 - ENV/VM ENV RISK MONITOR	Support to DG ENV for Environmental Risk Monitoring based on open source (news) information, including the definition of topics of interest, identification of relevant information sources and customisation of newsletter templates to allow dissemination to DG ENV. Provide training on the EMM media monitoring tools, including the category editor and Newsdesk. Provide customised newsletter templates to be used by DG ENV. Provide general operational support (MediSys, NewsDesk, Category Editor) as required.	JRC.I.3 Jens LINGE	1.3.3.a	ENV	ENV	Elena Montani DG ENV		01/05/2017 30/04/2018	CON-AA	2	Categories & filters for monitoring of	Setup of categories and filters for monitoring of threats to the environment (e.g. chemical spills) and health (e.g. intoxication)	30/04/2018	Technical systems
																								3	OS-based Environmental Risk Monitoring	Improved Environmental Risk Monitoring capabilities at DG ENV enhancing its capabilities in identifying and monitoring emerging environmental risks and in turn improving the EC's foresight in the areas.	30/04/2018
101 - Predict JRC.F.3	3443 - Predict-WPK2 Integrated approaches for the regulatory assessment of chemicals	The aim of this work package is to develop and evaluate scientifically robust and innovative approaches for the safety assessment of chemicals across multiple regulatory sectors. By integrating the use of multiple and diverse sources of chemical information, integrated approaches are designed to assess (eco)toxicological endpoints of regulatory concern, thereby providing an efficient and effective means of managing chemical safety, while also promoting the 3Rs. The focus is on (eco)toxicological endpoints of regulatory concern, such as mutagenicity, carcinogenicity, systemic toxicity (acute and repeat dose toxicity) and skin sensitisation, as well approaches for toxicity to environmental organisms. The outputs of the work will be used to inform the development of OECD Test Guidelines and Guidance Documents, as well as proposals to the EU Competent Authorities for REACH and Classification and Labelling (CARACAL) and the UN subcommittee on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) on how to include alternative methods and integrated assessment and testing approaches into the GHS classification scheme.	JRC.F.3 Raffaella CORVI	1.3.3.a	ENV	JRC	ENV.A.3, Susanna LOUHIMIES	GROW RTD SANTE	CEFIC - European Chemical Industry Council (CEFIC) Cosmetics Europe - European Cosmetics Association ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2016 31/12/2018	INS-RS	13	Framework for new approaches in carcinogenicity	Development of a conceptual framework for the safety assessment of carcinogenicity to improve human protection. In sectors where a huge number of animals is needed upon regulatory requirements, the focus will be on the establishment of an intelligent strategy that relies on all available in vitro and in vivo data. In other sectors, where animal experiments are limited, the emphasis will be on identifying the underlying mechanisms of carcinogenicity, especially of non-genotoxic carcinogens.	31/12/2018	JRC technical reports											
												6	Framework for animal free chemical safety assessment	Development of a conceptual framework for the safety assessment of the systemic effects of chemicals based entirely on mechanistic knowledge and data derived from alternative (non-animal) methods. This framework will represent a shift away from the current regulatory testing paradigm based on apical (whole animal) endpoints to an entirely new approach based on animal-free methods (computational and in vitro) that address key mechanisms of action common to multiple endpoints. This includes: a) proposals for the integration of alternative methods in the GHS classification scheme; b) development of a framework for characterising the mechanistic profiles of chemicals and predictive methods; c) recommendations for characterising and documenting the uncertainty of assessment strategies based on alternative methods; d) analysis of mode of action classification schemes; and e) inputs to JRC research collaborations aimed at developing novel safety assessment approaches.	30/11/2018	JRC technical reports											

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
102 - Disseminate JRC.F.3	3445 - EASIS-AA EASIS Lifecycle Management under AA with ENV	Activities in the context of the lifecycle management for the Endocrine Active Substances Information System (EASIS), under an Administrative Arrangement with DG ENV. Scientific, political and ICT governance, data management, user support, further development, maintenance. EASIS was originally developed under an AA with ENV, as well as with institutional funds. EASIS is a web-based information system for the management, insertion and dissemination of information about endocrine activity-related properties of chemicals. EASIS's underlying data format is compatible with the OECD Harmonised Templates (OHTs), which makes EASIS data immediately re-useable in the regulatory context. EASIS is one of the pillars of JRC activities in the Endocrine Disrupter Chemicals area.	JRC.F.3 Clemens WITTEWEHR	1.3.3.a	ENV	ENV	Peter Korytar, Bjorn Hansen	GROW SANTE	Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority OECD - Organisation for Economic Co-operation and Development (OECD)	31/03/2016 30/03/2019	CON-AA	6	Annual Progress Report 2018	The EASIS Annual progress report will feature, related to the reporting period: - A communication and promotion activity report (i.e. how Deliverable 2 has been implemented). - A report on identification of relevant knowledge and data and on content additions and modifications. - A report on help-desk activities (number and kind of support tickets, resolution, trends) and on maintenance activities on EASIS. - A report on requirements to be implemented in the next EASIS release (Deliverable 7).	31/03/2018	Project management related documents/reports identified as outputs of the JRC Work Programme
												7	Updated version of EASIS 2018	A new version of EASIS containing all features described in the record of requirements being part of Deliverable 6	30/09/2018	Scientific information systems and databases
												8	Final Report	The EASIS Final progress report will feature, related to the reporting period: - A communication and promotion activity report (i.e. how Deliverable 2 has been implemented). - A report on identification of relevant knowledge and data and on content additions and modifications. - A report on help-desk activities (number and kind of support tickets, resolution, trends) and on maintenance activities on EASIS.	31/03/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
565 - IPCheM-NextGen JRC.F.7	3820 - IPCheM-SD Information Platform for Chemical Monitoring (IPCheM): System Development	IPCheM has been developed over the last 4 years to provide a single point for searching and retrieving chemical data collections of Europe. It aims at addressing one of the major gaps in knowledge base for chemical policies, which is the lack of information on the chemical exposure on the human body and the environment thus assisting policy makers and scientists to respond to related key policy questions. The main reference policy document is the EC Communication "The combination effects of chemicals – Chemical mixtures" (COM/2012/0252 final), asking a more coordinated approach for collecting, storing, accessing and assessing data related to the occurrence of chemicals and chemical mixtures. IPCheM was implemented as decentralised infrastructure establishing connections with remote databases. It allows accessing to: - Data collected for ad-hoc or regular legal obligations for reporting monitoring data at European or national level (see attachment 3 on EC Staff WD on REFIT on EU Environmental Monitoring and Reporting that refers to IPCheM as good example for boosting and efficiently implementing an environmental monitoring and reporting process in EU); - Data generated as result of targeted research on the presence of known or unknown substances in specific media (Human biomonitoring, environmental monitoring, Food and Feed monitoring, Products and Indoor Air). This work package is core part of project 565 (IPCheM-NextGen) and it is focused on the further design and development of the IPCheM to: - Ensure access to additional chemical monitoring data collections	JRC.B.6 SILVIA DALLA COSTA	1.3.3.a	ENV	ENV	BJORN HANSEN	RTD SANTE	ECHA - European Chemicals Agency (ECHA) EEA - European Environment Agency EFSA - European Food Safety Authority OECD - Organisation for Economic Co-operation and Development (OECD) WHO - World Health Organization	01/01/2017 31/12/2018	CON-AA	201801	IPCheM Version 5	Fifth release of IPCheM, including interfacing with cross unit/directorate IT systems.	28/02/2018	Scientific information systems and databases
												201802	IPCheM Version 5.1	Upgraded version of the fifth release of IPCheM (including interfacing with cross unit/directorate IT systems)	31/10/2018	Scientific information systems and databases
												201803	IPCheM Knowledge Transfer Plan	Final software Architecture document, hosting environment specifications, and code documentation. Migration plan is included in case of change of operator	30/11/2018	JRC technical reports
82 - Validate JRC.F.3	3821 - Validate-WPK1 Identification, assessment, acceptance and use of alternative methods to animal testing	This work package aims at identifying promising alternative methods suitable for basic/applied research and regulatory applications. Identified methods are subject to scientific assessment, eventual peer review and recommendation to stakeholders, and promotion aiming on international acceptance and use. Identification of alternative methods is done through e.g., incoming test method submissions, web calls, surveys, literature search, workshops and European and international research efforts. The methods are scientifically assessed by EURL ECVAM in collaboration with EU-NETVAL, prioritised through engagement with EU regulators (PARERE), stakeholders (ESTAF) and international partners (ICATM) and peer-reviewed by the EURL ECVAM Scientific Advisory Committee (ESAC). ESAC peer reviews are normally carried out by specialised ESAC Working Groups (ESAC WGs), which are set up on the basis of the expertise required on the test method(s) and/or scientific question(s) under review. Following this, EURL ECVAM Recommendations on the test methods' scientific validity and (regulatory) use are issued in order to fulfil the requirements of European legislation and sectorial regulatory frameworks calling for alternative methods and the implementation of the 3Rs (Replacement, Reduction, Refinement of animal testing). This work package also encompasses the translation of validated alternative methods and approaches for quality/efficacy assessment, hazard identification, classification and labelling, hazard characterisation and/or safety assessment into EU chemicals legislation (e.g. REACH annexes and EU test method regulation) and international test guidelines and guidance documents adopted by e.g., the OECD, ICH, VICH. Finally, it involves the engagement with stakeholders via formal committees (i.e., EURL ECVAM's network of regulators (PARERE), EURL ECVAM's stakeholders forum (ESTAF), international cooperation on alternative test methods (ICATM), network of validation laboratories (EU-NETVAL)) and informal networks (e.g. EU 3Rs Centres, universities, biomedical community) to promote the wider acceptance and use of alternative methods. In 2018 the WPK will emphasise its focus on biological research, to map and identify non-animal methods that could assist in more reliable research results and reduce the number of animals needed. This effort is related to the F.3 activity on 3Rs knowledge sources and knowledge sharing between different areas of expertise and research.	JRC.F.3 Maria Del Pilar PRIETO PERAITA	1.3.3.a	ENV	JRC	ENV.A3, Satu Susanna LOUHIMIES	GROW SANTE	Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EDQM - European Directorate for the Quality of Medicines and HealthCare (EDQM, Council of Europe) EFSA - European Food Safety Authority EMA - European Medicines Agency (EMA) ICATM - International Cooperation on Alternative Test Methods (ICATM) ICCR - International Collaboration of Cosmetics (ICCR) ICH - International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) OECD - Organisation for Economic	01/01/2016 31/12/2018	INS-RS	10	Contributions on alternatives OECD&Internat. 2018	To support safety assessment of chemicals and/or nanomaterials based on alternative methods, EURL ECVAM develops new and revised (OECD) Test Guidelines, Performance Based Test Guidelines, Guidance Documents, Detailed Review Papers, Performance Standards and others under EC leadership, including replies to official comments provided by member countries on such documents; Provision of comments on documents developed under non-EC leadership. This deliverable captures the relevant activities in 2018	31/10/2018	Validated methods, Reference methods and measurements
												11	Contributions to policy support related to alternative methods 2018	To support safety assessment of chemicals based on alternative methods and approaches, EURL ECVAM e.g., develops documents for technical and policy support to DG ENV, DG GROW and ECHA in view of updates of REACH Annexes and/or preparation/revision of guidance documents; contributes to the review and fitness check of EU chemicals legislation; contributes to the revision of the SCCS Notes of Guidance; and contributes to the revision of UN GHS/EU CLP classification criteria. Furthermore, EURL ECVAM intends to map and identify non-animal methods that could assist in basic and applied research, e.g. in the area of non-animal disease models.	31/10/2018	Validated methods, Reference methods and measurements
												8	Alternative test method assessment reports 2018	Assessment reports on alternative methods assessed by EURL ECVAM between November 2017 and October 2018. This includes assessment of both pre- and complete submissions of alternative methods received through EURL ECVAM's two-step submission process or of promising alternative methods identified through other means with regards to their status of development, optimisation and/or validation and their potential relevance with regard to the 3Rs (replacement, reduction, refinement of animal testing).	31/10/2018	JRC technical reports
												9	Altern. method peer reviews & recommendations 2018	ESAC peer reviews and EURL ECVAM Recommendations (RECs) on alternative methods, issued between November 2017 and October 2018. The RECs express EURL ECVAM views on scientific validity, usefulness, limitations, possible regulatory application and possible follow-up activities in view of addressing knowledge gaps, taking into account the outcome of independent peer review by ESAC and following consultation of EU regulatory experts, stakeholders, international partners, other EC services and the public. Since the peer review of a validation study involves a considerable amount of work, ESAC WG members shall be entitled to the payment of a flat fee (fixed daily rate) of a maximum of EUR 450 for each full day of work at EURL ECVAM during a dedicated ESAC WG meeting (up to a maximum of 3 days), including related preparatory work. A maximum yearly budget of EUR 40000 is foreseen for payment of such fees calculated on the basis of four 3-day ESAC WG meetings (composed of 7 members on average).	31/10/2018	JRC technical reports
82 - Validate JRC.F.3	3822 - Validate-WPK2 Evaluation, validation and translation into regulation of in vitro test methods	This work package implements part of the tasks assigned to the European Union Reference Laboratory for Alternatives to Animal Testing (EURL ECVAM) as stipulated in Directive 2010/63/EU "on the protection of animals used for scientific purposes" (Art. 48 and Annex VII), namely (i) coordinating and promoting the development and use of alternatives to procedures including in the areas of basic and applied research and regulatory testing, (ii) coordinating and participating in the validation of alternative approaches at Union level. Moreover, following the above mentioned Directive (Art. 47), a network of 37 EU specialised and qualified laboratories (including EURL ECVAM's own laboratory) has been established (EU-NETVAL) and is being coordinated by EURL ECVAM to support validation studies. EURL ECVAM makes use of this network of expert laboratories to assist in a number of tasks such as in vitro method definition and description, and in vitro method validation. The EURL ECVAM laboratory has also high throughput screening capacity that allows the in-house generation of toxicological datasets, which serve the assessment of the relevance of promising methods and facilitate international collaborations (with e.g. the US EPA and the EU-ToxRisk H2020 consortium) in various policy areas such as endocrine disrupters and environmental chemicals. The above described activities will lead to the translation of the validated alternative methods into OECD Test Guidelines and/or Guidance Documents.	JRC.F.3 Mounir BOUHIFD	1.3.3.a	ENV	JRC	ENV.A3, Satu Susanna LOUHIMIES	GROW SANTE	Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority EMA - European Medicines Agency (EMA) OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2016 15/11/2020	INS-RS	11	Draft Performance Based Test Guideline on ARTAs	This OECD test guideline, with accompanying Performance Standards, will be drafted on the basis of three validated Androgen Receptor Transactivation Assays (ARTAs). The first validated method will be the EURL ECVAM validated AR-CALUX method. Two other validated methods will be provided by a third party (Japan and Korea) for which the validation has been finalised or is respectively ongoing. EURL ECVAM has the lead for developing this test guideline.	15/11/2020	JRC contributions to standards
												12	Validation report on the AR-CALUX in vitro method	The AR-CALUX in vitro method assesses androgenic and anti-androgenic activity of chemicals, and, was accepted for an ECVAM coordinated validation study (D13-Step 1- and D3-Step 2-). Data generated with this method by 3 EU NETVAL labs, will be summarised in a validation report, analysed and conclusions made on reliability and relevance of the method, to be used to draft an OECD performance-based test guideline and performance standards.	31/03/2019	Validated methods, Reference methods and measurements
												15	Reporter-gene high throughput screening	Information on the activity of genes in response to toxic substances is publicly available. This information is used to design rapid and sensitive reporter gene assays for the assessment of specific toxicological insults and that are highly amenable to high throughput screening. In collaboration with the US EPA in policy areas of common interest, e.g. endocrine disruption, cell based models (designed at EPA) to specifically probe selected genes, will be implemented on the in-house high throughput platforms for large scale chemical assessment.	15/09/2018	JRC technical reports
												16	Draft OECD Guidance on metabolic clearance methods	This document will describe the most important elements and attributes of in vitro hepatic metabolic clearance methods and give guidance to report the information, generated with these in vitro methods, in a structured and easily accessible way. The document is intended to reach a broader audience and facilitate the use of in vitro methods on hepatic metabolic clearance for regulatory risk assessment and therefore to ultimately contribute achieving 3Rs impact in the area of toxicokinetics.	30/04/2019	JRC contributions to standards
												3	Large scale AR-CALUX assay data	The AR-CALUX reporter gene in vitro method assesses androgenic and anti-androgenic activity of chemicals. In the context of an ECVAM coordinated validation study, following Step 1 (D13), the validation study will enter step 2 which consists in the generation of a large data set with selected coded chemicals. The study will allow an assessment of the reliability and relevance of the AR-CALUX in vitro method. Additional data will be independently generated in-house in the high throughput screening facility to further verify the relevance of the method.	30/06/2018	Validated methods, Reference methods and measurements
		The H2020 project VAC2VAC brings together 20 public and private partners (vaccines manufacturers, control laboratories, academia, etc) and aims at provision of data to support the consistency approach for quality control of established vaccines (e.g. tetanus, diphtheria, pertussis, clostridial, leptospiral and rabies vaccines). The consistency approach moves away from the current focus on final product control heavily relying on animal testing. In the light of this, VAC2VAC partners will develop, optimise and evaluate non-animal methods, e.g. physicochemical and immunochemical methods, cell-based and						Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals,			3	Annual report 2018	This report summarises the work carried out in 2018 including the guidance on design of multicentre validation studies (as deliverable 5.4 of VAC2VAC WP5).	31/12/2018	Project management related documents/reports identified as outputs of the JRC Work Programme	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
82 - Validate JRC.F.3	3868 - VAC2VAC Vaccine batch to vaccine batch comparison by consistency testing	Other assays for routine batch quality, safety and efficacy testing of vaccines, in collaboration and consultation with regulatory agencies. The JRC with its EU Reference Laboratory for Alternatives to Animal Testing (EURL ECVAM) has the lead for Work package 5 (WP5) "(Pre)-validation (setting of criteria for method development and validation, collaborative studies incl. novel design, training)". WP5 covers the various aspects of validation, where validation is defined as the process of assessing the reliability and relevance of a method for a given purpose. Establishment of appropriate criteria for the robust and complete validation of methods will help to meet regulatory expectations and to achieve regulatory compliance for their implementation. This will be supported by organising an expert workshop covering general aspects of validation, specific aspects of consistency approach methods and design of multi-centre validation studies including product-specific validation requirements. The outcome of the workshop will be summarised in a guidance document.	JRC.F.3 MARIA ELISABETH HALDER	1.3.3.a	ENV	RTD	ENV.A3, Satu Susanna LOUHIMIES	GROW RTD SANTE	Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry EDQM - European Directorate for the Quality of Medicines and HealthCare (EDQM, Council of Europe) EMA - European Medicines Agency (EMA)	01/03/2016 28/02/2021	CON-IA	4	Annual report 2019	This report summarises the work carried out in 2019.	31/12/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
												5	Final VAC2VAC workpackage 5 report	This report will summarise the work JRC carried out for this project.	31/12/2020	Project management related documents/reports identified as outputs of the JRC Work Programme
565 - IPCheM-NextGen JRC.F.7	3944 - IPCheM-SciCoor Information Platform for Chemical Monitoring (IPCheM): Scientific Coordination	Understanding of environmental and human health effects of combined exposure to chemicals and evidence-based decisions of a number of EU policies cross-cutting the areas of environment, health and chemicals rely on timely accessing and using reliable, robust and high quality data. This concerns the implementation and evaluation of the entire chemical legislation acquis and requires serving multiple Commission Services (e.g. ENV, SANTE, GROW, JUST, ENER, HOME, TAXUD, EMPL), EU Agencies (e.g. EEA, EFSA, ECHA, EMA) as well as international work on chemical management under the OECD and the environmental and health policies of UNEP and WHO.	JRC.F.7 Stylianos KEPHALOPOULOS	1.3.3.a	ENV	JRC	Bjorn Hanssen (DG ENV); Peter Korytar (DG ENV); Florence Limet (DG ENV); Frans Verstraete (DG SANTE); Elsa Maia (DG HOME); Tommaso Chiamparino (DG)	CNECT EMPL ESTAT GROW JUST MARE RTD SANTE	ECHA - European Chemicals Agency (ECHA) EEA - European Environment Agency EFSA - European Food Safety Authority OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2016 31/12/2018	INS-RS	7	Strategy on IPCHEM's next generation development	The strategy will guide the evolution of IPCHEM into the EC's Reference Knowledge Hub on Health, Environment and Chemicals serving cross-cutting EU policies by: • Achieving an efficient system that makes accessible and facilitates the use, integration and sharing of existing and emerging data, information and knowledge on chemical monitoring, exposure and toxicological data and health information. This will result in improved exposure and risk assessments, a fundamental tool in support of EU policies and decision-making. • Enabling a shared and evidence-based knowledge to support environment, health and economical impact assessments in EU.	31/05/2018	Science-for-policy reports
433 - SciNANO JRC.F.2	5320 - D-NANO Detection and characterisation methods for implementation of nanomaterials regulations	This work package aims to: (a) coordinate the work of the other WPs of the IPCheM-NextGen project In order to facilitate a harmonized and efficient application of regulatory provisions specific to nanomaterials, the Commission has adopted the recommendation on the definition of a nanomaterial (COM(2011) 696. This is under review by the commission and the revised version, will be published during 2017. This revision is expected to involve minor clarifications in the text and the ways to facilitate its implementation with the main elements (definition only related to size and particle number size distribution) remaining unchanged. Currently the routine implementation of the definition in legislation is still hindered by a lack of accepted, validated methods for the routine classification of materials with respect to the definition. The D-Nano WP will contribute to the resolution of this problem by undertaking a combination of networking and research activities as follows. Firstly, it will contribute to the general implementation of the definition by manufacturers and enforcement bodies by providing them with technical guidance documents based on own experience and use of results obtained in FP7 project NanoDefine (available by 10/2017). Secondly it will seek to establish and coordinate a European network for nanomaterial analysis (ENNA) involving national enforcement bodies or equivalents. Through this network it will collect and disseminate the most advanced knowledge and experience in the physico-chemical characterisation of nanomaterials, organize proficiency tests using test materials from WPK 650 (NanoRM), foster harmonised qualification and implementation of measurement procedures and quality assurance systems in this new measurement area. Thirdly, technical studies will be undertaken to identify broad spectrum sample pre-treatment strategies to reduce the need for case-by-case method development for analysis of nanomaterials in complex matrices. Finally the WP will have an anticipatory aspect by examining analytical methods for the detection of plastic micro and nanoparticles as recommended in a recent statement paper by EFSA (EFSA Journal)	JRC.F.2 Douglas GILLILAND	1.3.3.a	ENV	JRC	GROW D.1 (M. Puolamaa, P. Baricic), ENV A.3 (A. Koba, K. Kilian), SANTE (R.L. Perez Berbejal), RTD (G. Katalagiaranis), EMPL (J. Costa-David)	EMPL GROW RTD SANTE	CEFIC - European Chemical Industry Council (CEFIC) CEN - European Committee for Standardization Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority ICCR - International Collaboration of Cosmetics (ICCR) ISO - International Organization for Standardization (ISO) OECD - Organisation for Economic	01/01/2017 31/12/2019	INS-RS	4	Guidance and support to the implementation of the EC recommended definition of a nanomaterial	After conclusion of the EC's nanomaterial definition review and evaluation of any revisions, full guidance on its practical implementation will be produced. The guidance will be produced in coordination with DG ENV, other relevant DGs and EU agencies, to assist industry and regulators on how to determine whether a material should be regarded as nanomaterial for registration and other purposes. It will build on previous JRC reports and integrate the findings of the FP7 project NanoDefine which ends Nov. 2017. To support this core policy-related work, studies will identify/evaluate/document the most promising fit-for-purpose methods to classify key classes of nano-particles in complex matrices. To ensure rapid method acceptance/dissemination this will be done in collaboration with MS competent authorities and may include organization of competence building activities e.g. training for software tools (NanoDefiner tool) and key instrumental methods recommended by the NanoDefine project	14/12/2018	JRC contributions to policy documents
												5	Micro/nanoplastics as new and emerging contaminants/pollutants in food and the environment	There is increasing evidence that waste plastic in the environment can degrade to form micro and possibly nano-particulates and that these have an, as yet, unquantified potential to enter the food-chain with negative consequences for environment and food safety. Growing concern about microplastics is stimulating research but till now the lack of suitable analytical methods is impeding any evaluation of the impact of smaller nano-size particulates. Furthermore, such micro and nanoplastics in the aquatic environment may spontaneously adsorb and concentrate harmful hydrophobic chemical species such as polyaromatic hydrocarbons which, if ingested by aqueous fauna, can provide a vector to enter the food chain. This evaluation report will consider methods to detect micro/nanoplastics and evaluate the extent to which they can sequester selected environmentally persistent pollutants with a view to assess their potential as a new or emerging contaminant/pollutant in food and the environment.	13/12/2019	JRC technical reports
433 - SciNANO JRC.F.2	6260 - METHODS-NANO Scientific and technical support for the development of the nanomaterial characterisation measurement methods	Scientific and technical support related to the development and international acceptance of chemicals testing methods specifically applicable for nanomaterials, in particular nanomaterial characterisation. For effective and harmonised implementation REACH information requirements make reference to internationally recognised methods, mostly agreed in OECD, some also standardised (CEN, ISO). However many methods remain at the level of agreed operating procedures developed under research programmes or similar. Additional effort is required to identify/prioritise those most useful for regulatory implementation and make them progress to the level of international acceptance. For nanomaterials this goes via sponsorship activities under the chemicals programme of OECD. JRC will actively identify and prioritise candidate methods or guidance documents, promote the list as identified Commission priorities in the Nano Materials Expert Group and foster a common and coherent EU contribution in the OECD. JRC will select a number of methods (depending on resources, feasibility and workload) or guidance documents, with a focus on physicochemical characterisation methods, but without excluding others (e.g. hazard assessment), lead and prepare project proposals for developing them into OECD Test Guidance or guidance documents and progress them until final adoption in OECD and subsequent uptake into the Test Methods Regulation and REACH guidance. JRC will also identify,	JRC.F.2 Juan RIEGO SINTES	1.3.3.a	ENV	ENV	n/a	GROW RTD SANTE	CHEM Industry - Chemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals Agency (ECHA) OECD - Organisation for Economic Co-operation and Development (OECD)	01/09/2017 31/08/2019	CON-AA	1	Annotated methods list & submission templates to the OECD for test Guidelines or Guidance Documents.	JRC will (taking due account of the related ongoing activity in OECD and in collaboration with ENV and ECHA) prepare a list of methods that require action, supported by basic information on each (status/reason for change, availability of protocol, interest of other OECD members, expected effort and timeline, availability of expertise in JRC). The list should be prioritised in accordance with EU regulatory needs. JRC should identify methods that could be led by JRC (with potential timing) and those in which JRC could collaborate, with EU members or internationally. Based on this prioritisation, submission of one or more Standard Project Submission Forms (SPSF) to the OECD Test Guidance Project for one or more test Guideline or Guidance Documents	31/05/2018	JRC technical reports
												2	Test Guidelines or Guidance Documents for the WNT 2018	Test Guidelines or Guidance Documents either as lead or as contributing partner to be sent to the OECD WNT for eventual approval. Subsequently, if adopted, guidelines will be incorporated in the EU Test Methods Regulation.	31/08/2019	JRC contributions to policy documents
703 - NC-Waters JRC.D.2	6700 - ChemPRINT Chemical footprint for non-target compounds	The ChemPRINT project contributes to the Exploratory Research (ER) Programme. It aims at the first development of a methodology for the determination of non-target organic contaminants in environmental matrices such as water, food, soil, air, biota or consumer products using cutting-edge analytical instrumentation. EU legislation is typically enforced based on limit values analysis of samples and the respective guidance makes use of methods for what is commonly called "target analysis, addressing compounds of high or emerging concern. However, target-compound monitoring is often insufficient to assess the quality of complex systems. Indeed, other potentially harmful, non-targeted contaminants might be present in the samples and are not detected in target analysis. To overcome this obstacle ChemPRINT aims also at the development of novel tool digitalising this information in a machine-readable sub-structure, which renders the information searchable in an open-data philosophy.	JRC.D.2 SIMONA TAVAZZI	1.3.3.a	JRC	JRC	n/a	ENV		01/01/2018 31/12/2019	INS-ER	012019	Final technical report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1.	31/12/2019	JRC technical reports
1.3.3.b air quality, pollutant emissions and industrial accident prevention - monitor and model ambient air quality and emissions (for the reduction of transport specific emissions, see key orientations 3.1.1 and 4.1.a); carry out integrated impact assessments of air quality and climate policies and provide tools to make it easier to manage air quality at national, regional and local level; support the implementation of EU air quality policies through harmonisation																
4854 - AIR JRC.C.5	2422 - ACTRIS 2 Aerosols, Clouds, and Trace gases Research Infrastructure Network 2	The project is a follow-up of the FP7 project ACTRIS (2011-2015) in which JRC has been a partner. It aims to coordinate the European ground-based network of stations equipped with advanced in-situ and remote sensing atmospheric instrumentation for measuring aerosols, clouds and short-lived gaseous species. ACTRIS-2 will have the essential role to ensure the production of comparable, quality assured and timely open data to provide a robust scientific evidence for air quality and climate policies' impact.	JRC.C.5 Jean-Philippe PUTAUD	1.3.3.b	ENV	RTD	Marta MUNOZ CUESTA (ENV.C.3), Anna Maria JOHANSSON (RTD B.4)	CLIMA	EMEP - European Monitoring and Evaluation Programme WMO - World Meteorological Organization (WMO)	01/05/2015 30/04/2019	CON-IA	1	Intercomparisons for carbonaceous content of PM	Reports on organisation and performance evaluation related to annual inter-laboratory comparison exercises for the determination of elemental and organic carbon in PM deposited on filters, within the ACTRIS-2 community and beyond. The exact number and dates of intercomparisons will follow from decisions made by the consortium.	30/04/2019	JRC Technical reports
222 - DRMKC JRC.E.1	3690 - Seveso AA 2016-2018 Seveso establishments and accident reporting	This AA supports Member State reporting obligations of the Seveso III Directive under Article 21 in terms of managing operational and customer interface needs and new requirements associated with 1) the Seveso Establishments database (eSPIRS http://minerva.jrc.ec.europa.eu) to facilitate the obligation of Member States to report establishment data to the Commission and 2) the Major Accident Reporting System (eMARS https://emars.jrc.ec.europa.eu) to facilitate collection of Member State reports of major chemical accidents. The eMARS database is also the official database for exchanging chemical accident reports for OECD member countries and Parties to the UNECE Industrial Accidents Convention. It is also promoted by the UNEP Flexible Framework for Chemical Accident Prevention and Preparedness programme. This WP is the same Scientific support to EU Seveso Directive Implementation Institutional (4383) but represents only the competitive resources (same deliverables).	JRC.E.2 Maureen WOOD	1.3.3.b	ENV	ENV	Alexandros Kiriazis	ECHO NEAR SANTE	CC EU - Candidate Countries EU MS EU - Member states EU OECD - Organisation for Economic Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNEP - United Nations Environment Programme (UNEP)	01/06/2016 31/05/2018	CON-AA	3	eSPIRS and eMARS Maintenance/ HelpDesk - 2017-2018	This deliverable consists of final report summarising assistance and support in 2017 to Member States in reporting to eMARS and eSPIRS, including completing data fields properly, quality control and report follow-up, problem-solving on specific cases, advice and support on using the XML bulk import and confidentiality management tools. It also includes response to database queries, maintenance updates, and management supervision of the entire system.	31/05/2018	Scientific information systems and databases
4854 - AIR JRC.C.5	3840 - AQAP Air Quality Assessment and Planning	This Administrative Arrangement (AA) supports the implementation and further development of EU air policies. In particular it aims to support, guide and check air pollution monitoring activities in Europe (through the AQUILA network), and to support, guide and promote the use of air quality modelling (through the FAIRMODE network). It further enhances the use of regional integrated assessment modelling techniques with a particular aim of extending the JRC Integrated Assessment Tool capabilities to allow cities and local administrations to model and design low emission zones and similar access restrictions and rapidly assess the impact upon air quality in their city.	JRC.C.5 Philippe THUNIS	1.3.3.b	ENV	ENV	HENRICH Thomas (ENV.C.3), HOSS Frauke (ENV.C.3), KREGAR Zlatko (ENV.C.3)	DEVCO REGIO	CEN - European Committee for Standardization	01/01/2016 31/12/2018	CON-AA	7	SHERPA-City - 2	SHERPA integrated assessment tool including city scale features and possibilities for the users to test interactively city scale air quality planning options	01/01/2018	Technical systems
												8	Final report	Final report on activities undertaken in the AA	30/09/2018	JRC technical reports
		The work package Analysis of a Changing Atmosphere supports the implementation and development of the EU's Clean Air policy framework. It further explores emission reduction scenarios that are beneficial for air and climate, and as well regarding human health and crop yields. Core activities are related to the JRC mandate to control the quality of air pollution data measured by the Member States as requested by the 2008/50/EC Air Quality Directive. Air Pollution data are observed and reported according to Council Decision 81/462/EEC on the conclusion of the Convention on Long-range Transboundary Air Pollution. Ex-post and scenario evaluations of the effectiveness of emission reduction policies are carried out to answer specific policy questions and anticipate emerging issues. The activities contribute to the evaluation of the Air Quality Directive, which will be launched by DG ENV in 2017, and the envisaged comprehensive air policy review. The work is complemented by activities on development, application, harmonisation and standardisation of modelling, measurement and innovative sensing of air pollution to pave the way to better regulations in the future. A solid foundation for future activities in the field of citizen science is built up by preparing harmonised protocols for the evaluation and benchmarking of sensors against the Data Quality Objectives of indicative measurements set in the Air Quality Directive (2008/50/EC) and in collaboration with strategic European reference centres. The work package also aims at integrating sensor										10	Scientific Publications 2018	Container deliverable for scientific publications in 2018 on model evaluation, performance and scenario analysis and air quality assessments.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												11	Analysis of air pollution data and their radiative forcing in the context of long-range transport	Ex-post analysis of the impact of the policies addressing air quality abatement and climate warming mitigation, focusing on the trend in aerosol direct radiative forcing observed across Europe. This will be based on the analysis of aerosol optical characteristic measurements performed at key locations across Europe, starting from Ispra. This study is related to the assessment of the potential global warming mitigation that could be achieved by following the strategy promoted by the clean air and climate coalition (CCAC) focused on the abatement of short-lived radiative forcers.	30/11/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4854 - AIR JRC.C.5	3842 - IACA Integrated analysis of a changing atmosphere	measurements into public information systems by releasing open source software and platforms ensuring compliance with the requirements of the Inspire Directive (2007/2/EC) out of the box.	JRC.C.5 Annette BOROWIAK	1.3.3.b	ENV	JRC	HENRICH Thomas (ENV.C.3), MUNOZ CUESTA Maria (ENV.C.3)	CLIMA GROW	Weights and Measures CEN - European Committee for Standardization EEA - European Environment Agency EURAMET - European Organisation of Metrology (EURAMET) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2016 31/12/2020	INS-RS	12	Performance evaluation of measurement capabilities	The JRC has the legal obligation to organise quality assurance programmes for the Member States' National Air Quality Reference Laboratories. In technical reports, divided by pollutant categories, the capabilities of the Member States will be analysed and discussed.	30/11/2019	JRC technical reports
												3	Evaluation of current data quality criteria	The 2008/50/EC Air Quality Directive will be evaluated by the European Commission starting in 2017. JRC will contribute to this evaluation by analysing the quality assurance programmes of the past years (including 2017) on air pollutant measurement capabilities of the Member States. The Data Quality Objectives for measurements of gaseous and particulate air pollution of the 2008/50/EC Air quality Directive will be critically reviewed.	31/10/2018	JRC technical reports
												5	Cost-benefit analysis of mitigation scenarios	The web-based Fast Scenario Screening Tool FASST tool will be applied for cost-benefit analysis of mitigation scenarios for climate and air quality in a European and global perspective specifically in the framework of the UNECE Convention on Long-range Transboundary Air Pollution, the Intergovernmental Panel on Climate Change (IPCC) and in the context of the Paris agreement. Economic Assessment of Air Quality Policy will be carried out in collaboration with JRC.C.6. Links with integrated assessment tools for policy support will be explored.	01/12/2018	Scientific information systems and databases
												7	Potential of new technologies in air assessment	The use of sensor technology for an easier, more cost-efficient and better spatial coverage assessment of air pollutants will be examined and recommendations for a future use in a legal and a citizen science context will be given. This deliverable contributes to the future evaluation of Air Quality Policy.	30/11/2018	JRC technical reports
												8	Ex-post analysis of transport emission standards	An ex-post analysis of concentration trends in regulated and emerging pollutants measured at the air pollution observatory in Ispra will be carried out. Data are submitted under the UNECE Convention on long range transboundary air pollution. The analysis will focus on the impacts of emission standards for vehicles and study possible trends of emerging issues due to introduction of new technologies. The Ispra case study will be used as benchmark and the extension to the European scale will be assessed.	30/11/2018	JRC technical reports
4855 - GHG-MoVe JRC.C.5	3844 - AMITO2 Atmospheric Methane and its Impacts on Tropospheric Ozone, human health and the environment	The activities leverage the integrated synergy of H.2's three main assets: emissions monitoring, air quality (AQ) modelling, and AQ impact analysis. We also envisage collaboration with H04 (Monitoring Agricultural Resources) on matters pertaining to the effects of air pollutants, specifically ozone, on vegetation and crops. The AA supports work carried out in the Task Force on Hemispheric Transport of Air Pollutants (TF HTAP). The AA provides support to DG ENV on mitigation options for CH4 and other air pollutants in the northern hemisphere, and the benefits for reducing tropospheric ozone and its impacts on agricultural crops, human health and climate. Models, databases and AQ model analyses of impacts on a variety of scales will provide the scientific basis for including methane as an air pollutant in new policies.	JRC.C.5 Rita VAN DINGENEN	1.3.3.b	ENV	ENV	André Zuber (ENV.C.3), F. Hoss (ENV)	AGRI CLIMA	EEAS - European External Action Service EMEP - European Monitoring and Evaluation Programme UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2016 30/06/2018	CON-AA	201801	upgrade of the TM5-FASST webtool	Upgrade of the TM5-FASST with new source receptor relations (based on the EMEP calculations) and with extra models for N and S deposition in ecosystems and stomatal flux approach for ozone effects on crops. (delayed in 2017 WP)	15/06/2018	Validated methods, Reference methods and measurements
222 - DRMKC JRC.E.1	4383 - EU-CAPP Scientific support to EU Seveso Directive Implementation	This project is aimed to support Seveso Directive implementation. It has three main elements: 1) fulfilling the Lessons Learned obligation (Art. 21). 2) upgrading the eMARS reporting tool to increase the value of reporting lessons learned from major chemical accidents for scientific use and as a technical resource for all stakeholders (in particular to EU and OECD competent authorities who supply the data). eMARS fulfils the Commission obligation to establish a database for mandatory reporting of major chemical accidents by EU Member States under Seveso Article 21. eMARS is also the official reporting system for exchanging lessons learned from chemical accidents between OECD countries. https://emars.jrc.ec.europa.eu Maintenance and daily operations of the eMARS system are funded under an AA between JRC and DG ENV (WP 3680). 3) facilitating exchange and dissemination of good practice through development of Seveso inspection tools in collaboration with Member States. This element also provides significant support to the JRC's work in Seveso capacity building in WPs 4382 (Chemical accident prevention and preparedness products and services - general scientific support, including EU but also the global community), 3672 and 4388 (DG ECHO AAs on Seveso Capacity Building in Neighbour Countries). This WPK also supports WPK 437. This work package also supports the JRC Disaster Risk Knowledge Management Centre.	JRC.E.2 Maureen WOOD	1.3.3.b	ENV	JRC	A. Kiriazis (ENV), Ian Clark (ECHO)	DEVCO ECHO GROW HOME NEAR	CC EU - Candidate Countries EU MS EU - Member states EU OECD - Organisation for Economic Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNEP - United Nations Environment Programme (UNEP)	01/01/2016 18/12/2020	INS-RS	02	Chemical Accident Analysis Emerging Trends - 2018	In fulfilment of the Seveso Article 21, MAHB will produce 1 Lessons Learned Bulletin (June and December) containing analytical briefs of lessons learned from chemical accidents related to specific thematic topics (selected based on recent accident trends).	21/12/2018	JRC technical reports
												03	Chemical Accident Analysis Emerging Trends-2019-20	In fulfilment of the Seveso Article 21, MAHB will produce 2 Lessons Learned Bulletins (June and December) containing analytical briefs of lessons learned from chemical accidents related to specific thematic topics. The topics are chosen based on recent trends, and accidents with input from current projects and collaborations with international partners and Member States.	22/12/2020	JRC technical reports
												04	eMARS-XML import and validation tool - 2017	Development of XML Import functionality and Validation Tool within eMARS (for reporting major chemical accident lessons learned).	30/11/2018	Scientific information systems and databases
												06	eMARS-Training, Beta-test, and Feedback -2018	Training of eMARS EU/EEA/OECD competent authority users on XML import and invalidation tool. Incorporation of feedback in the development of a continuously improving web application for reporting major chemical accident lessons learned.	30/11/2018	Scientific information systems and databases
												07	Modernisation-eMARS Accident Reporting - 2019	This work consists of the scientific input to the design of eMARS to propose re-design options presented to EU and OECD Member States for reporting major chemical accident lessons learned.	31/05/2019	Scientific information systems and databases
												08	Modernisation-eMARS Accident Reporting - 2020	This work consists of Phase 1 of the scientific input to finalisation and implementation of proposals for re-design of the eMARS reporting tool (for reporting major chemical accident lessons learned) based on feedback from EU/OECD competent authorities and DG-ENV	15/12/2020	Scientific information systems and databases
												11	INSPIRE for SEVESO - 2018	This deliverable is a progress report of INSPIRE compliance activities carried out in 2018, taking stock of MAHB's 2016 strategy paper, the with close collaboration with JRC INSPIRE and DG ENV associated with WPK 1052.	14/12/2018	Scientific information systems and databases
												17	Risk management/enforcement good practice-2018	Collaborations with EU Member States and industry on good practice documents for inspectors and industry on good practice for implementing and enforcing effective risk management on Seveso sites. This element includes: -a workshop for Seveso inspectors on management of safety instrumented systems hosted by Austria, a good practice document on risk management of explosive sites, dissemination in useful formats stakeholders.	14/12/2018	JRC technical reports
18	Risk management/enforcement practices-2019-20	Collaborations with EU Member States and industry on good practice documents for inspectors and industry on good practice for implementing and enforcing effective risk management on Seveso sites. This element includes: -a workshop for Seveso inspectors on information to the public (Croatia) (2019) and in Slovenia (2020), a good practice document from the warehouse/LPG workshop, as well as continuing to improve knowledge dissemination in useful formats stakeholders.	18/12/2020	JRC technical reports												
4854 - AIR JRC.C.5	5103 - ACTRIS PPP Aerosol, Clouds, and Trace gases (ACTRIS) - Preparatory Phase Project	ACTRIS is the European Research Infrastructure for the observation of Aerosol, Clouds, and Trace gases. ACTRIS is composed of observing stations, exploratory platforms, instruments calibration centres, and a data centre. ACTRIS serves a vast community working on models and forecast systems by offering high quality data for atmospheric gases, clouds, and trace gases. As a follow up of the FP7 and H2020 ACTRIS projects, the H2020 ACTRIS preparatory-phase project will start in 2017 in view of preparing the ACTRIS research infrastructure as a future European Strategy Forum on Research Infrastructures (ESFRI) project. The JRC's participation in the project application is important due to the benchmarking function of the Ispra atmospheric research station at the European scale and for European policies, and to the essential service the JRC has been providing in ACTRIS for the calibration of carbonaceous measurements.	JRC.C.5 Jean-Philippe PUTAUD	1.3.3.b	ENV	RTD	Thomas Henrichs			01/11/2017 31/10/2020	CON-IA	1	Application for European Research Infrastructure C	The necessary preparatory procedures and documents for an application of ACTRIS to ERIC will be prepared and submitted	30/04/2019	Scientific information systems and databases
222 - DRMKC JRC.E.1	6261 - Seveso AA 2018-2020 Seveso accident data	In this AA, the JRC gives technical and scientific support specifically in fulfilment of Commission obligations in Article 21 to ensure accurate data and information are provided in line with the purpose and uses of data in the Major Accident Reporting System (eMARS https://emars.jrc.ec.europa.eu) containing Member State reports of major chemical accidents. The eMARS database is also the official database for exchanging chemical accident reports for OECD member countries and Parties to the UNECE Industrial Accidents Convention. It is also promoted by the UNEP Flexible Framework for Chemical Accident Prevention and Preparedness programme (supported by WP 4382).	JRC.E.2 Maureen WOOD	1.3.3.b	ENV	ENV	n/a	ECHO	CHEM Industry - Chemicals Industry Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ENV EU - Environmental authorities of the Member States and	10/06/2018 09/06/2020	CON-AA	01	Seveso accident data	This deliverable consists of support to Member States in analysing and inputting data accurately to eMARS, including quality control and report follow-up, problem-solving on specific cases, and facilitating translation of reports into English for publication. It also includes responses to database queries and maintenance of the underlying IT programme. The deliverable will be a report summarising the support actions undertaken over the life of the AA.	09/06/2020	JRC technical reports
4854 - AIR JRC.C.5	6600 - AQsens PLANNED: Integrating smart sensors and modelling for Air Quality monitoring in a city	This Administrative Arrangement (AA) supports the implementation and further development of EU air policies. The aim of this project is the development and on-line implementation of calibration procedures for the individual air quality sensors. Also a unique hybrid approach of combining high-resolution modelling with high-resolution monitoring shall be demonstrated to improve the quality procedures and eventually increase the reliability of the network output data from sensors and sensor systems.	JRC.C.5 Annette BOROWIAK	1.3.3.b	ENV	ENV	n/a	CLIMA DEVCO REGIO		01/01/2018 31/12/2020	CON-AA	0	Roadmap of study	Definition of: online calibration, sensor types, laboratory and field tests, city contracts.	30/11/2018	JRC technical reports
												1	Report on the performance of sensors.	Air pollutants to be considered are particulate matter (PM), nitrogen dioxide (NO2), carbon monoxide (CO) and black carbon (BC).	01/07/2019	JRC technical reports
												2	Report on on-the-fly-calibration of sensors in air quality assessment	The performance of sensors to measure air pollution strongly depends on the possibility to frequently re-adjust and calibrate sensors. The possibility, implementation, advantages and disadvantages of an on-the-fly-calibration will be discussed.	30/01/2020	JRC technical reports
												3	Final report	Final report on activities undertaken in the AA.	30/11/2020	JRC technical reports
1.4. Maritime affairs, fisheries and aquaculture																
1.4.a Implementation of the common fisheries policy - develop and apply biological, economic, social, spatial and genetic/genomic approaches to sustainable and competitive aquaculture and fisheries, in the EU and worldwide.																
248 - FABE JRC.D.2	301 - BluEcoFa Blue Economy from a Fisheries and Aquaculture Perspective	In this work package, the JRC pursues research activities to support the Blue Growth long-term strategy (COM(2012) 494) and the Blue Economy, with a focus on assessing the potential for economic performance in the EU fisheries and aquaculture sector. Work items include the landing obligation and bio-economic modelling and analysis under the remit of the Common Fisheries Policy (EU) 1380/2013. This work package is strongly linked and complementary to the AA FishMan (WPK3886). Moreover, in collaboration with DG MARE, within limits set by available resources, the Blue Economy will be further explored and analysed including other sectors but fisheries and aquaculture (See also ARES (2017)2465914).	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE	JRC	Ruth-Elisa ROLLER VRJENHOEK; DG MARE A.3		- Food and Agricultural Organisation GFCM - General Fisheries Commission for the Mediterranean ICES - International Council for the Exploration of the Sea	01/01/2014 31/12/2019	INS-RS	248301181	Fisheries and Aquaculture Economics	The JRC will contribute to the economic performance assessment of fisheries related sectors such as fleets, aquaculture and the fish processing sector for 2017. This activity supports the provision of scientific advice foreseen under the Common Fisheries Policy, and also sustains the Blue Economy and the implementation of the European Maritime and Fisheries Fund (EMFF).	30/11/2018	Science-for-policy reports
												248301184	The Blue Economy: An analysis	Together with DG MARE, the JRC will analyse the economic status, potential and trends of selected sectors that are part of the Blue Economy.	17/12/2018	Books and monographs with JRC editorship

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												248301191	Fisheries and Aquaculture Economics	The JRC will contribute to the economic performance assessment of fisheries related sectors such as fleets, aquaculture and the fish processing sector for 2017. This activity supports the provision of scientific advice foreseen under the Common Fisheries Policy, and also sustains the Blue Economy and the implementation of the European Maritime and Fisheries Fund (EMFF).	30/11/2019	Science-for-policy reports
248 - FABE JRC.D.2	302 - SuFIA Sustainable Fisheries and Aquaculture	The sustainable exploitation of marine fish constitutes a major challenge, and is the only way to ensure also economic profitability and resilience of the fisheries and aquaculture industry in the long-term. Moving towards a sustainable and profitable exploitation of marine renewable living resources depends on the provision of sound scientific advice, as stipulated in the basic regulation underpinning the Common Fisheries Policy (EU) 1380/2013. The JRC, having a clear mandate and a successful record of supporting the CFP scientific advice provision process, will focus on new approaches for the provision of scientific advice to fisheries management and policy making and contribute to the international scientific progress in this field, as well as to training and capacity building. These activities are closely linked and complementary to Work Package 301 BluEcoFa and the Administrative Arrangement FishMan between the JRC and DG MARE. Moreover this work package will accommodate, provided sufficient resources are available, the new additional request for analytical support to Art.50 TEU (Note from MARE Director General Joao Aguiar Machado to JRC Director General Vladimir Sucha ("Limited-Internal"; Brussels, 24 November 2016): Fisheries - Request for Analysis.).	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE	JRC	Ruth-Elisa ROLLER VRIJENHOEK; Valerie LAINE	ENV	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) EFCA - European Fisheries Control Agency GFCM - General Fisheries Commission for the Mediterranean ICES - International Council for the Exploration of the Sea STECF - Scientific, Technical, and Economic Committee for Fisheries	01/01/2014 31/12/2019	INS-RS	248302181	Scientific advice underpinning sustainable fisheries and aquaculture under the remit of the Common Fisheries Policy	As required under the remit of the Common Fisheries Policy (CFP; (EU) 1380/2013), the JRC, together with the Scientific, Technical and Economic Committee for Fisheries (STECF), will provide and review scientific advice underpinning the objectives of the CFP. This also comprises the support to the European Commission in the context of Art. 50 TEU: In 2016 and 2017, the JRC was requested by DG MARE to support the European Commission and relevant Member States in the preparation for the expected negotiations linked to Art. 50 TEU, which turned out to be a challenging and extensive exercise. With Art. 50 TEU having been triggered in 2017 it is to be expected that further similar support will be requested to the JRC.	14/12/2018	Science-for-policy reports
												248302182	Monitoring the Common Fisheries Policy	Article 50 of the Common Fisheries Policy (CFP; Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013) stipulates: "The Commission shall report annually to the European Parliament and to the Council on the progress on achieving maximum sustainable yield and on the situation of fish stocks, as early as possible following the adoption of the yearly Council Regulation fixing the fishing opportunities available in Union waters and, in certain non-Union waters, to Union vessels. The JRC will carry out the analysis and needed to report on progress in achieving the Maximum Sustainable Yield objectives in line with the Common Fisheries Policy.	31/05/2018	Science-for-policy reports
												248302191	Monitoring the Common Fisheries Policy	Article 50 of the Common Fisheries Policy (CFP; Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013) stipulates: "The Commission shall report annually to the European Parliament and to the Council on the progress on achieving maximum sustainable yield and on the situation of fish stocks, as early as possible following the adoption of the yearly Council Regulation fixing the fishing opportunities available in Union waters and, in certain non-Union waters, to Union vessels. The JRC will carry out the analysis and needed to report on progress in achieving the Maximum Sustainable Yield objectives in line with the Common Fisheries Policy.	15/05/2019	Science-for-policy reports
248 - FABE JRC.D.2	3886 - FishMan 2016_18 Managing Scientific Advice and Monitoring Fisheries Data (2016 - 2018)	Under the remit of this Administrative Arrangement, the JRC produces scientific advice in support of the Common Fisheries Policy. Core activities include administrative and scientific support to the Scientific, Technical and Economic Committee for Fisheries, support to the Data Collection Framework ((EC) 199/2008) and the development of the DCF to future data collection multi-annual (DC-MAP) for 2014-2020, but also response to ad-hoc requests by DG MARE. The work and research carried out under this AA is largely complemented by institutional research activities under the scope and remit of the project AquaFish.	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE	MARE	Ruth-Elisa ROLLER VRIJENHOEK			13/09/2016 12/02/2018	CON-AA	2483399317	AA FishMan Annual Progress Report	At the end of the activity period covered by this AA, the JRC delivers the annual progress report to DG MARE outlining and summarizing pursued activities and outcomes covered by the AA remit, but also providing additional information of other projects and activities carried out.	12/02/2018	JRC technical reports
												2483886171	STECF Plenary Reports	The JRC will be a key contributor to the Plenary Meeting Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF), the major scientific advisory body to the European Commission in matters pertaining the Common Fisheries Policy (CFP), as stipulated in the basic CFP regulation (EU) 1380/2013.	12/02/2018	Science-for-policy reports
248 - FABE JRC.D.2	4886 - FishMan 2018_19 Managing Scientific Advice and Monitoring Fisheries Data (2018 - 2019)	Under the remit of this Administrative Arrangement, the JRC produces scientific advice in support of the Common Fisheries Policy. Core activities include administrative and scientific support to the Scientific, Technical and Economic Committee for Fisheries, support to the Data Collection Framework ((EC) 199/2008) and the implementation of the DCF to future data collection multi-annual (DC-MAP) for 2014-2020, but also response to ad-hoc requests by DG MARE. The work and research carried out under this AA is largely complemented by institutional research activities under the scope and remit of the project AquaFish.	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE	MARE	Ruth-Elisa ROLLER VRIJENHOEK			01/04/2018 31/03/2019	CON-AA	2483399318	AA FishMan Annual Progress Report	At the end of the activity period covered by this AA, the JRC delivers the annual progress report to DG MARE outlining and summarizing pursued activities and outcomes covered by the AA remit, but also providing additional information of other projects and activities carried out.	28/02/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
												2483399318	STECF Plenary Reports	The JRC will be a key contributor to the Plenary Meeting Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF), the major scientific advisory body to the European Commission in matters pertaining the Common Fisheries Policy (CFP), as stipulated in the basic CFP regulation (EU) 1380/2013.	15/12/2018	Science-for-policy reports
												2483399318	The EU Data Collection Framework	Under the remit of the EU Fisheries and Aquaculture Data Collection Framework (EC) 199/2008, member states are obliged to submit fisheries and Aquaculture data on fishery dynamics and economics to the European Commission. The DCF is currently under reform. DCF data is hosted, processed and also analyzed by the JRC. The JRC will contribute with its expertise and capacity to a series of reports of the Scientific, Technical and Economic Committee for Fisheries on the DCF status and reform process.	15/12/2018	Science-for-policy reports
												2483399318	Monitoring the CFP Performance	Monitoring the Common Fisheries Policy Performance Article 50 of the Common Fisheries Policy (CFP; Regulation (EU) No 1380/2013) stipulates that the European Commission shall report annually to the European parliament and Council on status and progress of certain provisions laid down in the basic CFP regulation. To this end the Commission has requested the STECF to review and advise on suitable metrics and indicators. the JRC will contribute to this process.	15/12/2018	Science-for-policy reports
248 - FABE JRC.D.2	6106 - PL: PANDORA PAradigm for New Dynamic Ocean Resource Assessment and exploitations	Currently a lack of novel methods and approaches prevails that enhances the assessment of the status of stocks and enables management strategy evaluation frameworks underpinning the long-term sustainable and profitable exploitation of stocks. PANDORA will develop and utilize improved stock assessment models to estimate fishing exploitation rates for maximum sustainable and/or economic yields and associated ecological and economic trade-offs in multi-species, multi-fleet contexts. It will also develop training modules and better integrate fishers, fisheries scientists and managers, and compile existing and new knowledge on processes needed to advance stock assessment, implements improved methods to better forecast the strength of marine fish stocks. This will enable the provision of robust advice on the most sustainable yet profitable short-, medium- and long-term management strategies for fish stocks and fishing fleets. Applied across Europe's most valuable fish stocks and fishing fleets. PANDORA will co-create a tool box with fishers, fisheries scientists and managers to promote sustainable Blue Growth of European fisheries.	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE RTD	RTD	n/a			01/01/2018 31/12/2021	CON-IA	2486106181	Novel methods and approaches for the assessment of the status of stocks and management strategy evaluation frameworks	Currently a lack of novel methods and approaches prevails that enhances the assessment of the status of stocks and enables management strategy (MSE) evaluation frameworks underpinning the long-term sustainable and profitable exploitation of stocks. PANDORA will develop and utilize improved stock assessment models to estimate fishing exploitation rates for maximum sustainable and/or economic yields and associated ecological and economic trade-offs in multi-species, multi-fleet contexts. A first review will reflect on actual needs and how to best address those with emphasis on the JRC fisheries modelling and MSE toolbox.	17/12/2018	JRC technical reports
248 - FABE JRC.D.2	6436 - FishMan 2019_20 Managing Scientific Advice and Monitoring Fisheries Data (2019 - 2020)	Under the remit of this Administrative Arrangement, the JRC produces scientific advice in support of the Common Fisheries Policy. Core activities include administrative and scientific support to the Scientific, Technical and Economic Committee for Fisheries, support to the Data Collection Framework ((EC) 199/2008) and the development of the DCF to future data collection multi-annual (DC-MAP) for 2014-2020, but also response to ad-hoc requests by DG MARE. The work and research carried out under this AA is largely complemented by institutional research activities under the scope and remit of the project FABE.	JRC.D.2 Jann MARTINSOHN	1.4.a	MARE	MARE	n/a	ENV	GFCM - General Fisheries Commission for the Mediterranean ICES - International Council for the Exploration of the Sea	01/04/2019 31/03/2020	CON-AA	2486436191	Scientific advice to the Common Fisheries Policy: Resource management and socio-economics of fisheries and aquaculture	A comprehensive documentation of JRC activities executed under the remit of the Administrative Arrangement FishMan with MARE will be produced.	31/03/2020	Science-for-policy reports
1.4.b maritime security - improve EU maritime surveillance systems, enhance their interoperability and provide support to implement selected actions under the EU maritime security strategy (work on security is covered under key orientations in Section 7.2).																
4973 - BOSS JRC.E.5	1901 - CISEPOV CISE Pre-Operational Validation	The CISE (Common Information Sharing Environment) for the Maritime Domain will enter into the final phase (roll-out) in 2018, according to CISE's guiding principles established in Commission Communication (COM(2009)538 final) of 15.10.2009 and further defined in Commission Communication (COM(2014) 451 final) of 08.07.2014. The JRC has supported DG MARE in the development of CISE from the very early stages. Currently, this support is materialised under the AA 33537, which is providing funding for this WP and will expire on August, 31st 2018.	JRC.E.5 DAVID BERGER	1.4.b	MARE	MARE	Christos ECONOMOU		EDA - European Defense Agency EFCA - European Fisheries Control Agency EMSA - European Maritime Safety Agency EUROPOL - EUROPOL EUSC - European Union Satellite	03/12/2014 28/02/2019	CON-AA	10	Activity Reports (2018)	This deliverable includes the different activities linked to the chairing and managing of the Technical Advisory Group (TAG) and to the scientific and technical contributions of JRC to the PoV project.	31/08/2018	JRC technical reports
												11	Implementation of CISE components (2018)	This deliverable includes the development of a test bed platform for CISE and the associated commissioning plan. It will also include the activities linked to the necessary adaptation of CISE components produced by the PoV and the consolidation of CISE technical documentation produced by the PoV.	31/08/2018	Scientific information systems and databases
4973 - BOSS JRC.E.5	5040 - CISERO CISE Roll Out	The CISE (Common Information Sharing Environment) for the Maritime Domain will enter into the final phase (roll-out) in 2018, according to CISE's guiding principles established in Commission Communication (COM(2009)538 final) of 15.10.2009 and further defined in Commission Communication (COM(2014) 451 final) of 08.07.2014. The JRC has supported DG MARE in the development of CISE from the very early stages. Currently, this support is materialised under the AA 33537, which will expire on August, 31st 2018 and will be renewed to allow the finalisation of the current activities and to bridge the gap between the end of the EUCISE Pre-Operational Validation phase (FP7 EUCISE2020) and the start of the CISE roll-out (CISERO).	JRC.E.5 Franco OLIVERI	1.4.b	MARE	MARE	Christos ECONOMOU		EDA - European Defense Agency EFCA - European Fisheries Control Agency EMSA - European Maritime Safety Agency EUROPOL - EUROPOL EUSC - European Union Satellite MS EU - Member states EU	03/09/2018 31/12/2019	CON-AA	1	Activity report with the TAG	This deliverable describes the different activities linked to the chairing and managing of the TAG (Technical Advisory Group for Maritime Surveillance) as well as the scientific and technical contributions to it by JRC.	20/12/2019	JRC technical reports
												2	Implementation of the CISE Test Bed (2019)	This deliverable is the test bed platform for CISE (to take into account the lessons learned from the FP7 EUCISE2020 verification phase) and will include the definition of suitable test plans for interoperability verification. Possibly, it will also include the execution of some pilot tests with relevant authorities or EU Agencies.	20/12/2019	Technical systems
												3	Finalisation and maintenance of CISE components	This deliverable includes the refinement and maintenance of the CISE Data and Service model and the activities related to the launch of its standardisation. It also includes the activities linked to the adaptation of CISE components and the consolidation of CISE technical documentation produced by the CISE PoV, taking into account the parallel development	20/12/2019	JRC technical reports
4973 - BOSS JRC.E.5	6541 - MARHOME 3 MARHOME 3	JRC support to EUROSUR and in the R&D sector for border surveillance	JRC.E.5 Guido FERRARO DI	1.4.b	HOME	HOME	n/a			01/07/2017 31/12/2019	CON-AA	MARHOME3 reps	Six monthly reports	Description of the work performed in the framework of the AA MARHOME 3 and to be reported to the partner.	31/12/2019	JRC technical reports
1.5. Health and food safety																
1.5.1. Health																
1.5.1.a healthcare, health information, and promotion of a healthier society - in the field of standardisation, harmonisation, and improvement of healthcare and health information in the EU, the initial focus is on cancer and rare diseases. This includes the coordination/development of European disease registries, the launch of an innovative and comprehensive quality-assured healthcare pathway (starting with breast cancer, followed by colorectal cancer),																

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7456 - HQHDI JRC.F.1	647 - RD Platform Development of a European Platform for Rare Diseases	The European Platform for Rare Diseases (RD) is being developed (1) to cope with the enormous fragmentation of data contained in over 600 patient registries across Europe (developed and maintained by national and regional entities, research institutes, hospitals, patient organisations, pharmaceutical companies) and other data sources. In addition, (2) the Platform functions as a sustainable data repository, the central databases and the European-level coordination activities of the surveillance networks EUROCAT (European Surveillance of Congenital Anomalies) and SCPE (Surveillance of Cerebral Palsy in Europe) were transferred to the JRC and are part of the Platform. The Platform (1) will have a central role in providing interoperability for RD data sharing. It will promote	JRC.F.1 SIMONA MARTIN	1.5.1.a	SANTE	SANTE	DG SANTE.C.1 - Jaroslaw WALIGORA - Jaroslaw.WALIGORA@ec.europa.eu	RTD	MIN Health EU+ - European Ministries of Health (Member States and Associated Countries)	11/12/2013 31/03/2018	CON-AA	81	Training course for rare diseases registries	A training course will be organised for supporting existing registries and for establishing new registries	31/03/2018	Training
222 - DRMKC JRC.E.1	3353 - MHRA for DRMKC Multi-hazard Risk Assessment for Disaster Risk Management Knowledge Centre	The WPK will, in collaboration with other JRC projects involved in DRM and DRR, contribute to an improved science-policy interface through activities in the field of Multi-hazard Risk Assessment, Risk reduction, Risk Management Capabilities, and Risk for Human Losses. A series of technical reports and guidelines will provide a step forward towards a science-based methodology for National Multi-hazard risk assessments that will provide guidance and dedicated tools to further strengthen Disaster Risk Management National Capabilities. The global and EU legal/policy context will serve as basis for better orienting the proposals provided. One of the objectives of this WPK is to establish the basis towards a common consolidated methodology and understanding of the risk, which would lead to easily comparable results, facilitating in this way the prioritization of funding programs that would revert on effective mitigation and preventive actions. Fast developing crises of social (conflict) or biological (pandemics and disease outbreaks) origin need collaborative, expert-sourced risk assessment (RA) to support informed decision-making by European institutions (SANTE, EEAS, FRONTEX, Council) and international organisations (African Union, World Health Organisation). The DRMKC will support the bringing together of media information, structural indicator data and geographic data, as well as collaborative IT technology, to provide appropriate contextual information for a truly actionable RA. The WPK focuses on the Science Policy Interface needed to convey complex information to domain analysts. The WPK will focus firstly on the development of contextual information for Public Health and CBRN response on through the partnership with the Global Health Security Initiative (GHSI). Results will be of the interest of SANTE, the World Health Organisation and DEVCO.	JRC.E.1 Brian DOHERTY	1.5.1.a	SANTE	JRC	HEUBEL, SANTE C3	CLIMA ENV GROW HOME RTD	Civ Protection EU - Civil Protection Services in Member States MS EU - Member States EU UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR)	02/01/2017 28/12/2019	INS-RS	201802	Improvements in Multi-Hazard Risk Assessment	Reports and systems contributing to improvements in Multi-Hazard Risk Assessment methodology and Practice. Including - Report containing Analysis of sources and gaps in provision of contextual information for Rapid Risk Assessment of Global Health Threats. - INFORM scientific and technical improvements	15/11/2018	JRC technical reports
												201803	Risk Data Hub	Risk Data Hub for the Disaster Risk Management Knowledge Centre (DRMKC) - The Risk Data Hub will be central reference point for Disaster Risk Data in Europe at local, regional, national and European Level. The system will provide Geographic Information related to hazard, exposure, vulnerability and risk data in the form of geographic products which are easy to search and reference. Methodology and techniques for calculating risk will also be made available through the application.	15/12/2018	Scientific information systems and databases
												201901	Multi-Hazard Risk Assessment - Methodologies for N	A peer-reviewed article presenting the results of research into science-based multi-hazard risk assessment at the level of EU member states. The results of this research will provide important input to the recommendations to member states for harmonized methodology referred to in further policy-based deliverables.	22/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201902	Towards EU harmonized methodology and tools for RA	Science for policy report to provide a step forward towards a science-based methodology for National Multi-hazard risk assessments. The global and EU legal/policy context will serve as basis for better orienting the proposals provided. The main objective of this deliverable is to establish the basis of a common consolidated methodology and understanding of the of the risk, which would lead to easily comparable results to support prioritization of funding programs on effective prevention actions	13/12/2018	Science-for-policy reports
7456 - HQHDI JRC.F.1	4857 - HARCAS II Cancer Information Systems and Breast Cancer Services in Europe	The objective of the WPK is to tackle some of the fundamental elements impeding the progress to limit the cancer burden in the EU and ensure better outcomes for patients suffering from cancer and rare diseases. In order to tackle disparities in the EU regarding outcomes of breast-cancer patients the EC, partly via this WPK, is developing a pan European quality-assurance (QA) scheme. The QA scheme will be underpinned by a set of evidence-based guidelines for the screening and diagnosis pathways. The work will be coordinated by JRC with the close liaison of DG SANTE and with the support of working groups of experts and patients. Access to accurate and relevant indicators is a further critical element to support the development of healthcare policies. In order to allow comparisons of these indicators, the underlying data must adhere to harmonised protocols. The agreement of metadata standards and harmonised data protocols in liaison with the European cancer registries and cancer-epidemiology stakeholders therefore forms an important focus of this WPK. The system being developed will provide the definitive European cancer registry database for cancer epidemiological research studies and will	JRC.F.1 Donata LERDA	1.5.1.a	SANTE	SANTE	Paolo GUGLIEMMETTI (Paolo Guglielmetti@ec.europa.eu), Antoni MONTSERRAT (Antoni.Montserrat@ec.europa.eu)	ESTAT GROW RTD	IARC - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER MIN Health EU+ - European Ministries of Health (Member States and Associated Countries)	01/01/2017 31/12/2018	CON-AA	CIP42017	Harmonised protocol 4 cancer registry data quality	Report on the process of agreeing quality criteria and updating of the 2014 proposal into an agreed and accepted protocol	31/12/2018	JRC technical reports
213 - TMA CC JRC.I.3	5862 - EFSA_PLANTS2016 MEDISYS FOR PLANT HEALTH 2016	The general objective of the SLA is to further develop the media monitoring system MediSys for the early identification, monitoring and reporting of signals on existing and emerging plant health threats. There is an ongoing 7 year MoU (No 31022) signed on 10 November 2008 with EFSA. Over the last 5 years, EFSA has become one of the main users of JRC's event-based surveillance system MediSys. This SLA will thus enhance our capacity for event-based surveillance and crisis management on the needs of the EU in health crisis management. An important deliverable will be the monitoring of plant health threats in scientific literature, categorized by threat and/or by crop. Collaboration between EFSA, EU member states and JRC will be further strengthened.	JRC.I.3 Jens LINGE	1.5.1.a	SANTE	EA	n/a			01/01/2017 31/12/2019	CON-TW	2017001	EFSA event-based surveillance	Improved Internet biosurveillance systems used for Plant Health and Food/Feed Safety monitoring at EFSA enabling EFSA to fulfil its responsibilities related to the identification of emerging risks in both news and scientific literature and providing S&T advice related to crisis management.	08/12/2019	Technical systems
222 - DRMKC JRC.E.1	6300 - EIOS2018 Epidemic Intelligence from Open Sources (2018)	The Epidemic Intelligence from Open Sources (EIOS) platform combines into a single technical implementation the Hazard Detection and Risk Assessment System (HDRAS) of the World Health Organisation and the Early Alerting and Response (EAR) system of the Global Health Security Initiative (GHSI). The JRC has collaborated over 10 years with the European and international health monitoring organisations to conceive and develop platforms for global disease outbreak surveillance and risk assessment. JRC designed and built both the EAR and HDRAS systems. WHO and GHSI expressed strong interest for merging the systems into a single improved EIOS system. JRC is the only institution which can combine the media monitoring and risk assessment capability necessary for the successful continuance of the project. The combination of the two existing successful global systems and the further development of EIOS has the potential to create the pre-eminent global early warning system for health threats. Funded entirely by the WHO, this project puts the JRC at the forefront of global health security. It will also directly contribute to the surveillance capacity of the European Disease Control Centre (ECDC), and help bring the health perspective in the Sendai Framework for Disaster Risk Reduction. This fits extremely well into the overall objectives of the DRMKC.	JRC.E.1 Brian DOHERTY	1.5.1.a	SANTE	n/a	n/a		GHSAG - Global Health Security Action Group WHO - World Health Organization	02/06/2018 01/06/2019	CON-TW					
7456 - HQHDI JRC.F.1	6340 - HQHDI-TOOLS Health Care Quality, Health Data and Information - tools	This WPK comprises 4 activities: 1) HEALTHCARE QUALITY - In 2018, this activity will focus on evidence-based recommendations for breast cancer screening and diagnosis and the piloting of the quality assurance (QA) scheme for breast cancer services. Based on the European Commission Initiative on Breast Cancer (ECIBC) model, a parallel project on colorectal cancer (ECICC) will be initiated, producing: i) evidence-based guidelines for colorectal cancer screening and diagnosis; ii) a pan-European QA scheme; and iii) a web hub allowing easy access to information to all stakeholders, patients, and citizens; 2) CANCER INFORMATION - The goal of this activity is a comprehensive and directly comparable set of up-to-date cancer indicators down to regional level across the EU. This will require: i) agreement on metadata standards, privacy issues, lengthy data collection, and cleaning processes; ii) increasing some countries' coverage; iii) lessening variation in data quality; and iv) agreement on statistical methods for estimating future trends. The 2018 priorities are to: a) extend the current minimal European cancer-data set to provide regional-level information for all countries; b) establish a rolling process for submission of data, replacing the 5-yearly collection; and c) develop improved data-quality checking and visualisation tools. 3) THE EUROPEAN PLATFORM FOR RARE DISEASES - the Platform provides and promotes interoperability standards and tools for rare disease (RD) data collection and information exchange. The main priorities in 2018 are to: i) provide agreed standards on semantic interoperability, common data elements, and guidelines for new registries; ii) produce support packages for registries (IT tools and recommendations on management, sustainability, and technical aspects of running registries); and iii) establish an inventory of European RD registries and links between patient registries and biobanks. The Platform also functions as the	JRC.F.1 ENELI HEIN	1.5.1.a	SANTE	SANTE	n/a	GROW RTD	IARC - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER MIN Health EU+ - European Ministries of Health (Member States and Associated Countries)	01/01/2018 31/12/2020	CON-AA	1	Guidelines (recommendations) and requirements for ECIBC and ECICC	This deliverable will include updates and new recommendations on screening and diagnosis; the launch of the Guidelines Platform; a manual of the ECIBC QA scheme; a report on the ECICC pathway; the piloting of the ECIBC QA scheme; a European breast cancer screening training template for radiologists and radiographers; design of a new comprehensive portal including both ECIBC and ECICC under a common umbrella.	23/12/2018	Science-for-policy reports
												2	Enhanced European cancer information system (ECIS)	This deliverable includes: an updated version of the ECIS website; an updated open-source quality check software for validation of cancer-registry data; an updated version of the European cancer registries' quality checks manual; reporting on agreements and decisions of the European Network of Cancer Registries (ENCR) steering committee meetings and working groups in support of data harmonisation.	23/12/2018	Scientific information systems and databases
												3	Interoperability for rare disease data collection and data sharing	This deliverable includes: the development and implementation of the European Rare Disease Registry infrastructure; the establishment of the Central RD metadata repository; European Directory of RD registries; the release of standards for RD data collection and sharing; and the statistical monitoring of congenital anomalies and cerebral palsy in Europe.	23/12/2018	Scientific information systems and databases
												4	Health Promotion and Disease Prevention Knowledge Gateway	JRC-DG SANTE reference publication on evidence on health promotion, prevention and management of NCDs. This will be a one-stop shop for existing recommendations or opinions from European or International bodies (or in their absence the latest research data) on this area. An integrated and horizontal approach will be used, that can focus on specific diseases, processes, risk factors etc. Topics and briefs to be prioritised will be defined by the Member States Steering group referred to above.	15/12/2020	Science-for-policy reports
213 - TMA CC JRC.I.3	6549 - ECDC 2018 ECDC 2018	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the requirements of ECDC.	JRC.I.3 Jens LINGE	1.5.1.a	SANTE	n/a	n/a		01/01/2018 31/12/2018	CON-TW	ECDC2018	Media monitoring of communicable diseases	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the requirements of ECDC.	31/12/2018	Technical systems	
569 - BIOECONOMY JRC.D.1	7002 - PreventFoodWaste Prevent Food Waste - Support to the European Platform on food waste and losses	Food waste (FW) has gained increasing attention over the last years at the political level in Europe. The EU and Member States are committed to meeting the Sustainable Development Goal (SDG) 12.3 target, adopted in September 2015, which foresees to halve per capita FW at the retail and consumer level by 2030, and reduce food losses along the food production and supply chains. Furthermore, FW is one of the priority areas of the European Action Plan for Circular Economy with	JRC.D.1 SERENELLA SALA	1.5.1.a	SANTE	SANTE	n/a			01/03/2018 31/12/2019	CON-AA	1	report on food waste accounting and prevention action	Report illustrating the results of the project both in terms of: 1) methodology or food waste accounting at MS level; 2) methodology for the assessment of food waste prevention actions	30/12/2019	JRC technical reports
7456 - HQHDI JRC.F.1	7102 - HQHDI-SCIENCE Health Care Quality, Health Data and Information - science	The four activities of this WPK support the competitive part (WPK HQHDI-TOOLS) of project HQHDI. 1) HEALTHCARE QUALITY - While continuing the European Commission Initiative on Breast Cancer (ECIBC), a parallel project on colorectal cancer will be initiated. The European Commission Initiative on Colorectal Cancer (ECICC) will be based on the ECIBC model. 2.) CANCER INFORMATION - The goal of this activity is a comprehensive and directly comparable set of up-to-date cancer indicators	JRC.F.1 ENELI HEIN	1.5.1.a	SANTE	JRC	n/a	GROW RTD	EA - European co-operation for Accreditation ENCR - European Network of Cancer Registries	01/01/2018 31/12/2020	INS-RS	1	Science for health care quality, health data and information	This deliverable includes the scientific publications in the field of breast cancer, cancer information, rare diseases and monitoring of congenital anomalies as well as in the field of nutrition.	15/12/2020	Article contribution to periodicals or to conference proceedings
												2	Data for policy	This deliverable includes: supporting and supplementary outputs as well as communication-related outputs that support the WPK HQHDI-TOOLS.	15/12/2020	JRC technical reports

1.5.1.b supporting nano-related policies, health technology assessment - monitor chemical data and implement endocrine disruptors criteria; disseminate novel toxicity approaches.

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
270 - PREVENT JRC.F.1	213 - PATHWAY-27 Pivotal Assessment of the Effects of Bioactives on Health and Wellbeing	This WP entails the JRC participation in the FP-7 funded project PATHWAY-27. The project itself evaluates the effects of three bioactives – docosahexaenoic acid (DHA), β-glucan and anthocyanins – incorporated into dairy, egg and bakery foods on risk factors for the metabolic syndrome. It aims to i) formulate generic protocols, best practices and guidelines for planning dietary interventions; ii) give guidance to SMEs looking to produce health-promoting bioactive-enriched foods; and iii) inform the submission of complete health claim dossiers. The JRC contribution to this project consists of support to the production of a set of "Guidelines for the substantiation of health claims on bioactive enriched foods". This is done by writing and reviewing (parts of) the guideline drafts, hosting stakeholder workshops to ensure the guidelines produced are meaningful, relevant and actionable for the target audiences. The JRC also supports the dissemination of project findings at scientific conferences and events. The Guidelines will be useful to all those interested in learning about, understanding and exploring the possibilities granted by the Nutrition and Health Claims regulation (1924/2006). So far	JRC.F.1 STEFAN STORCKSDIECK STORCKSDIECK BONSMANN	1.5.1.b	SANTE	RTD	NIKOLAKOPOULOU Alexandra (SANTE)			01/02/2013 31/01/2018	CON-IA	3	Integrated guidelines for health claims	This deliverable consists of the preparation and publication of two guidance documents that will inform and assist academia and the food industry sector, especially SMEs, to produce bioactive-enriched foods (BEF) with supportive health claims according to the EU legislation. Prior to publication, stakeholders from all relevant sectors will be consulted (two workshops) on the feasibility and appropriateness of the guidance for the intended target audiences.	30/01/2018	JRC technical reports	
270 - PREVENT JRC.F.1	426 - TOOL-DEV Development of tools and guidance for health-related diet and physical activity measures	This WPK contributes to the achievement of PREVENT's objectives by gathering and developing the evidence base and methodologies for policy making, implementation, and monitoring of key strategic actions of MS and stakeholders. Through its work, the project addresses health inequalities and promotes EU public health and the resilience of the health system and the associated parts of the social fabric. In detail, the WPK comprises: i) continuation of the support to the Framework for National Action on Selected Nutrients and the Roadmap for Action on Food Product Improvement, a public-private partnership led by the Dutch Presidency. The WPK fulfils the needs for mapping progress of these actions, as well as for identification of best practices and evaluation. It also continues the JRC work on food procurement for health and explores the options to incentivise the improvement of food procurement. As for mapping progress, the monitoring framework for sugar content of sugar-sweetened beverages developed in 2017 will be consolidated and adapted to address sugar content of breakfast cereals as well as dairy. All these elements will be used for monitoring and evaluation of food product improvement actions at the EU level. The WPK will also develop a broader methodological framework for the evaluation of cost effectiveness of public health interventions in order to compare policy options and support policy decisions. The broader framework will include the original model (impact of fibre intake on cardiovascular disease) adapted to other health determinants and their	JRC.F.1 Jan WOLLGAST	1.5.1.b	SANTE	JRC	C4 A. Furtado	AGRI EAC EMPL ENV RTD		01/01/2014 31/12/2018	INS-RS	1	Development of implementation, monitoring and evaluation frameworks in support of National Actions on Selected	The JRC will continue to collect and analyse data from several sources (national and commercial ones) for the monitoring and mid-term evaluation of sugar reduction efforts at national and EU level. A broad framework for ex ante evaluation of health impacts associated with specific risk factors will also be developed. Stakeholders and citizens' engagement processes will be organised to identify relevant parameters (incl. social and environmental), data, and indicators for constructing such a framework.	31/12/2018	JRC technical reports	
												2	Scientific outputs on risk factors related to NCDs and the impacts of addressing them	In addition to the policy targeted outputs delivered directly to Member States and our policy partners, other data analyses performed in the frame of PREVENT will be published in the peer-reviewed scientific literature.	15/05/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
433 - SciNANO JRC.F.2	2180 - EU NCL European Nanomedicine Characterisation Laboratory	Establishment of a distributed laboratory facility for the characterisation and preclinical testing of candidate nanomedicines. The JRC is responsible for the phys-chem characterisation of nanomedicine, as well as for the dissemination activities and contacts with stakeholders	JRC.F.2 LUIGI CALZOLAI	1.5.1.b	SANTE	RTD	SANTE -Agnes Mathieu (SANTE.B.5) ; RTD -Andrea de Candido (RTD.B.4)	GROW RTD	Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry EMA - European Medicines Agency (EMA)	01/05/2015 30/04/2019	CON-IA	8	JRC contribution to the EU-NCL project	JRC will contribute to achieve the objectives of this project: •To provide a trans-disciplinary testing infrastructure covering a comprehensive set of preclinical characterisation assays (physical, chemical, in-vitro and in-vivo biological testing) allowing researchers to fully comprehend the biodistribution, metabolism, pharmacokinetics, safety profiles and immunological effects of their Med-NPs. •To foster the use and deployment of standard operating procedures (SOPs), benchmark materials, and quality management for the preclinical characterisation of Med-NPs (nanoparticles used for medical applications). •To promote inter-sectoral and inter-disciplinary communication among key drivers of innovation, especially between developers and regulatory agencies.	28/04/2019	JRC technical reports	
270 - PREVENT JRC.F.1	3923 - INFO-POL Evidence for informed policies on Nutrition, Physical Activity and alcohol-related harm	The work described includes direct scientific and technical support to the Member States' High Level Group on Nutrition and Physical Activity (HLG) and the EU Platform for Action on Diet, Physical Activity, and Health, both chaired by the European Commission, as well as support to the Committee for National Alcohol Policy and Action and the EU Alcohol and Health Forum on alcohol-related harm. Healthy eating, physical activity (PA), and prevention of alcohol-related harms are essential pillars in the prevention of chronic disease. Concretely, this WPK aims to deliver knowledge, data analysis, and policy options to MS and stakeholders. This is needed to inform and empower them in enacting successful chronic disease prevention. The main part of the WPK provides support in these areas in the form of: i) the creation and maintenance of a joint DG SANTE-JRC on-line reference guide on nutrition and physical activity that provides a publicly available, independent, trustworthy and impactful source of information on the field of nutrition, health, and related policies; ii) joint DG SANTE-JRC development of a training course for policy makers in areas related to nutrition, alcohol, and behavioural sciences; iii) provision of presentations and short technical reports on key scientific issues related to the topics concerned by the platforms mentioned above; iv) analyses of relevance and ambition of planned EU Platform commitments; v) analyses of health-related EU and national data (e.g. on progress indicators of the Childhood Obesity Action Plan and DG SANTE's initiatives on MS Health Profile fact sheets) with a view to identifying highlights and areas for development for each country. In 2018/2019, INFO-POL will also develop guidance for marketing and advertisement restrictions of food products and beverages (including alcoholic drinks) within the context of the Audio Visual Media Services Directive (AVMS) revision, REFIT, and Better Regulation initiatives. The drafting of the guidance will be based on literature and policy reviews, focus groups, and interviews.	JRC.F.1 SANDRA LOURO CALDEIRA	1.5.1.b	SANTE	SANTE	Artur Furtado	AGRI CNECT EAC RTD			01/01/2016 31/12/2018	CON-AA	1	Capacity building for policies related to nutrition, alcohol, and physical activity	In addition to continuous support and specific training courses and materials on matters related to alcohol, nutrition, and physical activity the WPK will also deliver: i) toolbox for setting voluntary codes on marketing restrictions of food-related products and beverages; ii) report on food-based dietary guidelines in the EU and setting up of a database	15/12/2018	Training
													3	Online guide on nutrition and physical activity II	After the launch of 1st edition in 2016, the JRC will expand & update the online reference guide on nutrition and health related issues. The target audience is EC and MS policy makers, other stakeholders and general public. The content of the guide will be updated regularly; in 2017 an updated plan will be drawn with DG SANTE and a new edition with ~ 20 chapters launched in 2018	15/12/2018	Scientific information systems and databases
													4	Scientific activities: healthy eating and PA	Yearly summary of support to DG SANTE, HLG and EU platform inc 1) regular presentations (What's in the News, WIN) at all HLG and Platform meetings 2) ad hoc scientific support 3) support to EU framework for national initiatives on Selected Nutrients (e.g. setting benchmarks, monitoring) and 4) analysis of commitments of the EU Platform for Action on Diet, Physical Activity (PA) and Health and 5) analysis of health data for country health profiles (State of health in the EU).	15/01/2019	JRC technical reports
													5	Scientific activities: alcohol related harms	Yearly summary of support to DG SANTE in the area of alcohol related harm, including the participation in regular meetings and ad hoc working groups of the Committee on National Alcohol Policy and Action and the European Alcohol and Health Forum	15/01/2019	JRC technical reports
													7	Training "Physical activity related policies"	JRC-DG SANTE joint development of a training course for policy makers in areas related to physical activity promotion.	02/04/2018	Training
													8	Training "Behavioural sciences applied to alcohol"	JRC-DG SANTE joint development of a training course for policy makers in areas related to alcohol related harm.	02/04/2018	Training
433 - SciNANO JRC.F.2	4202 - SPEED-THERAPY Speeding up the development of targeted precision therapies	There is a growing interest in the development of nanotechnology-based medicines and diagnostics and intense research and patents, but all this research activity faces difficulties in the translational process and has produced only a limited number of new medicines in the market, partly due to the lack of appropriate characterization methods. In this project, building on the considerable expertise and instrumentation existing at JRC, we will develop techniques and methods for the sensitive and accurate characterization of targeted nanodrug delivery systems as a whole and all of its component parts. The outcome will help EU companies (and especially SMEs) in speeding up the translation of promising research to therapies in the clinic and will also help regulators in ensuring the quality of medicinal products for human clinical trials and therapy	JRC.F.2 LUIGI CALZOLAI	1.5.1.b	SANTE	JRC	SANTE -Agnes Mathieu (SANTE.B.5)	RTD	EMA - European Medicines Agency (EMA)	16/06/2016 15/06/2018	INS-ER	3	Knowledge transfer on advanced analytical methods	Report on advanced analytical methods for nanomedicine to EMA and EU-NCL	30/04/2018	JRC internal reports	
												4	Characterization of the complete platform	Publication on the characterization and function of the complete platform	31/03/2018	JRC internal reports	
5133 - Illicit JRC.F.4	4946 - TPD Support to Tobacco Products Directive (tobacco/e-cigarettes)	The Tobacco Products Directive (2014/40/EU) aims to improve the functioning of the internal market for tobacco and related products, while ensuring a high level of health protection for European citizens. The Directive lays down rules governing the manufacture, presentation and sale of tobacco and related products. Furthermore, it lays down a number of safety and quality requirements for nicotine-containing electronic cigarettes. This WP supports EC services in the implementation of Union legislation in the field of tobacco products especially novel tobacco products such as e-cigarettes and heat-not-burn products, and cigarettes with characterising flavours, including harmonisation/standardisation processes and involvement on the Joint Action on Tobacco Control as set out in agreement with Regulation (EU) No 282/2014 (establishing the Health Program (2014-2020) and including societal input for science/engagement (engagement hub)	JRC.F.4 Thomas WENZL	1.5.1.b	SANTE	SANTE	Anna Eva AMPELAS		Tech Serv - Member States and their Technical Services/type approval authorities WHO - World Health Organization	01/01/2017 31/12/2018	CON-AA	3	Technical support to the implementation of the Tobacco Products Directive	An annual report will be issued as required by the Administrative Arrangement. It will summarise the achievements of the project. NOTE: A progress report on the developments in the field of harmonisation/standardisation of e-cigarettes and other novel tobacco products will be sent to DG SANTE as an ARES note. NOTE: A report on the assistance to SANTE in implementing selected tasks of the Joint Action (JA) on Tobacco Control with regard to the assessment of industry notifications through the EU Central Entry Gate and the testing/development of methods for e-cigarette emissions and e-liquids will be sent to DG SANTE as an ARES note.	10/12/2018	JRC technical reports	
270 - PREVENT JRC.F.1	5640 - BABYFOOD Support to delegated act on processed cereal-based food (PCBF) and baby food	Article 11 of Regulation (EU) No 609/2013 requires the Commission to lay down in a delegated act specific information and compositional requirements for Processed Cereal-Based Food (PCBF) and baby food. DG SANTE has asked the JRC to support the drafting of the act and this AA stems from that request. The WPK objectives are: (i) to collect and summarise evidence-based information on the products placed on the market as PCBF and baby food; (ii) to collect and summarise existing national and international food-based dietary guidelines and recommendations for infants' and young children's nutrition; (iii) to summarise the role PCBF and baby foods play in the overall diet of infants and young children in various EU countries. The temporal scope is the current situation (2016/2017) and the geographical scope is mainly EU 28. To support Member States and DG SANTE in the drafting of the delegated act on specific information and compositional requirements for PCBF and baby food, this WPK will deliver an analysis of the products currently placed on the EU market. It will also set up a comprehensive database with national and international nutrient and food-based dietary guidelines, recommendations and practices (for infants and children 4/6 months to 3 years old) and analyse the data. DG SANTE and Member States input and feedback will be considered and included for the whole duration of the work to ensure that all efforts are in line with their needs and will directly support the setting of these legally binding nutritional composition criteria as well as others pertaining to the regulation and delegated act.	JRC.F.1 SANDRA LOURO CALDEIRA	1.5.1.b	SANTE	SANTE	Stephanie BODENBACH	AGRI RTD TRADE		01/01/2017 01/03/2018	CON-AA	1	Towards a proposal for the setting of legal nutritional composition criteria for baby foods and processed cereal based foods (PCBFs)	Support to Member States and DG SANTE is provided in the form of presentations, informed discussions, and data gathering, from literature reviews to surveys and face-to-face or one-to-one direct MS consultations. Written JRC analyses will be drafted as internal or public reports as agreed through consultations with partner DG and MS.	01/03/2018	Science-for-policy reports	
												2	Scientific outputs on infant and young child nutrition	In addition to the policy-targeted outputs delivered directly to Member States and our policy partners, the data collected and analyses performed during this work package will be published in peer-reviewed scientific literature.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
		In line with the suggested focus of the JRC transversal 'Omics in society' project on human genomics, and complementing the envisaged work on the proposed themes (Genome-wide association studies, Epigenomics, Biomarkers and biomonitoring, and Ethical aspects of omics) I.2 will analyse human genomics applications from a citizen perspective as well as with a forward-looking, future view. The work in 2018 will prepare the ground for citizen engagement initiatives and foresight analysis of the future of genetic information in 2019. The overall aim of this set of activities is to better understand •the narratives and promises embedded in the discourses and developments in human genomics											1	Systemic overview of the human genomics field	The report will provide a systemic overview on the field of human genomics, including the state of the art and future technological trends of generating and using genetic information, and a mapping of relevant actors in the field. For epistemic communities the report will describe the knowledge, values, and vested interests. It will also include an analysis of behavioural aspects of the use of genomic information.	31/12/2018	Science-for-policy reports
													2	Ethics dialogues on human genomics	The report will describe the insights, expectations and imaginaries of different actors (experts and non-expert citizens) around the development and deployment of human genomics technologies	31/12/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7523 - OMICS JRC.F.7	6525 - GENOMICS Genomics – present and future societal implications	+matters of care for European citizens and different actors, i.e. how those narratives resonate with society, namely the societal and ethical dimensions that need to be taken into account for EU policies (this also includes identification of research needs and essential elements in research programmes). +behavioural aspects of applying genomic information for health to inform respective policies +possible future developments of human genomics applications and their implications for European societies, and healthcare in particular, and for relevant EU policies. Main methodological approaches include Science and Technology Studies (STS), Horizon Scanning and Foresight, and Behavioural Insights.	JRC.I.2 ANNE-KATRIN BOCK	1.5.1.b	SANTE	JRC	n/a	RTD		01/01/2018 31/12/2019	INS-RS	3	The future of human genetic information	The report will present the results of the foresight analysis. Depending on the issues and possible developments identified in 2018, the analysis could include vision development and road mapping and/or scenario analysis. The analysis could cover implications of genomics for healthcare organisation and efficiency, future conditions to benefit from genomics in healthcare including access to health data and data ownership, and patient involvement. The foresight analysis will put strong emphasis on behavioural aspects to provide insights on e.g. changing risk perceptions, changing use of healthcare services, self-management of health and related personal data.	31/12/2019	Science-for-policy reports
												4	Do it Yourself/Do it together" (DIY/DIT) spaces and human genomics	The report will describe the results of a social research enquiry targeted at "Do it Yourself/Do it together" (DIY/DIT) spaces in different Member States, that is in non-traditional venues or networks where non-specialists, hobbyists and amateurs but also professional scientists, are building and creating new tools, systems and products (e.g. including citizen science and DIYbio projects). This will include a mapping of developments, performative aspects, as well as ethics by which these spaces operate through the organisation of in-depth interviews and material engagements	31/12/2019	Science-for-policy reports
213 - TMA CC JRC.I.3	6548 - MEDISYS DRUGS 2018 MEDISYS DRUGS 2018	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the objectives of the EMM work package. This deliverable will be linked to a number of publications and releases of new or upgraded technical systems.	JRC.I.3 Jens LINGE	1.5.1.b	HOME	n/a	n/a	SANTE	EMCDDA - European Monitoring Centre for Drugs and Drug Addiction	01/01/2018 31/12/2018	CON-TW	MEDISYS DRUGS 2018	Media monitoring of psychoactive substances	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the objectives of the EMM work package. This deliverable will be linked to a number of publications and releases of new or upgraded technical systems.	31/12/2018	Technical systems
213 - TMA CC JRC.I.3	6962 - MEDISYS DRUGS 2017 MEDISYS DRUGS 2017	Customizing MedISys for drugs and psychoactive substances. The Medical Information System (MEDISYS) is a fully automatic event-based surveillance system that monitors reporting on communicable diseases in man and animals, chemical, biological, radiological and nuclear threats, plant health, food and feed contaminations and drugs and psychoactive substances. The system retrieves news articles from general news media, official and unofficial public health sites and selected blogs, categorizes all incoming articles according to predefined multilingual categories, identifies known names such as organizations, persons and locations, extracts events, clusters news articles and calculates statistics to detect emerging threats. EMCDDA uses MEDISYS to monitor news articles on opiates such as fentanyl and new psychoactive substances sold as legal highs. In the work package, we will further customize MEDISYS adding new categories and additional sources related to drug use.	JRC.I.3 Jens LINGE	1.5.1.b	HOME	n/a	n/a	SANTE	EMCDDA - European Monitoring Centre for Drugs and Drug Addiction	30/09/2017 31/08/2018	CON-TW	MEDISYS DRUGS 2017	Media monitoring of psychoactive substances 2017-18	JRC will create approximately 20-50 categories for monitoring substances in a multi-lingual approach. JRC will add approximately 500 relevant sources (official/government agency sites, drug-related sites, media/news sites) provided by EMCDDA to the MEDISYS processing chain. JRC will customize a machine-learning algorithm for the identification of new psychoactive substances (brand names of legal highs/research chemicals, chemical compound). JRC will produce a short report of the activities undertaken under the SLA, including a brief summary of the methods, results, and conclusions of the machine learning study.	31/08/2018	Technical systems
270 - PREVENT JRC.F.1	7103 - FOP Front-of-pack food labelling schemes	The work developed in this WPK stems from a direct request from DG SANTE to the JRC; it will fulfil the request set in Regulation No 1169/2011, 35(5) on the provision of food information to consumers for the Commission to submit a report to the EP and the Council on additional forms of expression and presentation of the nutrition declaration, including the use of front-of-pack (FOP) nutrition labelling schemes, their effect on the Internal Market and on the advisability of further harmonisation in the area. Concretely, Units F.1 and 1.2 will combine existing know-how and expertise in nutrition, public health and consumer behaviour to provide a review and build a database of front-of-pack labelling schemes in use in the EU and worldwide and a comparison of these schemes and their elements or characteristics. This includes FOP use, consumer understanding, consumer behaviour, public health benefits and other potential intended or unintended effects or impacts of introducing an harmonised FOP scheme, for example on the internal market or burden to the food industry. FOP schemes can quickly and effectively provide essential information to consumers on the nutritional composition of foods, guiding their choice towards healthier food options. The outcome of this WPK will inform the	JRC.F.1 Jan WOLLGAST	1.5.1.b	SANTE	SANTE	n/a			01/01/2018 31/12/2018	CON-AA	1	Front of pack labelling in the EU	This deliverable includes the building of a database and the outcome of a thorough analysis of its content, including a comparison of current front of pack labelling schemes available in the EU, their understanding by consumers and effect on their behaviour, dietary choices and potential health and other benefits or impacts of the introduction of a harmonised FOP scheme at the EU level.	30/09/2018	Science-for-policy reports
1.5.2. Food safety, food quality and food fraud																
1.5.2.a food and feed safety - manage three EU reference laboratories, which includes developing harmonised/validated methods, organising laboratory proficiency tests and providing new analytical tools for food and feed safety control and the pre-marketing authorisation of genetically modified organisms and feed additives.																
204 - Compliance JRC.F.5	604 - FAA Feed additives	The JRC has the legal obligation to host the European Union Reference Laboratory for Feed Additives Authorisation (EURL-FAA) as specified in Article 21 of Regulation (EC) No 1831/2003. Food of animal origin forms an essential part of our diet. The food is produced in the EU by about 5 million farmers feeding their animal with 480 million feed per year. These figures clearly show the relevance of this economic sector. While the production of safe and high quality feed is a prerequisite for human and animal health, there is also the need that the feed is produced under sustainable conditions reflecting the scarce resources of the main materials on the one hand and the increasing demand for food due to the growth of world population on the other hand. Feed additives play a key role to meet both objectives. These products cover traditional substances such as vitamins but also various enzymes and microorganisms, which significantly improve the feed-to-food conversion ratio specifying how much food is produced from a specific amount of feed. This industrial sector is highly innovative, since regularly new feed additives are developed, and has an annual turnover of about 5	JRC.F.5 Christoph VON HOLST	1.5.2.a	SANTE	JRC	Stefano Soro SANTE E5		EFSA - European Food Safety Authority	01/01/2016 31/12/2019	INS-RS	10	Feed additives authorisation	Contribution to the authorisation of feed additives by evaluating methods of analysis and drafting corresponding evaluation reports. These reports are sent to EFSA and DG SANTE are required to decide on approval or denial of request for authorisation	31/12/2018	Validated methods, Reference methods and measurements
												20	Feed additive authorisation	Reception, storage and maintenance of the samples of the feed additives sent by the applicant to the EURL, when submitting an feed additive application to DG SANTE	31/12/2018	Reference Material
204 - Compliance JRC.F.5	803 - GMO 1829/2003 GMO authorisation	The JRC is hosting the European Union Reference Laboratory for Genetically Modified Food and Feed (EURL GMFF) since 2003 according to the legal mandate assigned by Regulation (EC) No 1829/2003 and its implementing acts. The EURL GMFF is one of the actors needed for the correct functioning of the EU policy on GMOs. The activities covered by this work package include: - the assessment and validation of methods for the detection, identification and quantification of GMOs in food and feed provided by applicants (mainly biotech industry); this step is mandatory for the process of authorisation of any GMO in Europe (no method – no authorisation) and includes also laboratory experiments as well as bioinformatics analysis to ensure the appropriate quality of the sequence information and specificity of the methods; - the provision of appropriate control samples for correct GMO testing to the official control laboratories; - the communication with and reporting to the European Food Safety Authority (EFSA) in the frame of the authorisation process; - the steering and management of the European Network on GMO Laboratories (ENGL) as crucial support to the harmonised implementation of GMO legislation and to the EURL GMFF; the ENGL is mandated by Regulation (EC) No 1829/2003 to support the EURL GMFF in its tasks and is therefore an integral part of the regulatory framework; - activities to establish an EU wide consensus and harmonised approaches for GMO analysis. According to Regulation (EU) No 120/2014 the EURL GMFF receives a financial contribution from the applicant for each application submitted; this contribution should cover a part of the costs required for the assessment and validation of the analytical methods.	JRC.F.5 Marco MAZZARA	1.5.2.a	SANTE	JRC	Chantal Bruechschy - SANTE E.3 – chantal.bruechschy@ec.europa.eu	GROW TAXUD TRADE	EFSA - European Food Safety Authority NRLs - NRLs - national reference laboratories	01/01/2016 31/12/2019	INS-RS	1	Verification of GMO sequencing information	Systematic quality checks of the information about DNA sequencing provided by applicants in relation to the respective EURL GMFF guidelines and selective re-sequencing of GMOs on specific request of DG SANTE	31/12/2018	JRC technical reports
												10	European Network of GMO Laboratories (ENGL)	Steering, managing and contributing to the ENGL (ENGL Steering Committee, ENGL Annual Meeting, ENGL working groups) and its output, such as contributions to guidance documents to support and harmonise GMO testing, position papers and input to EU or other international organisations (e.g., European Accreditation, standardisation bodies)	31/12/2019	JRC technical reports
												12	Support to the CBD Biosafety Clearing House	Support provided in the context of the Convention of Biological Diversity. The JRC acts as Biosafety Clearing House (BCH) National Focal Point for the European Commission (nominated by DG SANTE).	31/12/2019	JRC technical reports
												2	Method validation	Validation of methods of analysis for GMOs in food and feed. The methods are provided by applicants, requesting authorisation of a GMO. A successful validation is a pre-condition for the market authorisation.	31/12/2018	Validated methods, Reference methods and measurements
												3	Control samples	Preparation and distribution of control samples to National Reference Laboratories. These control samples are needed to perform reliable GMO controls.	31/12/2018	JRC technical reports
												4	European Network of GMO Laboratories (ENGL)	Steering, managing and contributing to the ENGL (ENGL Steering Committee, ENGL Annual Meeting, ENGL working groups) and its output, such as contributions to guidance documents to support and harmonise GMO testing, position papers and input to EU or other international organisations (e.g., European Accreditation, standardisation bodies)	31/12/2018	JRC technical reports
												6	Support to the CBD Biosafety Clearing House	Support provided in the context of the Convention of Biological Diversity. The JRC acts as Biosafety Clearing House (BCH) National Focal Point for the European Commission (nominated by DG SANTE).	31/12/2018	JRC technical reports
												7	Verification of GMO sequencing information	Systematic quality checks of the information about DNA sequencing provided by applicants in relation to the respective EURL GMFF guidelines and selective re-sequencing of GMOs on specific request of DG SANTE	31/12/2019	JRC technical reports
												8	Method validation	Validation of methods of analysis for GMOs in food and feed. The methods are provided by applicants, requesting authorisation of a GMO. A successful validation is a pre-condition for the market authorisation.	31/12/2019	Validated methods, Reference methods and measurements
9	Control samples	Preparation and distribution of control samples to National Reference Laboratories. These control samples are needed to perform reliable GMO controls.	31/12/2019	JRC technical reports												
67 - Food Safety JRC.F.5	825 - Support CEN Mandates Pre-normative research to support standardisation of methods for contaminants in food and feed	In line with the mission of the JRC, and based on Mandates M/520, M/521, M/522 and M/523 given by COM to CEN, IRMM develops and validates by collaborative trial up-to-date analytical methods for the determination of several natural toxins and additives in food and feed. The validated methods will become European Standards and will support official food control in executing its tasks.	JRC.F.5 Joerg STROKA	1.5.2.a	SANTE	JRC	VERSTRAETE Frans (SANTE)		CEN - European Committee for Standardization	01/01/2014 31/12/2018	INS-RS					
67 - Food Safety JRC.F.5	3261 - Prenoraller Pre-normative research for allergen and gluten analysis	Provisions of the Food Information to Consumers legislation (Regulation (EU) No 1169/2011) address the requirement for the labelling of priority allergenic ingredients and gluten to guide allergen sufferers and consumers intolerant to gluten in making informed choices. The goal of this WPK is to develop a measurement infrastructure that enables the comparable measurement of priority food allergens in the EU. This will include the coordination of a European Network of Allergen Detection Laboratories to support the JRC in providing consolidated advice to policy makers. It will address issues such as the agreement on the appropriate units for expressing measurement results; establishing agreed conversion factors from the measurement target to the preferred unit; agreement on robust targets for allergen detection; and benchmarking current measurement capabilities via specific evaluations and intercomparisons. Moreover, multiple allergen detection methods will be validated taking into account also the assessment of the major contributors to the measurement uncertainty budget.	JRC.F.5 GAVIN O'CONNOR	1.5.2.a	SANTE	JRC	Tim GUMBEL		EFSA - European Food Safety Authority	01/01/2016 31/12/2019	INS-RS	3	Guidance on allergen detection in food products	This includes a guidance document on the appropriate measurement unit for expressing results of food allergen measurements, the organisation of proficiency testing for enforcement laboratories, and the optimisation and validation of methods for the quantification of priority allergen proteins in food	30/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
204 - Compliance JRC.F.5	3372 - EURL-FAC Operation of the European Union Reference Laboratory for Feed Additives Control	JRC operates the European Union Reference Laboratory for Feed Additives - Control (EURL-FAC). The EURL-FAC coordinates a network of National Reference Laboratories (NRLs) with the aim of ensuring quality and comparability in the official control of the levels of additives added to feed as stipulated by Regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules. In addition the EURL will provide scientific support to DG SANTE and the NRL network, in particular the development and validation of new methods. In this frame the EURL-FAC will organise 3 proficiency tests (PTs) for the determination of respectively vitamins, cobalt and coccidiostats in animal feed. The EURL-FAC will also organise the annual workshops, follow-up the results reported by underperforming NRLs in previous PTs, maintain the CIRCA-BC platform for discussion for the EURL and the NRLs, provide support to the EU standardisation body CEN (including regular participation in the CEN TC 327 meetings) and provide support to NRLs (scientific advice and/or support for implementation) and DG SANTE in technical matters concerning analytical methods.	JRC.F.5 Ursula VINCENT	1.5.2.a	SANTE	SANTE	Stefano SORO		CEN - European Committee for Standardization NRLs - NRLs - national reference laboratories	01/01/2017 31/01/2018	CON-AA	2	Activity report of EURL control 2017	The EURL-FAC will organise a proficiency test (PT) for the determination of vitamins in feedingstuffs for the national reference laboratories and its annual workshop. This report will summarise the outcome of the PT and of the workshop.	31/01/2018	JRC technical reports
204 - Compliance JRC.F.5	3500 - EURL 882-2004 VIII EURL GMFF mandate under Regulation (EC) No 882/2004 on official controls (food and feed law)	The EURL GMFF will provide the required support to DG SANTE and co-ordinate the National Reference Laboratories in the implementation of official control testing of food and feed for the presence of GMOs, required under Regulation (EC) No 882/2004. It will ensure the development and use of reference methods, provide training and guidance, organise comparative testing schemes (CT) and provide support for the improvement of testing by the National Reference Laboratories.	JRC.F.5 Wim BROOThAERTS	1.5.2.a	SANTE	SANTE	Chantal Bruietschy - SANTE E.3 - chantal.bruietschy@ec.europa.eu	GROW TRADE	ENGL - European network of GMO laboratories NRLs - NRLs - national reference laboratories	01/01/2016 31/08/2018	CON-AA					
67 - Food Safety JRC.F.5	3521 - EURL-FCM 2018-2020 European Reference Laboratory for Food Contact Materials (AA 2018-2020)	The JRC is hosting the European Union Reference Laboratory for Food Contact Materials (EURL FCM) according to the legal mandate established in Regulation (EC) No 882/2004. The EURL FCM has to provide methods and representative substances as well as proficiency tests in order to monitor the quality and comparability of the official controls in the Member States thus enforcing the official controls legislation regarding FCMs in the frame of Regulation (EC) No 882/2004 and Regulation (EU) 2017/625 from 29 April 2018, respectively. The EURL FCM coordinates a network of National Reference Laboratories (NRLs) and ensures the follow-up of underperforming NRLs in proficiency tests. It acts as coordinator for dissemination of information, technology transfer, trainings and networking. In particular the EURL FCM has to organise annual workshops and to provide support to NRLs and DG SANTE in technical matters concerning analytical methods. Moreover, it develops on request of DG SANTE methods and performs inter-laboratory comparisons for the preparation of intended regulatory developments in order to ensure ex-ante the potential enforceability of such future legislation.	JRC.F.5 Eddo HOEKSTRA	1.5.2.a	SANTE	SANTE	DG SANTE.DDG2.E.6 - M. Iglesia (HoU); B. Schupp	GROW	CEPIC - European Chemical Industry Council (CEPIC) CEN - European Committee for Standardization EDQM - European Directorate for the Quality of Medicines and HealthCare (EDQM, Council of Europe) EFSA - European Food Safety Authority Food contact mat. EU MS - EU Member States Competent Authorities for food contact materials ISO - International Organization for Standardization (ISO) NRLs for FCM - National Reference Laboratories for food contact materials	01/01/2018 31/12/2020	CON-AA	1	Interlaboratory comparison exercises	Design, organisation and execution of inter-laboratory comparative (proficiency) testing with the aim of coordinating the harmonised application of methods of analysis by the National Reference Laboratories (NRLs) and, if necessary, by other official control laboratories. Ensuring appropriate follow-up of such comparative testing in accordance with, where available, internationally accepted protocols, and informing the Commission and the Member States on the results and specific follow-up actions.	31/12/2019	Validated methods, Reference methods and measurements
									2			Coordinating and guiding NRLs including their training	The EURL will provide NRLs with guidance and coordinate practical arrangements for the application of analytical methods, provide scientific and technical assistance to DG SANTE (e.g. mineral oil) and provide information on relevant research activities. Annual workshop will be organised where the specific NRL needs and experiences are discussed, including the outcome of proficiency testing and training topics for NRLs. Further trainings set-up by the EURL to address underperformance in proficiency tests when relevant. Such trainings are also open to experts from third countries according to the Regulation. Moreover, as requested in regulation 2017/625, the EURL will collaborate with laboratories in third countries as well as with EFSA.	31/12/2019	JRC technical reports	
									3			Collection and development of analytical methods and standards for substances under Regulation (EU) No 10/2011	Commission Decision C(2015) 4993 stipulates the accelerated collection of new methods for substances under Regulation (EU) No 10/2011. The deliverable will consist on the one hand side of the annual collection of standards and analytical methods for the determination of substances listed in the Regulation received from petitioners or EFSA and other sources. The related on-line database of methods and the repository of standards will be regularly updated. On the other hand the JRC will develop new multi-analyte methods for FCM controls. These methods will be validated in-house and in the EURL-NRL network. The results will also be provided to CEN/ISO for future standardisation.	31/12/2019	Scientific information systems and databases	
67 - Food Safety JRC.F.5	3777 - FCM-Sci2Pol Policy support to EU FCM legislation	Food contact materials (FCMs) include various materials ranging from sustainable (paper and board, recyclable & compostable) to highly technological innovations (nanocomposites, active, intelligent). Materials with improved functionality contribute to ensuring improved safety in the food supply chain and comply with the framework Regulation 1935/2004 on FCMs. This work package is focussed on developing and providing the related technical safety support frameworks to DG SANTE by (1) establishing guidelines for the correct technical implementation of legislation and options for dealing with non-harmonised FCMs, (2) performing underpinning research on materials to foster safe design approaches for innovative and sustainable FCM contributing to the circular economy and (3) compiling relevant chemical data to support improved risk assessment tools and strategies for standardisation and compliance testing. This WPK will also work on a scheme for the authorisation of analytical methods for official control of FCMs.	JRC.F.5 Eddo HOEKSTRA	1.5.2.a	SANTE	JRC	DG SANTE.DDG2.E.6 - M. Iglesia (HoU); B. Schupp	GROW	CEPIC - European Chemical Industry Council (CEPIC) CEN - European Committee for Standardization CEPE - Paints, printing inks and artists' colours in Europe EDQM - European Directorate for the Quality of Medicines and HealthCare (EDQM, Council of Europe) EFSA - European Food Safety Authority Food contact mat. EU MS - EU Member States Competent Authorities for food contact materials ISO - International Organization for Standardization (ISO) NRLs for FCM - National Reference Laboratories for food contact materials	01/01/2018 31/12/2020	INS-RS	1	Technical guidelines on testing kitchenware	JRC Technical guidelines on migration testing of kitchenware from harmonised and non-harmonised materials had been published in 2009. They are referred to, among others, by the Council of Europe. Recent developments in national legislations require an update of the first edition including an adaptation to the new rules of the Regulation for plastics (Reg. 10/2011).	30/11/2018	JRC technical reports
									2			Recycling of plastic FCM	Regulation 282/2008 provides the framework of recycling plastics for reuse as FCM. PET recycling processes are being evaluated. Several issues have to be elucidated such as the use of non-compliant PET sandwiched between compliant PET, potential contaminants in post-consumer used plastics other than PET and the decontamination yield at realistic contaminant level.	25/10/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-E) or Social Science Citation Index (SSCI)	
									3			Development of test methods and approaches	DG SANTE notified the Member States and the JRC that they will develop legislation for printing inks, but no testing methods exist. Furthermore the development of the Technical Guidelines on the compliance testing of plastic food contact materials showed that the approach for testing multi-material FCM and assembled products is not harmonised. Release of metals from various FCM has also to be addressed. This deliverable aims to develop related test methods or approaches.	31/12/2019	JRC technical reports	
									4			Authorisation of analytical methods	A scheme for the authorisation of analytical methods for official control of FCMs will be developed on request of DG SANTE. The scientific-technical competence and independence of the JRC are considered as prerequisites for delivering such a concept.	31/12/2018	JRC technical reports	
67 - Food Safety JRC.F.5	6200 - Conta Food contaminants	This WPK will provide support to DG SANTE regarding the establishment of implementing acts for the new Official Controls Regulation 2017/625, their ad-hoc requests on food contaminants and the transfer of 3 EURLs to Member State laboratories. In addition the WPK tasks include the modification and optimisation of a previously developed analytical method for Alternaria toxins in wheat, oil seeds and tomato products for meeting the method performance requirements that are needed to apply the method for official food control under the new provisions planned for method criteria in the frame of official controls in the EU. The work will comprise investigations to which extent all mycotoxins of interest could be determined in a single approach or would have to be separately analysed toxin by toxin or food matrix by food matrix. After successful in-house validation, the method would be tested in a collaborative trial study in collaboration with CEN TC 275/WG5 as requested by DG SANTE. The resulting method is subject to become a standardised CEN method.	JRC.F.5 Joerg STROKA	1.5.2.a	SANTE	JRC	n/a	SANTE	CEN - European Committee for Standardization	01/01/2018 31/12/2018	INS-RS	1	Input to implementing acts for Regulation 2017/625	JRC will support DG SANTE on technical issues for the realisation of the required drafting/modification of implementing acts as a result of the new Official Controls Legislation.	31/12/2018	JRC technical reports
									2			Modification and validation of a toxin method	This includes the procurement and qualification of 15 reference materials for the planned collaborative trial, drafting of a method protocol with detailed descriptions for the collaborative trial participants, conducting a pre-trial workshop to discuss, among others, possible obstacles observed in the participants' laboratories and performing a demonstration of the method on the JRC site in Geel. After the availability of method performance parameters from the collaborative trial the method will be submitted to CEN for evaluation. A final method protocol will be drafted as basis for a CEN standard. This protocol will contain all required details, updates on changes and tabulated values of method performance.	31/12/2018	Validated methods, Reference methods and measurements	
		This work package comprises the activities carried out by the JRC according to the legal mandate of Regulation (EC) No 882/2004 on official control and as from April 2018 to Regulation (EU) 2017/625. The European Union Reference Laboratory for Genetically Modified Food and Feed, nominated as EURL for GMOs, has to provide the required technical and scientific support to the Commission and has to co-ordinate the National Reference Laboratories (NRLs) in the implementation of official control testing of food and feed for the presence of GMOs. It will provide NRLs with details and guidance on the methods of laboratory analysis, testing or diagnosis, including reference methods, and will ensure the development and use of reference methods; the EURL will provide training courses to staff from NRLs and to experts from third countries; organise comparative testing schemes (including the preparation, characterisation and dispatch of the test materials, the data treatment, interpretation of results and reporting to the NRLs and DG SANTE) and their appropriate follow-up and provide support for the improvement of testing competences of the NRLs; will provide information on relevant national, Union and international research activities to NRLs and support to NRLs and DG SANTE in technical matters concerning analytical methods. The EURL has also to organise annual workshops and to maintain a platform for information exchange among the EURL and NRLs.										1	Comparative (proficiency) testing	Coordination of the application by the national reference laboratories and, if necessary, by other official laboratories of the methods of analysis, in particular, by organising regular inter-laboratory comparative testing or proficiency tests and by ensuring appropriate follow-up of such comparative testing or proficiency tests in accordance, where available, with internationally accepted protocols, and informing the Commission and the Member States of the results and follow-up to the inter-laboratory comparative testing or proficiency tests.	31/12/2018	JRC technical reports
												10	Coordinating the application of new methods, informing NRLs on advances in the field and conducting training courses	Annual workshop and training courses for NRLs where the specific NRL needs and experiences in GMO analysis are discussed, including the outcome of comparative testing. Training activities organised by the EURL in response to the needs expressed by NRLs. Such trainings are also open to experts in third countries according to the Regulation.	31/12/2019	Training
												11	Providing scientific and technical assistance to the Commission	Support provided in cases of e.g. unauthorised GMOs on the EU market, RASFF notifications, preparation of specific legislation, reporting to Member States and any other accepted request of DG SANTE.	31/12/2019	JRC technical reports
												12	Harmonised conversion factors for GMO testing	Study which will be organised by the EURL to assign numerical conversion factors to certified values of certified reference materials. These factors are required to convert the analytical results from one unit of measurement (e.g., DNA copy number ratio) to another (e.g., mass fraction) in a harmonised manner thus completing the necessary reference measurement systems. The study requires laboratory activities.	31/12/2019	Validated methods, Reference methods and measurements
												13	Providing information on relevant national, Union and international research activities to national reference laboratories	This task will be carried out by sharing the relevant information, acquired also by attending selected conferences, through the ENGL network and during the annual workshop with NRLs	31/12/2019	JRC technical reports
												14	Providing reference materials to national reference laboratories	Reference Materials for GMO analysis (detection, identification and quantification) are provided to NRLs.	31/12/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
204 - Compliance JRC.F.5	6203 - GMO control GMO control		JRC.F.5 Wim BROOThAERTS	1.5.2.a	SANTE	SANTE	n/a	GROW TRADE	ENGL - European network of GMO laboratories NRLs - NRLs - national reference laboratories	01/01/2018 31/12/2020	CON-AA	15	Comparative (proficiency) testing	Coordination of the application by the national reference laboratories and, if necessary, by other official laboratories of the methods of analysis, in particular, by organising regular inter-laboratory comparative testing or proficiency tests and by ensuring appropriate follow-up of such comparative testing or proficiency tests in accordance, where available, with internationally accepted protocols, and informing the Commission and the Member States of the results and follow-up to the inter-laboratory comparative testing or proficiency tests.	31/12/2020	JRC technical reports	
												16	Provision of Reference Methods	Validated methods are provided to National Reference Laboratories and official control laboratories through the publicly available GMO Methods Database. If a need to fill analytical gaps in the detection of unauthorised GMOs is signalled through the ENGL, up to two new screening methods per year are validated and included in the GMO Methods Database. In addition, methods of analysis/testing of high standards are developed, if needed in cooperation with other EURLs and the Commission.	31/12/2020	JRC technical reports	
												17	Coordinating the application of new methods, informing NRLs on advances in the field and conducting training courses	Annual workshop and training courses for NRLs where the specific NRL needs and experiences in GMO analysis are discussed, including the outcome of comparative testing. Training activities organised by the EURL in response to the needs expressed by NRLs. Such trainings are also open to experts in third countries according to the Regulation.	31/12/2020	Training	
												18	Providing scientific and technical assistance to the Commission	Support provided in cases of e.g. unauthorised GMOs on the EU market, RASFF notifications, preparation of specific legislation, reporting to Member States and any other accepted request of DG SANTE.	31/12/2020	JRC technical reports	
												19	Harmonised conversion factors for GMO testing	Study which will be organised by the EURL to assign numerical conversion factors to certified values of certified reference materials. These factors are required to convert the analytical results from one unit of measurement (e.g., DNA copy number ratio) to another (e.g., mass fraction) in a harmonised manner thus completing the necessary reference measurement systems. The study requires laboratory activities.	31/12/2020	Validated methods, Reference methods and measurements	
												2	Provision of Reference Methods	Validated methods are provided to National Reference Laboratories and official control laboratories through the publicly available GMO Methods Database. If a need to fill analytical gaps in the detection of unauthorised GMOs is signalled through the ENGL, up to two new screening methods per year are validated and included in the GMO Methods Database. In addition, methods of analysis/testing of high standards are developed, if needed in cooperation with other EURLs and the Commission.	31/12/2018	JRC technical reports	
												20	Providing information on relevant national, Union and international research activities to national reference laboratories	This task will be carried out by sharing the relevant information, acquired also by attending selected conferences, through the ENGL network and during the annual workshop with NRLs	31/12/2020	JRC technical reports	
												21	Providing reference materials to national reference laboratories	Reference Materials for GMO analysis (detection, identification and quantification) are provided to NRLs.	31/12/2020	JRC technical reports	
												3	Coordinating the application of new methods, informing NRLs on advances in the field and conducting training courses	Annual workshop and training courses for NRLs where the specific NRL needs and experiences in GMO analysis are discussed, including the outcome of comparative testing. Training activities organised by the EURL in response to the needs expressed by NRLs. Such trainings are also open to experts in third countries according to the Regulation.	31/12/2018	Training	
												30	Analytical performance of control laboratories	Data produced by the laboratories participating to the Comparative Testing studies organised by the EURL GMFF are analysed to show trends, achievements and corrective actions in the analytical activity of control laboratories.	31/08/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												4	Providing scientific and technical assistance to the Commission	Support provided in cases of e.g. unauthorised GMOs on the EU market, RASFF notifications, preparation of specific legislation, reporting to Member States and any other accepted request of DG SANTE.	31/12/2018	JRC technical reports	
												5	Harmonised conversion factors for GMO testing	Study which will be organised by the EURL to assign numerical conversion factors to certified values of certified reference materials. These factors are required to convert the analytical results from one unit of measurement (e.g., DNA copy number ratio) to another (e.g., mass fraction) in a harmonised manner thus completing the necessary reference measurement systems. The study requires laboratory activities.	30/06/2019	Validated methods, Reference methods and measurements	
												6	Providing information on relevant national, Union and international research activities to national reference laboratories;	This task will be carried out by sharing the relevant information, acquired also by attending selected conferences, through the ENGL network and during the annual workshop with NRLs	31/12/2018	JRC technical reports	
												7	Providing reference materials to national reference laboratories;	Reference Materials for GMO analysis (detection, identification and quantification) are provided to NRLs.	31/12/2018	JRC technical reports	
												8	Comparative (proficiency) testing	Coordination of the application by the national reference laboratories and, if necessary, by other official laboratories of the methods of analysis, in particular, by organising regular inter-laboratory comparative testing or proficiency tests and by ensuring appropriate follow-up of such comparative testing or proficiency tests in accordance, where available, with internationally accepted protocols, and informing the Commission and the Member States of the results and follow-up to the inter-laboratory comparative testing or proficiency tests;	31/12/2019	JRC technical reports	
9	Provision of Reference Methods	Validated methods are provided to National Reference Laboratories and official control laboratories through the publicly available GMO Methods Database. If a need to fill analytical gaps in the detection of unauthorised GMOs is signalled through the ENGL, up to two new screening methods per year are validated and included in the GMO Methods Database. In addition, methods of analysis/testing of high standards are developed, if needed in cooperation with other EURLs and the Commission.	31/12/2019	JRC technical reports													
		The JRC has the legal obligation to host the European Union Reference Laboratory for Feed Additives Control (EURL-FAC), because EU legislation specifies that the EURL described in WPK 604 is also the EURL-FAC. The designation of the EURL-FAC is provided by Article 32 of Regulation (EC) No 882/2004. This Regulation is repealed on 29 April 2018 by Regulation (EC) No 2017/625 of the European Parliament and of the Council on official controls and the designation of the EURL-FA as EURL-FAC is stated in its Article 93. Consequently, the EURL-FAC has to fulfil the tasks stipulated by Article 32 of Regulation (EC) No 882/2004 and by Article 94 of Regulation (EU) 2017/625. In particular, the EURL-FAC coordinates a network of National Reference Laboratories (NRLs) with										1	Inter-laboratory comparative (proficiency) testing	Design, organisation and execution of inter-laboratory comparative (proficiency) testing with the aim of coordinating the harmonised application of methods of analysis by the NRLs and, if necessary, by other official control laboratories. Ensuring appropriate follow-up of such comparative testing in accordance with, where available, internationally accepted protocols, and informing the Commission and the Member States on the results and specific follow-up actions.	31/12/2019	JRC technical reports	
													2	Provision of Reference Methods	Validated methods are provided to NRLs and official control laboratories through the devoted EC platform and/or upon request. Additionally the EURL-FAC strongly collaborates with the EU Standardisation body for the validation of new reference methods for testing.	31/12/2019	Validated methods, Reference methods and measurements

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
204 - Compliance JRC.F.5	6204 - FA Control EURL Feed Additives Control	the aim of ensuring the quality and comparability in the official control of the levels of additives added to feed. It also contributes to the improvement of methods of analysis by providing training and guidance to the NRLs when relevant. Furthermore it contributes to the harmonisation of methods of analysis by organising proficiency tests (including the preparation, characterisation and dispatch of the test materials, the data treatment, interpretation of results and reporting to the NRLs and DG SANTE), ensures the follow-up of underperforming laboratories and provides support to NRLs (scientific advice and/or support for implementation) and DG SANTE in technical matters concerning analytical methods. The EURL-FAC has also to organise annual workshops and maintains the CIRCA-BC platform for information exchange among the EURL and NRLs. Finally, it performs pre-normative and normative developments of new analytical methods by organising inter-laboratory comparisons and contributing to the drafting of documentary standards in the frame of CEN. This WPK contributes mainly to the JRC Nexus (iv) Food, nutrition and health, and to the "Reinforcing support to EU policy and political priorities" of the JRC 2030 strategy.	JRC.F.5 Ursula VINCENT	1.5.2.a	SANTE	SANTE	n/a		CEN - European Committee for Standardization NRLs - NRLs - national reference laboratories	01/01/2018 31/12/2020	CON-AA	3	Coordinating practical arrangements necessary to apply new methods, informing and exchanging with NRLs on advances in the field and conducting training courses for staff of NRLs and OCLs	Annual workshop where the specific NRL needs and experiences are discussed, including the outcome of proficiency testing and training topics for NRLs. Further training program set-up by the EURL to address underperformance in proficiency tests when relevant. Such trainings are also open to experts from third countries according to the Regulation. Maintenance of the dedicated CIRCA-BC platform for information exchange with the NRLs.	31/12/2018	Training
												4	Providing scientific and technical assistance to the Commission	Scientific advice and/or support for implementation in technical matters concerning analytical methodology for the analysis of feed additives, if requested.	31/12/2018	JRC technical reports
603 - CC-ME JRC.I.1	6466 - CC-ME.SANTE CC-ME SANTE	CC-ME will provide different types of support to DG SANTE in setting the evaluation plans for the measures covered by Regulation (EU) No 652/2014, also referred to as Common Financial Framework for the food chain area (CFF): i) a guidance document on cost-effectiveness methodology fitting the four CFF spending areas, namely food safety, animal health, plant health, and official controls; ii) a number of specific cost-effectiveness indicators addressing each of the spending areas above; iii) support on the aggregate evaluation of the measures covered by the CFF at the EU level; iv) and support to perform the evaluation of studies for specific measures financed by the CFF, whenever micro-data are available.	JRC.I.1 SOPHIE GUTHMULLER	1.5.2.a	SANTE	SANTE	n/a			01/10/2017 31/03/2018	CON-AA	03	Literature review – Final Report	CC-ME will produce a literature review on food crisis, food crisis, animal disease and/or plant pests. The focus of the literature review will be decided together with DG SANTE and based on a list of at most 60 published papers agreed upfront.	16/02/2018	Science-for-policy reports
1.5.2.b food and feed quality and fraud - manage a Knowledge Centre on Food Fraud and Quality (see also key orientation 7.1.b); assist in the fight against food fraud; produce certified reference materials for food and feed analysis; develop a harmonised testing approach to assess alleged differences in quality of food products.																
341 - Reference Materials JRC.F.6	344 - FFRMs Food and feed Reference Materials	This work package develops Reference Materials (RMs), including certified reference materials, required for the implementation of EU food and feed legislation, in particular for the quantification of GMOs in food and feed products, the monitoring of microbiological criteria in foodstuffs and the quantification of contaminants and residues in food. GMO companies need to ensure that GMO CRMs which are produced according to ISO Guide 34 (future ISO 17034) criteria, are made available to fulfil the EU authorisation requirements laid down in (EC) No 1829/2003 and (EC) No 619/2011. Furthermore, RMs are developed for the monitoring of microbiological criteria as laid down in (EC) No 1441/2007, RMs and in support of (EC) No 853/2004 on hygiene rules for food and RMs for the detection of toxins in food in support of (EC) 2073/2005. Moreover, this work package produces RMs supporting the implementation of (EC) No 1881/2006 and (EC) No 396/2005 about contaminants and residues in food. There is a particular focus on the development of RMs for pesticides (also being potential endocrine disruptors), mycotoxins and trace elements in food. The RMs produced in this work package are used by official testing laboratories, such as the National Reference Laboratories, and commercial testing laboratories for calibration and quality control of measurements required for food and feed compliance controls as demanded by EU food and feed legislation.	JRC.F.6 Stefanie TRAPMANN	1.5.2.b	SANTE	JRC	Ilaria CIABATTI (SANTE E3) Koen Van Dyck (SANTE G4) Almut Bitterhof (SANTE E4) Frans Verstraete (SANTE E2)		ENGL - European network of GMO laboratories EU-RL Bivalve molluscs - European Union Reference Laboratory (EURL) for monitoring bacteriological and viral contamination of bivalve molluscs EU-RL Lm - European Reference Laboratory for Listeria monocytogenes EU-RL M - European Reference Laboratory for Mycotoxins EU-RL MMP - European Reference Laboratory for Milk and Milk Products EURL CPS - European Union	01/01/2014 31/12/2018	INS-RS	11	Development of reference materials for the implementation of EU food and feed legislation	Development and production of reference materials and certified reference materials for the implementation of EU food and feed legislation, including the related certification reports and scientific papers. This also includes the production of samples used in comparative testing exercises.	31/12/2018	Reference Material
68 - KCFQ JRC.F.4	730 - FoodIntegrity Participation in FP7 project "Ensuring the Integrity of the European food chain (FoodIntegrity)"	This project aims to develop systems for horizon scanning of emerging food fraud issues by examining correlations between commodity prices and fraud incidents, and to link them to differences between production of certain foods and traded volumes. 2018 is the last year of the project which is foreseen for the dissemination and communication. JRC will host and enlarge the Knowledge Base (datbank on analytical methods) developed within FoodIntegrity and continue its operation beyond the lifetime of the project and contribute to the final report on future research needs.	JRC.F.4 Alain MAQUET	1.5.2.b	SANTE	RTD	Sandra Tuijelaars, DG RTD E 3, alexandra.tuijelaars@ec.europa.eu; Sandrine Valentin, AGRI DDG2.C.2			01/01/2014 31/12/2018	CON-IA	D1	Analytical methods knowledge base for food authenticity	On-line, open-access database for analytical methods required to check authenticity of a prioritised list of food commodities and ingredients.	31/12/2018	Scientific information systems and databases
68 - KCFQ JRC.F.4	2020 - OLEUM Advanced solutions for assuring authenticity and quality of olive oil at global scale	The overall objective of OLEUM, which has been initiated by DG AGRI, is to better ensure olive oil quality and authenticity, improving detection methods and supporting the prevention of fraud in the olive oil sector. Four main areas will be addressed through research and development, i.e. legislative and regulatory aspects, analytical methodology, harmonisation and coordination, and consumer science and market confidence. JRC will be involved in work packages related to (i) creation database to collect compositional data generated by applying different analytical techniques (NMR and vibrational spectroscopy, chromatography, etc), (ii) gap analysis of current approaches to detect adulterated olive oil, (iii) feasibility study for the preparation of reference materials for sensory analysis of olive oil.	JRC.F.4 Alain MAQUET	1.5.2.b	AGRI	RTD	Jesus ZORRILLA TORRAS, AGRI.DDG2.C.2, jesus.zorrilla@ec.europa.eu	SANTE TAXUD	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)	01/09/2016 31/08/2020	CON-IA	D2	Beta-version of the OLEUM Databank	The OLEUM databank will collect the scientific output of the project in terms of compositional data of olive oil including spectral fingerprints (NMR, IR, MS spectra), which can be used for authentication of olive oil using multivariate statistical routines. NOTE: An annual report summarising the contributions of the JRC to the OLEUM project in 2018 (update on common and emerging frauds; identification and classification of gaps in the normative framework; optimisation of a method suitable for their quantification of volatile compounds) will be submitted to the overall project co-ordinator as an ARES note.	30/12/2018	Scientific information systems and databases
68 - KCFQ JRC.F.4	3941 - Food fraud Detection of fraud in the food chain	The WPK will develop, optimise, validate and implement tools to fight food fraud. The electronic media monitoring MediSys tool for picking up early signs of fraud in the food chain will be improved in collaboration with RIKILT (NL) and linked to a methods database, which will allow searching for appropriate analytical methods for fraud detection. Existing competences as well as information systems related to food fraud detection in the Member States will be mapped using the TIM tool to strengthen synergies among different actors, increase their power to prevent food fraud in Europe, and offer a centralised service to authorised users to control food fraud. As an associated partner in the "SEATRACES" proposal within the Interreg Atlantic Area 2014-2020 call financed by the European Regional Development Fund (ERDF) the activities to detect fraud in the fisheries sector will continue. The power of Next Generation Sequencing (NGS) and NMR as well as mass spectrometry based metabolomics for authentication of food products will be explored as well.	JRC.F.4 Alain MAQUET	1.5.2.b	SANTE	JRC	Eric MARIN, SANTE E.5	AGRI MARE TAXUD	MS EU - Member states EU	01/01/2017 31/12/2018	INS-RS	D1	European honey databank	i) an extension of the honey databank including authentic samples, validated LC-IRMS data, NMR and HRMS results; ii) results of the interlaboratory comparison exercises of LC-IRMS, NMR and HRMS; and iii) evaluation of the performances of spectroscopy.	31/12/2018	Scientific information systems and databases
												D4	2017 Report on the integration of JRC databanks	Progress made so far on i) gaps to solve IPR and access rights; ii) technical tools to allow registration of high throughput data from diverse platforms and their pre-treatments; the development of a flexible ontology and database management to cover various matrices, experimental designs, analytical methods and instrumentations.	31/07/2018	JRC technical reports
												D5	Scientific dissemination	Peer-reviewed papers regarding the application of advanced technologies for detecting food fraud.	31/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												D6	Management of the Knowledge Centre for Food Authenticity	The report will summarise the achievements of the first year of the operation of the KCFA, i.e. an improved web crawler (MediSys) tool for the JRC Food Fraud Reporter as an early warning tool, a mapping of food fraud related competencies (infrastructure, knowledge, IT tools) and responsibilities in the Member States and COM services; gap analysis and action plan for tools needed to fight food fraud; the proceedings of an annual workshop for Food Fraud Practitioners.	01/12/2018	JRC technical reports
68 - KCFQ JRC.F.4	5761 - ERC-CWS 2017 European Reference Centre for Control in the Wine Sector 2017	Regulation (EC) No 555/2008 mandates JRC to host and manage the EU Wine Databank. As a requirement, JRC will organise proficiency tests. The new online database developed in 2016 will be extended with application tools. Several analytical methods will be evaluated with the collaboration of the Member State Designated Laboratories (MSDLs) network for wine authentication. In addition, JRC will chair the DG AGRI expert board in monitoring water content in poultry meat.	JRC.F.4 Alain MAQUET	1.5.2.b	AGRI	AGRI	Antoine MICHOTTE RENIER	SANTE	MS EU - Member states EU	01/05/2017 30/04/2018	CON-AA	10	Water content in Poultry meat	A report will be produced summarising the activities coordinated by the Board of Experts in Monitoring Water Content in Poultry Meat for the network of NRLs.	31/03/2018	JRC technical reports
												20	ERC-CWS 2017 Yearly report	The report will summarise the outcomes of the annual work programme including the minutes of the meetings, feasibility study of several analytical methods (e.g. DNA fingerprinting, NMR, High Resolution Mass Spectrometry, Spectroscopy) suitable to identify the geographical origin of wine and the variety identification, the design of a database to store the results, the extension of the current EU wine databank for the isotopic measurement of wines produced in third countries	30/04/2018	JRC technical reports
												40	2017 Report on the proficiency testing (PT)	A report on the assessment and documentation of the reliability of the data produced by the MSDLs network demonstrating competence to the customers and to the accreditation bodies	30/04/2018	JRC technical reports
												50	Review in peer-reviewed journal	The existing approaches of authenticating wines according to geographical and varietal origin will be reviewed with a special emphasis whether requirements for taking regulatory actions have been considered.	30/04/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
68 - KCFQ JRC.F.4	6180 - ERC-CWS 2018 European Reference Centre for Control in the Wine Sector 2018	Commission Regulation (EC) No 555/2008 mandates JRC to host and manage the EU Wine Databank. As a requirement, JRC will organise and participate to proficiency tests. The EU Wine Databank and an efficient coordination and collaboration within the Member State Designated Laboratories (MSDLs) network are potent tools to fight fraud in the wine sector, in particular chaptalisation and watering. In addition, the wine reforms of 2008 and 2013 have confirmed the importance of EU quality wines linked to their geographical origin (protected designation of origin - PDO and protected geographical indication - PGI) and varietal identification. Risk of fraud related to origin/variety exists, consequently, several analytical methods are under evaluation with the collaboration of the MSDLs network for wine authentication. The new online database developed in 2016 will be extended with application tools. In addition, JRC will chair the DG AGRI expert board in monitoring water content in poultrymeat as mandated by Regulation (EC) No 543/2008.	JRC.F.4 Alain MAQUET	1.5.2.b	AGRI	AGRI	n/a	SANTE	MS EU - Member states EU	27/04/2018 26/04/2019	CON-AA	1	Support to DG AGRI and Member States on wine related fraud issues	- Results and interpretation of the proton NMR applied for a metabolomics approach to authenticate wines. - Harmonised Standard Operating Procedure (SOP) describing the use of High Resolution Mass Spectrometry for a metabolomics approach to authenticate wines. - Results on the feasibility study on the potential of applying Next Generation Sequencing and spectroscopy to authenticate wines. - Updated version of the EU Wine Databank. - Accreditation of the isotopic ratio mass spectrometry for official support to Member States. - Report on the Proficiency tests related to isotopic measurements.	31/12/2018	JRC technical reports
												2	Support to DG AGRI and Member States on monitoring water content in poultrymeat	The JRC will set the agenda for the annual NRL meeting and the special expert group meeting in a Member State including visits of slaughter houses and related installations. The JRC will also be involved in the preparation and evaluation of a collaborative trial for the validation of methods to determine the water and protein contents, respectively, in poultrymeat.	31/03/2019	JRC technical reports

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68 - KCFQ JRC.F.4	6349 - EU-China-Safe Delivering an effective, resilient and sustainable EU-China food safety partnership.	EU-China-Safe will mobilise resources in Europe and China to develop a cohesive partnership that will deliver a shared vision for food safety and authenticity and work towards "mutual recognition". EU-China-Safe will build the core components needed for a joint EU-China food safety control system comprising: control management, food legislation, food inspection, food control laboratories, and food safety and quality information, education and communication. These advances, in addition to a wider range of confidence building measures towards food safety, authenticity and transparency, will address consumer expectations and facilitate an expansion of EU-China trade. JRC will contribute to the development, knowledge transfer and implementation of innovative research methods and processes for combating food fraud. Methodologies for detection of food fraud developed both in the EU and China will be transferred both ways, from the EU to China, and from China to the EU. Methods from previous research and established practices (in the EU and China) will be exchanged and implemented. JRC as the manager of the EU wine databank according to regulation (EU) no. 555/2008 will participate in the organisation of a workshop for the Chinese partners to	JRC.F.4 Alain MAQUET	1.5.2.b	SANTE	RTD	n/a	AGRI		01/09/2017 31/08/2021	CON-AA	1	JRC's contribution to the development of a common EU-China vision of global food authenticity issues	The final report on the JRC's activities in this H2020 project will summarise the contributions to: - Collection, harmonization, sharing and archiving of data collected and generated by the project. - Transfer and implementation of fraud detection methods related to wine. - Updating project website. - Developing a Training program. - Annual e-Newsletter. NOTE: Annual progress reports will be sent to the coordinator of the project as ARES notes and registered in PUBSY as category 7.2 output.	30/06/2021	JRC technical reports
213 - TMA CC JRC.I.3	6550 - EFSACOM 2018 EFSACOM 2018	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the requirements of the EFSA COM directorate.	JRC.I.3 Jens LINGE	1.5.2.b	SANTE	n/a	n/a	COMM HOME	EFSA - European Food Safety Authority	01/01/2018 31/12/2018	CON-TW	EFSACOM2 018	Media Monitoring for EFSA COM team	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the requirements of the EFSA Communications directorate.	31/12/2018	Technical systems
68 - KCFQ JRC.F.4	6681 - NGF Next generation DNA fingerprinting (NGF) for untargeted species identification	The NextGenFingerprinting (NGF) project contributes to the Exploratory Research (ER) Programme European actions to fight food fraud have increased during the last decade, and one of the most important authentication issues is species identification. The ER NGF project aims to explore the possibility to include several different DNA markers in one new and combined fingerprinting approach. Through universal primers, DNA markers will be amplified, such as DNA barcode regions, restriction sites, insertions/deletions, microsatellites, and single nucleotide polymorphisms. The amplified DNA markers will be subjected to a restriction endonuclease cleavage followed by high resolution melting analysis (fingerprint). This analytical strategy, called next generation DNA fingerprinting (NGF), will take DNA fingerprinting to a level of complexity that has not yet been introduced to molecular biology. The generated DNA fingerprints and a chemometric analysis will assign the species identity through a database comparison. The NGF method will be universal for plants and more discriminative compared to current methods. Additionally, NGF will require no a priori knowledge of the species' DNA sequence. The entire method takes place in a closed system within two to three hours with a reduced cost per sample compared to other identification methods. Plants will be used as a model system.	JRC.F.4 Alain MAQUET	1.5.2.b	JRC	JRC	n/a	SANTE	MS EU - Member states EU	01/01/2018 31/12/2018	INS-ER					
68 - KCFQ JRC.F.4	7142 - MAHONEY The potential of mapping landscape suitability for honey bees to target geographical regions vulnerable to honey fraud	The project aims at studying the relation between factors influencing honey production and the incidence of fraud in honey production, with the aim of defining a strategy to better detect, map and counter fraud. It is based on a spatially-explicit approach to detect honey fraud by high resolution mapping of the environmental conditions and habitat suitability for honey bee and by validating the model predictions with chemical analyses of honey samples. The proposal is exploratory and goes beyond traditional intra-field/discipline approaches by combining JRC knowledge and competences; it is a good example of 'thinking out of the box'. The starting scientific hypothesis should be reformulated in the sense the hypothesis should contemplate all possible correlations between the suitability of the environment for honey production and the number of fraud incidents. Recognising this, the project has a clear potential impact on societal and policy challenges as the outcome may contribute to the definition of a more efficient strategy for sampling for inspection.	JRC.F.4 Alain MAQUET	1.5.2.b	JRC	JRC	n/a	AGRI ENV SANTE	MS EU - Member states EU	15/01/2018 14/01/2020	INS-ER	1	Annual progress report	Report on the progress achieved so far during the first year of the project. It will include information on a first set of honeybee habitat suitability maps from selected regions, highlighting areas more and less vulnerable to honey fraud.	31/12/2018	External study reports
1.5.2.c plant health - protect plant health through early detection and plant health monitoring initiatives; support the establishment of a priority list of plant pests in the Union.																
701 - NC-Forest JRC.D.1	3628 - CANHEMON Remote sensing based forest canopy health monitoring to support measures against the spread of pests	This project will research and implement remote sensing based monitoring of forests, at or near the level of individual tree crowns in the context of an ongoing phytosanitary crisis, namely the outbreak of Pine Wood Nematode (PWN) in Portugal. The work will support DG SANTE and Portuguese and Spanish plant health authorities in their forest management to contain the ongoing outbreak of PWN. Under this project, monitoring methods are being developed at JRC with the longer term goal of establishing the capability to deploy them in other plant health emergencies as well.	JRC.D.1 PIETER BECK	1.5.2.c	SANTE	SANTE	PASQUALE DI RUBBO	AGRI ENV	- ISTITUTO AGRONOMO MEDITERRANEO DI BARI EEA - European Environment Agency EFSA - European Food Safety Authority	29/07/2015 28/06/2018	CON-AA	3	Evaluation of next-generation satellite sensors	Evaluation of next-generation satellite sensors for canopy health monitoring	28/06/2018	JRC technical reports
701 - NC-Forest JRC.D.1	3873 - CANHEMON 2 Remote sensing based tree canopy health monitoring to support measures against the spread of pests	This project will implement remote sensing based monitoring of trees, at or near the level of individual crowns in the context of two ongoing phytosanitary crises, namely the outbreak of Pine Wood Nematode in Portugal and that of Xylella fastidiosa in Italy	JRC.D.1 PIETER BECK	1.5.2.c	SANTE	SANTE	Pasquale DI RUBBO (SANTE.DDG2.G.1)	AGRI ENV	- ISTITUTO AGRONOMO MEDITERRANEO DI BARI EEA - European Environment Agency EFSA - European Food Safety Authority	01/09/2017 31/12/2019	CON-AA	1	Canopy Health maps Pine Wood Portugal	Maps describing the health of the coniferous forest canopy the Pine Wood Nematode buffer zone, Portugal	28/02/2019	Datasets
												2	Canopy Health maps for the Xylella fastidiosa buff Italy	Maps describing the health of the olive grove canopy in the Xylella fastidiosa buffer zone in Puglia, Italy	28/02/2019	Datasets
												3	Remote sensing-based pest monitoring guidelines	A description of best practices for the optimization of remote sensing based monitoring of forests, and trees in general, in the context of forest pest outbreaks.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												4	Scientific publications	Scientific publications detailing new advances in the remote sensing based detection and management of tree pests	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
701 - NC-Forest JRC.D.1	4760 - XF-ACTORS Xylella fastidiosa Active Containment Through a Multidisciplinary-Oriented Research Strategy	The work package will develop and demonstrate methods for the detection of symptoms associated with Xylella fastidiosa infection in Olive trees using remote sensing. It will capitalize on the larger XF-ACTORS consortium that will include intensive environmental and physiological monitoring of trees, leaf and plant-level spectral monitoring of plants during Xylella fastidiosa infection. The work package at JRC will take lessons learnt from these field and lab studies and scale them towards large-area monitoring of olive groves using aircraft for the early detection and damage mapping of Xylella fastidiosa.	JRC.D.1 PIETER BECK	1.5.2.c	SANTE	RTD	Pasquale DI RUBBO (SANTE.DDG2.G.1)	AGRI ENV		01/12/2016 30/11/2020	CON-IA	1	JRC contributions to the XF-ACTORS H2020 project	a) A set of scale-appropriate techniques for the remote sensing-based monitoring of olive-dominated landscape for the early detection and damage mapping of Xylella fastidiosa infection. b) Pre-operational implementation of remote sensing based monitoring of an olive-tree dominated landscape at the forefront of the Xylella fastidiosa outbreak.	30/11/2020	JRC technical reports
156 - IMAP JRC.D.4	6064 - PLANTHEALTH Economic impacts of priority pests for EU agriculture	The increasing threat of plant pests is a worldwide phenomenon mainly due to the recent globalization of the plant trade and the effects of climate change. In the last decade, the EU has been confronted with several large scale outbreaks of new plant pests. These pests, of particular importance for the Union territory, deserve better preparedness from EU side in case of crisis situations. In this respect, pursuant to Article 6(2) of the new Regulation on protective measures against pests of plants (the "new Plant Health law"), the Commission is empowered to adopt a delegated act, establishing a list of Union Quarantine pests which qualify as priority pests. Pests will be classified as priority according to severity of the economic, social and environmental impacts that can cause in the Union territory. An expert working group will be established soon at Commission level in order to ensure proper discussions with Member States in the course of 2017 and start legal drafting and inter-service consultation in 2018. The list of priority pests should be adopted by the Commission and Member States well in advance of the application of the new Regulation (estimated by beginning of 2020).	JRC.D.4 Jesus BARREIRO HURLE	1.5.2.c	SANTE	SANTE	n/a	AGRI	EFSA - European Food Safety Authority	01/01/2018 31/05/2019	CON-AA	D1	JRC Technical Report on methodologies to assess priority pests	The JRC will develop a methodological proposal to implement the conditions for identification of priority pests. This proposal will build on the soundest scientific evidence available on the field of MCDA and composite indicators and take into account all criteria mentioned in Annex I of Regulation 2016/2031. It will also propose indicators and thresholds for each of the criteria.	30/03/2018	JRC technical reports
												D2	Application of the methodology to two pilot examples	The agreed methodology together with the estimated weights will be applied to two pests selected by DG SANTE. Based on available statistics, literature and distribution maps for the pests the JRC will quantify the indicators for each criteria and pest and provide the relative ranking of the two pests using the different weights estimated in task 2. For this tasks close collaboration with EFSA risk assessment team and relevant H2020 projects such as PONTE (www.ponteproject.eu) and XF-ACTORS.	30/03/2019	Science-for-policy reports
1.6. Regional policy																
1.6.a territorial modelling for impact assessment of policies and investments - develop a capacity to do integrated modelling to better assess the impact of investments and policies in regions, cities and macro-regions, including demographic trends, and climate change impacts.																
		LUISA is a modelling platform developed by the EC-JRC to support territorial impact assessment of policies which have direct or indirect spatial implications, such as regional policy, transport, environment, energy. It is a pillar of the pilot Knowledge Centre for Territorial Policies and interacts with the Knowledge Centre for Demography and Migration and with the Competence Centre on Modelling, It										201801	Definition of regional scenarios and spatial factors, on top of reference demographic projections trends from EUROSTAT. Collaboration with KC for Migration and Demography (WpK 355-KCMD)	Scenario of inter-regional (between NUTS3) movements based on employment opportunities and other economic and spatial factors, on top of reference demographic projections trends from EUROSTAT. Collaboration with KC for Migration and Demography (WpK 355-KCMD)	15/12/2018	JRC technical reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
488 - TERMOD_INVEST JRC.B.3	1007 - LUISA Application of the LUISA Modelling Platform to Cohesion and Investment Policies	<p>contributes to horizontal project on Resilience, Fairness and to the Cities Initiative LUISA allows investigating and understanding territorial dynamics in a wider continental dimension, while considering local and regional driving forces.</p> <p>1. LUISA's standard configuration is consistent with the most recent EU socio-economic assumptions and projections, and it incorporates observed trends and preferences, as well as existing policies. Alternative scenarios which consider different assumptions and/or alternative policies can be simulated in order to gain insight on their potential territorial implications</p> <p>The main output from LUISA are in the form of indicators of territorial performances covering the following fields:</p> <ol style="list-style-type: none"> 1. Demographic change, population distribution and migrations 2. Economic performances (e.g. GDP, sectoral production, employment, convergence, ...) 3. Access to services (e.g.: to public structures, recreational and cultural sites, ...) 4. Infrastructures for housing, transport, energy and other services 5. Environmental performances (e.g. pollution levels and mitigation measures) 6. Patterns of Energy Production/Consumption at regional and urban scale 7. Urban growth <p>LUISA is a component of the EC Toolbox#33 for Territorial Impact Assessment (Better Regulation Package) and key tool for REGIO for the evaluation of cohesion policies. Reference scenario is regularly up-dated, and also consider National policies in collaboration with OECD.</p> <p>A notably relevant effort in 2019-20 is devoted to the analysis of determinant of urban and regional growth and their application for the definition of policy-scenario.</p>	JRC.B.3 Carlo LAVALLE	1.6.a	REGIO	JRC	Lewis DIJKSTRA	CLIMA ECFIN ENER ENV ESTAT GROW RTD SG	CoR - Committee of the Regions EEA - European Environment Agency EIB - European Investment Bank OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank	01/01/2016 31/12/2020	INS-RS	201802	Contribution to the Seventh Cohesion Report, IA of post-2020 Cohesion Policies and Regional Outlook (OECD)	This involves the setting up and modelling of policy scenarios that take into account country- and regional-specific policies and conditions. Thematic analysis is performed on territorial indicators produced by LUISA, in combination with information generated by EC internal and external sources.	31/12/2018	JRC contributions to policy documents
												201803	What contributes to overall city attractiveness?	Meta-analysis of factors contributing to city attractiveness within its regional context, taking into account the role of all stakeholders (citizens, institutions, businesses, and the research community). A library of best practices will be developed in conjunction with the Urban Data Platform and city profiling from LUISA will help to identify the most effective measures according to specific city characteristics. Joint work with CC COIN and MIT Lab. Related to the CITIES Initiative	14/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201804	Spatiotemporal study of population densities	To exploit the final outputs of ENACT, in the form of population maps per population sub-groups and per month and day/night, to derive new applied analyses / new indicators. Includes issues related to poverty and deprived neighborhoods (link to Fairness project and GSHL). Update of day- and night-time population maps to year 2015.	31/12/2018	JRC technical reports
												201901	Determinants of Urban and Regional growth	(initial selection of determinants: human capital, agglomeration economies, spatial spill-over, access to market and services); b. Short-run growth in relation to specific elements of 'territorial capital' and macroeconomic context (this aspect directly interact with the resilience framework)	30/09/2020	JRC technical reports
488 - TERMOD_INVEST JRC.B.3	2002 - IAM-SUL Integrated Assessment Methodologies to promote Sustainable and resilient Urban Living	<p>IAM-SUL develops a framework to support the implementation and assess the impact of urban/regional strategies that aim to foster sustainable development. The approach is based on the application of integrated assessment tools, among which SHERPA is the main instrument. The framework is based on:</p> <ol style="list-style-type: none"> (1) collecting and integrating urban/regional measures, with a particular focus on the transport, energy and residential sectors (2) developing and applying integrated assessment tools to support local to EU-wide impact assessments (3) harmonizing and standardizing modeling methodologies across Member-States (4) fostering capacity building across and outside of the EU <p>IAM-SUL is instrumental in supporting the objectives of growth and competitiveness of European cities and metropolitan areas in the context of the EU Structural and Investment Funds. By supporting "urban proofing", i.e. by ensuring that urban aspects are adequately accounted for in EU legislation, IAM-SUL also contributes to "better EU regulation". IAM-SUL allows for a better integration of local measures acting on air quality improvement, climate change mitigation, clean energy and sustainable mobility. IAM-SUL supports the "urban agenda" through the active participation to the "Partnership on Air Quality", an EU initiative to strengthen ties between the Member States of the European Union, national parliaments, regions and cities to tackle urban challenges. Collaborations with China are focusing on source-apportionment and integrated assessment with the aim of exchanging experiences and best practices.</p>	JRC.C.5 Philippe THUNIS	1.6.a	REGIO	JRC	DIJKSTRA Lewis (REGIO.B.1); HENRICH Thomas (ENV.C.3)	CLIMA DEVCO ENER ENV MOVE	CEN - European Committee for Standardization EEA - European Environment Agency	01/01/2016 31/12/2021	INS-RS	201801	Capacity building for EU and non-EU Authorities	Capacity building is an important component to ensure dissemination and proper use of the Integrated Assessment tools developed by the JRC. Workshops will be organised for both EU and regional Authorities outside the EU (e.g. Iran).	30/06/2018	Training
												201802	Support to the EU partnership on air quality	One mechanism to implement the "EU Urban Agenda" is the setting up of thematic partnerships. Within these partnerships, the Commission, Member States and cities work together to ensure that the urban dimension is strengthened in EU policies. As support to the "air quality partnership", IAM-SUL will a) propose a working framework to allow interaction/exchange of data among the partnership participants, and b) assess strategies to improve air quality at city scale via IAM modelling applications	29/06/2018	JRC technical reports
												201901	SHERPA - Multi-criteria	The SHERPA tool assesses regional and urban impacts. It aims to support impact assessments by the Commission and to help national, regional and local authorities design and assess the impacts of air quality plans on air quality and climate. A multicriteria analyser will be implemented to provide insight on the impacts of their air quality plans on various aspects (air quality, green-house-gases, costs, health, quality of life...)	30/06/2019	Technical systems
												201902	Regional and urban policies for air quality	This report will explore the possible options to improve air quality in EU regions and cities. Possible measures will be detailed with their associated impacts (costs, health, green-house gases...)	01/11/2019	Science-for-policy reports
												201904	Harmonisation of air quality management practices	This report will describe the work performed in the frame of the Fairmode working group on air quality management practices which involves a series of pilot regions and cities	31/10/2019	JRC technical reports
4856 - ARCTIC JRC.C.5	2021 - PACAR Policies and atmospheric change impacting the Arctic	<p>PACAR focuses on how European and international policies on air pollution and climate impact the Arctic, by studying the atmospheric lifecycle of short-lived pollutants (such as black carbon and methane) emitted in the Northern Hemisphere and transported to the Arctic, and their potential impact on the regional climate. It also develops a set of environmental indices evaluating changes in the Arctic and impacts of modified Arctic climate on local, surrounding and global environmental conditions. Statistical methodologies are used to estimate the change and development of important environmental parameters due to climate change. By statistically processing multi-model predictions, the work package will provide information on the effect of the Arctic on the climate of the mid-latitude Northern Hemisphere, including Europe. In particular, PACAR estimates future climate impacts of black carbon in the Arctic, together with the changes in weather patterns at midlatitudes related to the enhanced warming in the Arctic. It further evaluates the impacts of measures to mitigate black carbon emissions being developed under the Arctic Council Task Force on Black Carbon and Methane, and distinguishes their impacts from the global warming. Indices relevant for the Arctic and global environmental change are defined in PACAR and applied for the present assessment and future projections with different global warming scenarios.</p>	JRC.C.5 SRDAN DOBRICIC	1.6.a	ENV	JRC	MAIRATE Andrea (REGIO.DGA2.D.1); PETERSEN Terkel (EEAS.III.B.1); CLOCCIATI Alessia (MARE.C.1); GAMBARDELLA Attilio (RTD.I.4); ENV.E.1	CLIMA MARE REGIO RTD	AACA - Adaptation Actions for a Changing Arctic AMAP - Arctic Monitoring and Assessment Programme EEAS - European External Action Service IGAC - International Global Atmospheric Chemistry (IGAC) NOAA - National Oceanic and Atmospheric Administration UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UN FCCC - UN Framework Convention on Climate Change (UN-FCCC) UNEP - United Nations Environment Programme (UNEP) US-EPA - US Environmental Protection Agency WB - World Bank WHO - World Health Organization	01/01/2016 31/12/2019	INS-RS	201702	Pressures on methane in the Arctic environment	We will examine climate impacts on sea ice melting, permafrost thawing and higher air temperatures influencing natural emissions of methane from the Arctic. By comparing processes in each of these compartments, we may infer the likelihood of potential major releases of methane from the Arctic environment.	28/02/2018	Science-for-policy reports
												201801	Aerosol transport to the Arctic: an analysis through observations and multi-model ensemble	Available global chemistry-climate model simulations and observations in the Arctic stations will be combined to estimate the trends in the last decades of black carbon and other aerosols, and evaluate the impact of changing large scale atmospheric circulation versus the anthropogenic emission trends. Predictions made by several climate models and source-receptor estimates by the FASST model will be compared to select important processes for assessing future pollution and its impact on the environmental change in the Arctic. By describing the main sources of anthropogenic pollution and distinguishing them from impacts by global climate change the deliverable will provide an estimate on how current and future policies on emissions of atmospheric pollutants modify the remote pollution and environmental change in the Arctic.	30/11/2018	Science-for-policy reports
												201802	Assessment of present environmental conditions in the Arctic	A set of indices will be calculated in order to estimate changes in the Arctic and their impacts on surrounding areas and global environment. Depending on environmental issues and available observations and model outputs indices will address changes in the atmosphere, ocean and land. Observational data and model outputs will be collected and used for calculating indices describing ongoing changes and to compare observational with model estimates.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201901	Future projections based on environmental indices	Indices developed in Deliverable 201802 will be applied with future climate scenarios in order to evaluate the possible change of future climate in the Arctic and its impact on the regional, surrounding and global environmental conditions. The analysis will be made with different climate model simulations available from CMIP5 and under different warming levels.	30/11/2019	Science-for-policy reports
141 - TEM JRC.C.6	2027 - REGIOTRANS Transport modelling and assessment tools to support EU regional and urban policy	<p>Support to DG REGIO on multimodal congestion and accessibility indicators analysis by improving and extending JRC modelling tools to support the economic analysis defining the objectives and investment priorities of EU cohesion policy, and the evaluation of its performance. More specifically, the project aims to provide support in the following five areas:</p> <ol style="list-style-type: none"> 1) Analysis and routing over detailed road networks for congestion and accessibility studies at urban and regional levels (including accessibility to population and employment and to major air/rail/maritime connectivity hubs) 2) Frequency-based analysis of public transport networks 3) Impact of cross-border effects on transport network performance 4) Impact on accessibility due to historical infrastructure investments and population dynamics 5) Integrated network-based modelling platform (interaction with LUISA and RHOMOLO) <p>The project will provide key material for the elaboration of the 3rd Cities Report and the 7th Cohesion Report.</p>	JRC.C.6 JUAN IBANEZ RIVAS	1.6.a	REGIO	REGIO	Lewis Dijkstra, REGIO.B.1	MOVE		08/07/2015 07/07/2018	CON-AA	4	Final Report 2018	Final Report on the five areas of support to DG REGIO on multimodal congestion and accessibility indicators analysis by improving and extension of JRC modelling tools to support the economic analysis defining the objectives and investment priorities of EU cohesion policy, and the evaluation of its performance.	07/07/2018	JRC contributions to policy documents
147 - REMO JRC.B.3	3485 - RHOMOLO VI Macro-economic modelling: regional and sectoral analysis (VI)	<p>Macro-economic modelling support to ex-ante policy impact assessment with regional and sectoral detail. To use the spatial computable general equilibrium model RHOMOLO to evaluate the growth and welfare effects of (i) R&D and innovation policies; (ii) human capital policies; (iii) transport infrastructure investments; (iv) territorial impact assessment; and (v) structural reforms. The development, maintenance and update of the RHOMOLO model, which is linked and aligned with the dynamic macroeconomic model QUEST.</p>	JRC.B.3 Andrea CONTE	1.6.a	REGIO	REGIO	Philippe MONFORT	ECFIN EMPL RTD SG		01/07/2017 30/06/2020	CON-AA	2	Interim Report 01/07/2017 -	Interim Report for the period 01/07/2017 - 30/06/2018	16/07/2018	JRC technical reports
												3	Interim Report 01/07/2018 - 30/06/2019	Interim Report for the period 01/07/2018 - 30/06/2019	15/07/2019	JRC technical reports
												4	Final Report on the AA - 01/07/2019 - 30/06/2020	Final Report for the period 01/07/2019 - 30/06/2020	30/06/2020	JRC technical reports
348 - MARREF JRC.C.5	3575 - Environment Supporting the environmental dimension of the Macro-regional Strategies in the area of Air	<p>This work package is part of a wider JRC effort to support the policy areas of the macro-regional strategies, focusing on the Danube and is completing its activities after five years. One of the main objectives of the WPK is to support the implementation of the action plan of Priority Area six (PA6) "Biodiversity, landscapes, quality of air and soils" of Pillar 2 "Protecting the environment" of the Danube Strategy. The tasks associated with this objective are a) the application of integrated assessment tools to provide guidelines for the development of air pollution abatement strategies, and b) coordination of and support to the Danube Task Force on Air Quality. The JRC's leading roles in FAIRMODE and AQUILA represents a unique asset that is used to mobilise local experts and authorities to spark urban and regional actions. By promoting the harmonisation with and transposition of the EU regulations in EU candidate (Serbia, Montenegro, Bosnia and Herzegovina) and neighbour (Ukraine and Moldova) countries, the work package also contributes to the objectives of the Enlargement and Integration (E&I) strategy.</p>	JRC.C.5 CLAUDIO BELIS	1.6.a	REGIO	JRC	MAIRATE Andrea, ONIDA Marco (REGIO.DGA2.D.1); ENV.E.1	AGRI CLIMA ENV NEAR RTD SANTE	ICPDR - International Commission for the Protection for the Danube River EEA - European Environment Agency IAEA - International Atomic Energy Agency (IAEA) MZOIP - Ministarstvo Zaštite Okoliša i Prirode (Ministry of Environmental and Nature Protection) STMUV - Bayerisches Staatsministerium für Umwelt und Verbraucherschutz (Bavarian State	01/01/2017 31/10/2018	INS-RS	201801	Sustainable use of biomass in residential sector	Studies on the impact of the use of biomass in the residential sector on air quality and health, together with WPK 3577 CONNECTIVITY: Emissions will be calculated using refined technology-based emission factors, and these will be used to evaluate the impacts of short-lived pollutants on air quality, human health and ecosystems. In addition, analysis of urban air quality in the main Danube cities using source apportionment and modelling tools will evaluate domestic and other sources. This deliverable provides the scientific basis for the joint report in WPK 3577 CONNECTIVITY deliverable 201802. Activity supported by the E&I strategy.	31/08/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201802	Building up air quality measurement and modelling capacities	Aiming at promoting a better implementation of the air quality directives in areas where air quality limits are often exceeded and at supporting accessing countries to harmonize their networks to the EU standards, training on pollutant measurements and modelling dedicated to experts from the EU and non EU Danube countries will be accomplished taking advantage of both the JRC ERLAP facility and FAIRMODE. Activity supported by the E&I strategy.	30/09/2018	Training

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
488 - TERMOD_INVEST JRC.B.3	3927 - TERMES Territorial Modelling Platform projections, impacts and analysis for cohesion objectives	The main purpose of this Administrative Arrangement (AA) is to increase the capabilities and application of the LUISA Territorial Modelling Platform in order to provide support to the preparation of the post-2020 Multi-annual Financial Framework MFF and to the analytical work and reporting related to the cohesion policy. The project contributes to the pilot Knowledge Centre for Territorial Policies.	JRC.B.3 Carlo LAVALLE	1.6.a	REGIO	REGIO	DG REGIOA1.B1 Lewis DIJKSTRA	ECFIN ENER	CoR - Committee of the Regions OECD - Organisation for Economic Co-operation and Development (OECD)	01/03/2016 28/02/2019	CON-AA	201801	Report on simulations Year 3	Report on activities performed in third year of operations.	31/12/2018	JRC technical reports
147 - REMO JRC.B.3	5043 - Rhomolo-EIB Macroeconomic Modelling for investments by the European Investment Bank (EIB)	Early contacts with the "Policy and Strategy Division" of the European Investment Bank's "Economics Department" have shown the great potential for RHOMOLO to be used for the impact assessment of the EIB investments in order to guide investments and determine priorities. The RHOMOLO-EIB work package thus aims at further developing the model to be able to provide the EIB with accurate ex-ante policy impact assessment with regional and sectoral detail.	JRC.B.3 Andrea CONTE	1.6.a	REGIO	n/a	EIB - Marcin Wolski	ECFIN EMPL REGIO RTD	EIB - European Investment Bank	01/10/2016 31/03/2019	CON-TW	1	Description of RHOMOLO-EIB model	Publication detailing features of the RHOMOLO-EIB model and properties	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	Interim report 01/09/2016 - 31/08/2018	Report of activities and actions agreed with EIB, including publications, presentations, simulations and sensitivity analyses for the year 2016/mid2018.	31/07/2018	JRC technical reports
												ImpactAsses sment2018	Impact assessment of EIB investments 2018	RHOMOLO simulations on ex-ante impact assessment of EIB investments, with results delivered as Excel tables and technical reports explaining the results.	30/06/2018	JRC technical reports
												ImpactAsses sment2019	Impact assessment of EIB investments 2019	RHOMOLO simulations on impact assessment of EIB investments, with results delivered as Excel tables and technical reports explaining the results.	31/03/2019	JRC technical reports
												Report2018 Final	Final report 01/09/2017 - 31/03/2019	Report of activities and actions agreed with EIB, including publications, presentations, simulations and sensitivity analyses for mid-2018/March 2019.	31/03/2019	JRC technical reports
												SensAnalys is2018	Sensitivity analyses on RHOMOLO simulations 2018	Sensitivity analyses and presentations on RHOMOLO simulations on impact assessment of EIB investments.	30/06/2018	JRC technical reports
												SensAnalys is2019	Sensitivity analyses on RHOMOLO simulations 2019	Sensitivity analyses and presentations on RHOMOLO simulations on impact assessment of EIB investments.	30/06/2019	JRC technical reports
488 - TERMOD_INVEST JRC.B.3	5400 - REGISTER II Regional Indicators and Territorial Cohesion Analysis II	The main purpose of this Administrative Arrangement (AA) is to elaborate European wide information relating to key themes (e.g.: demography, environment, urban development, transport ...) and provide REGIO with indicators, maps and other data relevant for the analysis of European cities and regions. It follows up AA REGISTER (33815) ending in March 2018. Modelling work relevant for territorial impact assessment is performed with the modelling platform LUISA.	JRC.B.3 Carlo LAVALLE	1.6.a	REGIO	REGIO	Lewis DIJKSTRA	ECFIN EMPL ENER		01/01/2018 31/12/2020	CON-AA	201801	Inputs to the EC reporting on Cohesion policy	Following from the 7th Cohesion Report a set of thematic fact-sheets will be updated/produced on issues such as transport & accessibility, demography, economic development, evolution of European Urban areas.	31/01/2019	JRC technical reports
												202001	Final Report	Report on simulation of policy scenarios, defined jointly with REGIO following hypotheses of funding on geographical and / or thematic priorities.	31/12/2020	JRC technical reports
7596 - Resilience4EU JRC.B.1	6460 - TERES Territorial Resilience	The recent global recession and consequent slow recovery have revealed considerable heterogeneity in economic performance across countries, regions and local actors. This Work Package contributes to the efforts towards the identification of drivers of crisis recovery and investigate the structural characteristics of the regions and determinants of resilience. Resilience is herein conceived as the multidimensional capacity of regional and local economy to absorb shocks, adapt or transit to new sustainable development path. It is considered a multi-stakeholder challenge, since it spans the entire governance framework, at multiple dimensions of society, involving multiple sectors. Hence it is fully based upon the territorial approach as the mean to tackle the issues in a truly holistic and integrated manner. This WP has two aims: 1. the construction of a set of territorial indicators to measure and monitor system resilience and well-being at local (regional and urban) level in order to facilitate a common understanding of this complex and dynamic process for decision makers and for the public. 2. Investigate to which extent national and regional characterizations can shape the local level and its	JRC.B.3 Carlo LAVALLE	1.6.a	REGIO	JRC	n/a	ECFIN EMPL HOME SG	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2020	INS-RS	201701	Indicators of Territorial resilience	The territorial resilience indicator has two components (static and dynamic). The first provides a static assessment of the coping capacities of a region and figures out its so-called slow burning process. The second, to whom we refer as shock wave or dynamic process, allows us to analyse the trajectory that each region has registered over time along its resilient evolutionary path from a base line target point taken as a reference to the measurement period. The indicator covers different dimensions of resilience encompassing economic, social and human aspects, among others e.g. GDP per capita, educational attainment, employment level, etc. as well as community connectivity categories, e.g. infrastructure capacity, accessibility to services, etc.	21/12/2018	JRC technical reports
												201901	Territorial Determinants of Resilience	Multi-level modelling (LUISA and extended modules) is applied to identify the role of countries and regions as a potential driver of local resilience. Different explanatory variables will be explored in order to cover multiple dimensions of resilience, encompassing economic and social categories, as well as different model specifications to obtain the best possible fitting. Regional economic modelling (Rhomolo) will contribute to simulate the introduction of specific policy measure either to evaluate the impacts of shocks (for ex. intra-EU mobility) of in the frame of the the	25/12/2019	Science-for-policy reports
147 - REMO JRC.B.3	6503 - RHOMOLO INST Macro-economic modelling: regional and sectoral analysis - institutional support	This work package is created to complement "WPK 3485 RHOMOLO VI" and "WPK 5043 Rhomolo-EIB" exploring areas of data and model development whose potential has not been fully internalised by partner DGs and Institution. In particular, the empirical validation and modelling of issues such as "resilience", the "social dimension" and heterogeneity of firms and households will be developed in a modular way, i.e. as	JRC.B.3 Andrea CONTE	1.6.a	REGIO	JRC	Philippe MONFORT	ECFIN EMPL RTD SG		01/01/2017 31/12/2019	INS-RS	1	Technical Reports	A series of technical reports will document the modular development of the RHOMOLO model and the identification of its structural parameters.	31/12/2019	JRC technical reports
1.6.b economic, social and environmental cohesion and development - develop indices and quantitative analyses at urban, regional and macro-regional levels.																
488 - TERMOD_INVEST JRC.B.3	2801 - REGISTER Regional Indicators and Territorial Cohesion Analysis	The main purpose of this Administrative Arrangement (AA) is to elaborate European wide information relating to key themes (e.g.: demography, environment, urban development, transport ...) and provide REGIO with indicators, maps and other data relevant for the analysis of European cities and regions. Modelling work relevant for territorial impact assessment is performed with the modelling platform LUISA. The project contributes to the pilot Knowledge Centre for Territorial Policies.	JRC.B.3 Carlo LAVALLE	1.6.b	REGIO	REGIO	Lewis Dijkstra (REGIO B.1)	CLIMA ECFIN ENER ENV ESTAT	CoR - Committee of the Regions OECD - Organisation for Economic Co-operation and Development (OECD)	23/03/2015 22/03/2018	CON-AA	201801	Final report	Final report of the work performed under the AA	22/03/2018	JRC Technical reports
222 - DRMKC JRC.E.1	3416 - Sentinel GHSL Pre-operational service framework for GHSL production using Copernicus Sentinel data	This 4-year activity aims to: Firstly, customise a set of satellite-based data processing and analysis techniques developed by the JRC for global human settlement (GHS) detection and analysis in order to render them suitable for a production service framework. Secondly, to develop the technical requirements for a pre-operational Copernicus service framework for the production of Global Human Settlement measurements and exposure indicators. The future service and its information products shall help the EU and countries around the world meet the needs of Sustainable Development Goal 11, Sendai Framework for disaster risk reduction and the Global Urban Agenda.	JRC.E.1 Thomas KEMPER	1.6.b	REGIO	REGIO	Lewis.DIJKSTRA@ec.europa.eu	DEVCO ECHO ESTAT GROW	OECD - Organisation for Economic Co-operation and Development (OECD) UN HABITAT - United Nations, Human Settlement Programme (UN HABITAT) UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UNDP - United Nations Development Programme WB - World Bank	01/03/2016 28/02/2020	CON-AA	201801	Second Intermediate Report	The report describes the production of a first global prototype of GHSL baseline made from the processing of Sentinel2 data (years 2016-2017). Apart from the standard baseline about built-up areas, new information is expected to be collected from S2 data. In particular, information about open spaces, vegetation, and some functional characterization (residential vs productive/commercial). Updated population grids and derived indicators (SDG package) by including the new information from S2. Technical description of methods, tools and data sets employed including statistical quality assessment of the results. First prototype of the new GHSL online platform. First prototype of the new European VHR data.	31/03/2018	JRC technical reports
												201901	Third intermediate Report	The report describes the production of the first global prototype integrating Landsat, S1 and S2 information about built-up areas and their characterization for the epochs 1975, 1990, 2000, and 2014(Landsat)/2015(S1)/2016-2017(S2). Sentinel (S1-S2) GHSL integrated prototype including change detection and validation protocol. Updated set of population grid and SDGs indicators. Cost-benefit analysis of the processing workflow, optimization guidelines. Data sheets and technical specifications for operational services. Final delivery of the updated European Settlement Map developed from VHR imagery data. Consolidated set of tools supporting the new GHSL interactive platform.	31/03/2019	JRC technical reports
348 - MARREF JRC.C.5	3577 - Connectivity Supporting clean growth in Bioenergy and Transport	This work package is part of a wider JRC effort to support the policy areas of the macro-regional strategies, focusing on the Danube and is completing its activities after five years. Connectivity supports clean growth in the actions promoted by the Pillars of the EU Macro-regional strategies related to "Transport" and "Sustainable energy" dealing with cross-priority area issues. Studies are carried out to investigate the impact of biomass combustion on air emissions and health. The methodologies and tools used are those of the JRC Emissions Database for Global Atmospheric Research (EDGAR) and Fast Scenarios Screening Tool (FASST). By undertaking capacity building in EU candidate (Serbia, Montenegro, Bosnia and Herzegovina) and neighbour (Ukraine and Moldova) countries, the work package also contributes to the objectives of the Enlargement and Integration (E&I) strategy. In addition to the two deliverables for 2018, the work package will also contribute to a final report to the Task Force on Air Quality of Priority Area Six.	JRC.C.5 Marilena MUNTEAN	1.6.b	REGIO	JRC	MAIRATE Andrea, ONIDA Marco REGIO DGA2.D.1; ENV.C.3	ENER ENV GROW MOVE NEAR SANTE	- DANUBE DELTA NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT ICPDR - International Commission for the Protection for the Danube River EEA - European Environment Agency EMEP - European Monitoring and Evaluation Programme	01/01/2016 31/10/2018	INS-RS	201801	Sustainable management of air quality in the Danube region	Studies on the impact of the use of biomass in the residential sector on air emissions, air quality and health, together with WPK 3575 ENVIRONMENT. Emissions will be calculated using refined technology-based emission factors, and these will be used to evaluate the impacts of short-lived pollutants on air quality, human health and ecosystems. In addition, analysis of urban air quality in the main Danube cities using source apportionment and modelling tools will evaluate domestic and other sources. This deliverable provides the scientific basis for the joint report in WPK 3577 CONNECTIVITY deliverable 201802. Activity supported by the E&I strategy	31/08/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201802	Sustainable use of biomass in residential sector	The shares of emissions from the residential sector in national emissions are significant in the countries of the Danube region and the uncertainties related to fuel combustion and technology use in this sector are large. Building on the work of both MARREF work-packages, in particular the joint studies under WPK 3575 ENVIRONMENT deliverable 201801 and WPK 3577 CONNECTIVITY deliverable 201801, the project will conclude with a joint report on sustainable use of biomass in residential sector and its subsequent impact on air quality and health. Activity supported by the E&I strategy.	15/10/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
661 - COIN JRC.I.1	3960 - COIN_REGIO_II Regional and Urban Policy support through indices and econometric analysis	The goal of this agreement is two-fold: (a) to further develop and extend indicator frameworks and indices related to the monitoring at regional level of the distance to the EU2020 targets, human development, governance and other social phenomena (extending the work of the past AA 33322); (b) to analyse the determinants of territorial dynamics in rural and urban areas in the EU.	JRC.I.1 Beatrice D'HOMBRES	1.6.b	REGIO	REGIO	Lewis Dijkstra			01/07/2016 30/06/2019	CON-AA	201801	Regional indices	A set of regional composite indicators will be developed or updated in closed cooperation with DG REGIO. 1) The Europe 2020 index will be updated using the latest data available. The spatial level of the index will be the lowest feasible given data availability. 2) The Regional Human Development Index will be updated and compared with the US Human Development Index. 3) Depending on data availability other indices will be produced. Topics of interest include: regional governance, well-being and gender. These regional indices, in particular their conceptual framework, the employed methodology, the empirical results and the sensitivity analysis will be described in specific reports. This work will feed into the Cohesion Report.	18/06/2018	JRC technical reports
												201802	Update Territorial dynamics	The work will involve the analysis of the drivers of territorial dynamics and in particular the determinants of urban land densification in Europe. Furthermore, an analysis of population growth determinants at NUTS3 will be carried out, whilst taking into account the regional spatial effects. The contributing outputs will include a report and a paper to be submitted to a peer-reviewed journal which will present the indicator framework, the methodology employed and the main empirical results. As main deliverable, this work will feed into the LUISA Territorial Modelling Platform (JRC B.3) which is used by DG REGIO for the ex-ante evaluation of EC policies and for the Cohesion Report.	30/04/2019	JRC technical reports
488 - TERMOD_INVEST JRC.B.3	4304 - URBPLAT-Data Urban Data Platform	The main purpose of this Administrative Arrangement (AA) is to implement and populate the Urban Data Platform - a spatial data hub for access and visualization of data and indicators related to European urban areas. The work contributes to the implementation of the Knowledge Centre for Territorial Policies pilot project.	JRC.B.3 Carlo LAVALLE	1.6.b	REGIO	REGIO	Lewis DIJKSTRA	CLIMA ENER ENV MOVE	CoR - Committee of the Regions	01/09/2016 31/12/2019	CON-AA	201801	URBPLAT-DATA Version 2.0	Updated release with analytical capabilities and visualisation of urban strategies	31/10/2018	Scientific information systems and databases
												201901	URBPLAT-DATA Version 3.0	New Operational Version of the Urban Data Platform. Contributes to the WP KC-TP HUB and KC-TP partnership and networking	30/06/2019	Scientific information systems and databases
4854 - AIR JRC.C.5	4800 - iScape Improving the Smart Control of Air Pollution in Europe	Aims to integrate and advance the control of air quality and carbon emissions in European cities through the development of sustainable and passive air pollution remediation strategies, policy interventions and behavioural change. It will tackle air pollution reduction at target receptors with an innovative SME-led approach, focusing on the use of "Passive Control Systems" in urban spaces. Improvements in air quality, microclimate and behavioural aspects of urban dwellers will be achieved by applying real-world physical interventions on the urban tissue to alter ventilation rates and dispersion patterns in the selected cities assessed for future climate change scenarios and representative of different cultural and lifestyles in Europe. It will support sustainable urban development by promoting the sharing of results with policy-makers and planners using local test-cases, and providing scientific evidence and ready-to-use solutions potentially leading to real-time operational interventions. This work package will focus on geographical harmonisation and generalisation of the iSCAPE urban domains in regions of high population density. It will link the lessons learned from regulatory consequences to population exposure and human health. It will promote specific deliverables with	JRC.B.6 Andreas SKOULOUDIS	1.6.b	REGIO	RTD	DALAN Fabio (RDT.EASME); DIJKSTRA Lewis (REGIO.B.1); HENRICH Thomas (ENV.C.3)	CLIMA ENER RTD SANTE	EEA - European Environment Agency WHO - World Health Organization	01/09/2016 31/08/2019	CON-IA	D7b	Generalisation of consequences in EU urban domain	Report generalising the temporal consequences with regard to regional climate change.	31/12/2018	Science-for-policy reports
												D7c	Impact of urban abatement policy on climate change	This is a peer-reviewed publication from the key products of the project that could be used in developing countries for promoting sustainable growth while mitigating climate change.	28/02/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
568 - WEFE Nexus JRC.D.2	6440 - H2OCities Water challenges in cities	The work package addresses multiple dimensions of urban water and sets them into relationship to energy, food and ecosystems. H2OCities looks into the inherent relation between cities and water and aims at enumerating its influence on our social, economic, political and cultural lives in an urban setting. To do so, it builds a set of indicators on direct and indirect water trends and pressures, which allows municipalities to: a.) perform a baseline assessment of their urban water situation, b.) identify priorities to become "water-wise" cities and c.) identify appropriate innovative solutions to tackle water reuse (of special relevance for the Mediterranean region) as part of the UN Sustainable Development goals for Water (SDG 6) and cities (SDG 11). Particular emphasis is given on a circular and green economy thinking, such as reuse of reclaimed water or nature-based solutions, in order to fill the knowledge gaps, e.g. in view of an EU Guidance for a reuse risk management framework. H2OCities addresses also aspects of "Water in the city" as a tool for science diplomacy at local, i.e. urban level, useful to address other urban challenges such as climate adaptation, sustainable use of land, but also energy transition.	JRC.D.2 Bernd GAWLIK	1.6.b	ENV	JRC	n/a	CLIMA ENER JRC REGIO RTD	NetWERCH20 - Network for Water in European Regions and Cities (NetWERCH20) OECD - Organisation for Economic Co-operation and Development (OECD) WSSTP - Water supply and sanitation Technology Platform	01/01/2018 31/12/2020	INS-RS	20181	Urban wastewater reuse	The promotion of reclaimed water from treated urban wastewater requires further knowledge and data for reuse in agriculture, managed aquifer recharge, irrigation uses in parks and recreational facilities. Information will be generated in an EU-wide approach on the occurrence and levels of compounds of emerging concern in treated wastewaters including those compounds of relevance for the propagation of antimicrobial resistance and microplastics. This will be conducted under the umbrella of the forthcoming legal instrument on water reuse as part of the Circular Economy Package.	31/12/2018	Validated methods, Reference methods and measurements
												20191	Nature-based solutions for smarter cities	Urban greening and nature-based solutions offer the opportunity for cities to adapt to enhance their climate resilience with benefits on energy saving, pollution reduction and flood mitigation. Based on an urban think tank and the results of related indirect actions a prioritization approach for multi-functional urban greening solutions considering the expected benefits for energy, urban agriculture, ecosystems and water quality is proposed with a perspective to see how cities can contribute to global policy targets, e.g. as expressed by the SDGs. In case on biodiversity and ecosystems, the question of how urban green space can become part of a regional network of green infrastructure which supports biodiversity and ecosystem services can be addressed.	31/08/2019	JRC technical reports
												20192	WEFE governance imaginaries in cities	Carry out societal engagement in two different case studies (Europe and the Mediterranean) aiming at fostering a debate about governance issues of the WEFE Nexus in urban and peri-urban areas. The input to these engagements are scenario outcomes from other WEFE-Nexus Work Packages as well as different insights including "traditional knowledge" and local practices. The engagements will be done through social research methodologies based on group discussions and material deliberation (e.g. futuring tours) or online engagements making use of the Dialogue Platform developed within the H2020 MAGIC Project, preceded by a study of institutional analysis and stakeholder mapping, local narratives that interest the WEFE. The outcomes of these engagements include a report of insights, expectations and imaginaries of the communities involved that will inform the scenario development team.	30/11/2019	JRC technical reports
												20193	Intelligent Urban Water Scoreboard	Development of a science-based, robust and reproducible set of urban water indicators for water-wise cities aiming at capturing a municipality's performance characteristics with regard to water supply services (drinking water + wastewater), climate resilience (flood, droughts, sealing), water governance, attractiveness and sustainability in relationship to water (blue/green surfaces, water footprint) and resource recovery from the urban water cycle. The scoreboard will be directly embedded into the Urban Data Platform and support also the Urban Water Agenda. The following data categories will be used: a.) Stemming from JRC in-house tools and facilities, b.) Urban data collections and c.) other sources. The development of the indicator will be accompanied by the development of a community of stakeholders such as the EU Urban Water Agenda, the Water Sanitation and Supply Technology Platform, the Network for Water in European Cities and Regions.	31/12/2019	Scientific information systems and databases
603 - CC-ME JRC.I.1	6467 - CC-ME.REGIO CC-ME REGIO	CC-ME will carry out the following activities jointly with the DG REGIO - EVAL Unit contributing in the ex-post evaluation framework of the last programming period: i) a technical report on ERDF and Cohesion Funds (monitoring and evaluation) indicators for the next MFF; ii) support on the ex-post evaluation of some specific ERDF or CF interventions at the regional level in 2018;	JRC.I.1 ATHANASIOS LAPATINAS	1.6.b	REGIO	REGIO	n/a			01/06/2018 31/12/2018	CON-AA	1	Monitoring and Evaluation Indicators for ERDF and CF	CC-ME will work on the definition of monitoring and evaluation indicators for the next MFF in 2017 for each of the 11 Thematic Objectives and will support DG REGIO in the ex-post evaluations that will be carried out during the year 2018.	31/12/2018	JRC technical reports
												2	Ex-post CIE Evaluation analysis	Based on the information available (EUROSTAT, DG REGIO, etc...) and based on the work done on indicators, the CC-ME will support the DG REGIO - EVAL Unit in carrying out some specific ex-post evaluations of regional policy interventions financed by ERDF and/or CF funds at the NUTS-2 level.	31/12/2018	Science-for-policy reports
488 - TERMOD_INVEST JRC.B.3	7082 - URBAN2030 Urban dimension of the 2030 Agenda for Sustainable Development	The action aims to support REGIO work on the monitoring and reporting of the urban dimension of the 2030 Agenda for Sustainable Development as well as the New Urban Agenda. It will contribute to ensure coherence between the EU action and the Global action on sustainable urban development, including by facilitating the coordination with Member States.	JRC.B.3 Carlo LAVALLE	1.6.b	REGIO	REGIO	n/a	DEVCO	UN HABITAT - United Nations, Human Settlement Programme (UN HABITAT)	01/05/2018 31/12/2020	CON-AA					
1.6.c support for macro-regional and smart specialisation strategies - develop integrated processes and qualitative methods to support the development, implementation and monitoring of smart specialisation strategies and capacity building at national, regional, urban and macro-regional levels.																
146 - S3 Platform JRC.B.3	673 - S3P - MACROREGIONS Smart specialisation for EU macro-regions	Support to R&I strategies for Smart Specialisation in the Danube Region has been a flagship horizontal priority of the JRC institutional action "Scientific Support to the Danube Strategy". The assistance provided to the Danube MS, candidate and neighbourhood countries as a pilot area embracing a population of more than 115 million citizens aimed at stimulating competitiveness and employment through implementation of the S3 and adding value through promoting transnational R&I cooperation targeting at closing the innovation gap and stimulating smart, sustainable and inclusive growth is hereby extended to the other EU macro-regional strategies (EUSBSR, EUSALP and EUSAIR). The scope of this work package is to continue studying and fostering the integration, coordination and	JRC.B.3 Ales GNAMUS	1.6.c	REGIO	JRC	Andrea MAIRATE	DEVCO HOME NEAR REGIO RTD		01/01/2014 31/12/2018	INS-RS	1	Annual report 2018	Annual report on the activities carried out.	31/12/2018	JRC technical reports
146 - S3 Platform JRC.B.3	3021 - S3P-ENERGY Smart Specialisation Policies in the field of Energy	Aims to align regional & local activities through technologies and innovative solutions to EU energy policy priorities. Tasks include to: - Conduct policy-relevant research and implementation advice in this field - analyse energy priorities, policies and recommendations; - analyse and implement Smart Specialisation Policies in the field of Energy ; - Build a mutual trans-national learning arena, by providing thematic advice and 'Matchmaking' for regions - identify trans-national entities doing cross-regional activities; - Information, communication and dissemination activities: prepare guidance material, organise events; - identify good practices; - Provide specific policy-relevant information and analysis in support of DGs ENER and REGIO's policies	JRC.B.3 Manuel PALAZUELOS MARTINEZ	1.6.c	REGIO	REGIO	Colin WOLFE	ENER		01/07/2015 30/04/2018	CON-AA					

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148 - LAGREG JRC.B.3	3475 - Lagging Regions Support for smart specialisation strategies for research and innovation in Lagging Regions	Implemented by JRC.B3 over a fifteen month period (Sept 2014-Nov 2015), the European Parliament Preparatory Action (PA) focused on the Greek region of Eastern Macedonia and Thrace (REMTh) aimed to facilitate the refinement and implementation of the RIS3 strategy in the region and to generate a model for other lagging regions in Europe. In so doing, it also served as a test bed for theories on smart specialisation. The impacts of this work, and the various lessons emerging, are highly relevant for the EC, the regional authority and other local stakeholders. These outcomes, together with the specific tools and overall methodological approach developed and used, offer clear potential for other lagging regions. The more "hands-on" approach of the REMTh Preparatory Action supports weaker administrations, and is highly beneficial to the activities of DG REGIO, particularly in terms of tackling critical absorption and effectiveness problems of cohesion policy. These outcomes have indicated promising lines of analysis in terms of performance and governance of innovation and regional development.	JRC.B.3 John Mark BODEN	1.6.c	REGIO	REGIO	Colin WOLFE		EP - European Parliament	01/07/2016 30/06/2018	CON-AA	4	Final Activity Report	Report on: Outcomes of specific regional stakeholder activities Horizontal analysis of lessons learned Future planning and further developments Dissemination and replication of activities	30/06/2018	JRC technical reports
146 - S3 Platform JRC.B.3	5038 - SSP- 4 Smart Specialisation Platform - Phase IV	The S3 Platform provides support to national and regional authorities for the implementation of smart specialisation strategies, to help reform national/regional research and innovation systems and promote international collaboration. In order to address the diversity of Europe's regions, the S3 Platform supports the development of smart specialisation at national and regional level, with particular focus on mutual learning and sharing of good practices in innovation policy implementation, governance and monitoring. The S3 Platform will in particular: - perform data analysis, provide advice and encourage mutual learning for the implementation of smart specialisation strategies (quantitative and qualitative) to help in effective, efficient and economic implementation; - ensure the management of partnerships of the Thematic Smart Specialisation Platforms on industrial modernisation and agri-food; - carry out research based on gathering empirical evidence to support the S3 concept both conceptually and politically; - develop its website, which will continue to act as a hub providing access to relevant projects and resources, and more interactive tools.	JRC.B.3 Manuel PALAZUELOS MARTINEZ	1.6.c	REGIO	REGIO	Colin WOLFE	AGRI EAC GROW RTD	CoR - Committee of the Regions EP - European Parliament	01/07/2017 30/06/2019	CON-AA	01	Interim report	Interim report taking stock of the work completed in the first year	30/06/2018	JRC technical reports
												02	Final report	Final report on work carried out and key achievements	30/06/2019	JRC technical reports
												03		Gathering empirical evidence has become a crucial need to support the concept both conceptually and politically. The S3 Platform, will gather an enhanced collection of implementation examples and 'smart stories' and make them available in the S3 Platform website.	30/06/2019	Science-for-policy reports
												04	Smart Specialisation concept and methodological development - Impact assessment	The impact assessment of the implementation of smart specialisation strategies is foreseen to become of utmost importance and the S3 Platform will devote resources and efforts accordingly. Regions will be encouraged to get involved in this evaluation. Examples of the specific activities to be carried out under this topic are: (i) analysis of the change in (modalities and size of) funding decisions induced by the adoption of the smart specialisation approach; (ii) analysis of the behavioural change of public policy-makers and stakeholders communities induced by the adoption of the smart specialisation approach; (iii) exploring the possibility to use macroeconomic models for the impact assessment of the implementation of smart specialisation strategies.	30/06/2019	Science-for-policy reports
												05	Policy Paper	Short Policy Paper brief responding to request of the European Parliament including the following areas: 1) a SWOT analysis of the experience, 2) lessons learned by regions and main pitfalls observed for each of the six steps described in the RIS3 guide, 3) recommendations and standardised templates for a continuous improvement of the RIS3 with a view to better designing the strategies after 2020, 4) human capacity needed to successfully design and implement a RIS3	31/12/2018	Science-for-policy reports
146 - S3 Platform JRC.B.3	5039 - S3P-NEAR Smart specialisation and organisational development in enlargement countries	This project will analyse and support the strategic management capabilities in partner countries, with a special emphasis on the entrepreneurial discovery processes at both government and non-governmental level. The project will continue to support Serbia from the WP 2017 pilot project to ensure longer term impact and lasting process. A similar method will be expanded to the other IPA/enlargement countries. Limited horizontal actions will be open to other partner countries.	JRC.B.3 Ales GNAMUS	1.6.c	NEAR	NEAR	Bernard BRUNET	DEVCO ECHO FPI JRC REGIO RTD		01/01/2018 31/12/2019	CON-AA	2	Annual Report for 2018	Compendium of activities, policy inputs to DG NEAR and the EC.	31/12/2018	JRC contributions to policy documents
488 - TERMOD_INVEST JRC.B.3	5041 - URBADEV Support to the EU Urban Policy and Urban Development Strategies	This Work Package aims at providing support to the activities of the Urban Development Network-UDN of the European Commission managed by DG REGIO, and to inform future EU policy with an impact on cities and urban areas, either directly or indirectly. Three hypothesis support the research proposal: 1.in the European context, "what is urban" can be identified and extended to encompass the whole territory 2.the re-articulation among economy, society and territory will affect (facilitate or contrast) a 'smart growth' trajectory, meaning a transformation/up-grading of the economic base as well as the 'regulation mode' of the city economy which should become knowledge-based and innovation-oriented. 3.metropolitan areas and regions must face, in the near future, similar problems. However those issues will be differently defined and articulated according to different spatial morphologies as well as social, economic and institutional morphologies. The research activities will address the following objectives:	JRC.B.3 MARTINA PERTOLDI	1.6.c	REGIO	REGIO	EVA NUSSMUELLER	REGIO	CoR - Committee of the Regions	01/07/2017 30/06/2019	CON-AA	FinalReport	Final Report	Final Report on activities and publications linked to the Work Package.	30/06/2019	JRC technical reports
												InterimReport 2017	Interim Report 2017	Report on activities and publications linked to the Work Package.	30/06/2018	JRC technical reports
												Methodologi calguide	Methodological guidance 1	Methodological guidance on the establishment of Integrated urban development strategies	07/12/2018	JRC technical reports
146 - S3 Platform JRC.B.3	5042 - S3P-E&IA Smart specialisation and organisational development in enlargement and H2020 associated countries	This wpk analyses and supports the strategic management capabilities in a limited number of partner EU enlargement and neighbourhood countries, with a special emphasis on the entrepreneurial discovery processes at both government and non-governmental level, in the broader context of the JRC institutional "Enlargement & Integration Action". In particular, it supports the three pilot countries already identified in 2016 (RS, UA, MD) to ensure longer term impact and lasting process. However, the method can be expanded in the future, depending on an assessment of the results and demand. Limited horizontal actions will be open to other partner countries.	JRC.B.3 ALEXANDER KLEIBRINK	1.6.c	NEAR	JRC	Bernard BRUNET	REGIO RTD		01/01/2017 31/12/2018	INS-E&IA	3	Organisational development for S3	A publication co-authored by the research team and an external expert will summarise the main findings of the activities and put them into context.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
146 - S3 Platform JRC.B.3	5146 - S3P-TER-INNO S3P- Analysis and methodologies of Territorial Innovation Ecosystems	This work-package aims to study the functioning of territorial innovation ecosystems (at regional and urban level) and the role of individual key players in a set of selected regions. Selected criteria: regions moving towards quadruple helix model (4H) under their RIS3. Planned activities: - Explore the role that a territorial innovation ecosystem can play to facilitate bottom-up cooperation and develop a culture of innovation and an entrepreneurial mind-set - Study emerging territorial innovation enablers/catalysers like RIS3 clusters (e.g. Lapland), community co-creation spaces such as Maker spaces, Living labs, Co-working spaces (e.g. Catalonia), co-creation methodologies (e.g. Innovation Camps). - Scrutinise key enabling factors, drivers and dynamics, governance and sustainability models, as well	JRC.B.3 Gabriel RISSOLA	1.6.c	REGIO	JRC	Colin WOLFE	CNECT GROW	CoR - Committee of the Regions	02/01/2017 31/12/2018	INS-RS	1D586804	Mapping selected territorial innovation ecosystems	This deliverable will provide a detailed picture of the regional/urban innovation ecosystems (Locality Mapping) in three areas selected for their diversity and possible representativeness of the European context. It will consist of a collection of three exhaustive mapping exercises performed on the ground (through fieldwork activities like study visits, semi-structured interviews, etc) and presented as stand-alone case studies describing local innovation ecosystems' actors and their inter-links.	30/06/2018	Science-for-policy reports
												2	Analysis of EU territorial innovation ecosystems	Based on Del. 1, this analysis will build a (cross-regional) typology of innovation-catalyser actors; compare mapped innovation ecosystems (and others that might be documented in available literature) scrutinising their key enabling factors, drivers and dynamics, governance and sustainability models; extract conclusions and recommendations for regional & urban development policy.	30/09/2018	JRC technical reports
												3	Augmented Entrepreneurial Discovery Process	Based on Del. 1 and 2, this deliverable will identify the more promising methodologies to develop innovation ecosystems through strong multi-stakeholders engagement and collaboration (e.g. Innovation Camps), developing an expanded methodological framework that can potentiate the Entrepreneurial Discovery Process as it is known and used today.	31/12/2018	Science-for-policy reports
488 - TERMOD_INVEST JRC.B.3	5163 - KCTP Implementation of the Knowledge Centre for Territorial Policies_ Phase II	The Knowledge Centre for Territorial Policies (KC TP) aims to change the way knowledge for territorial policies is shared and used to increase its impact and improve its efficiency. It achieves it by better integrating and coordinating the supply and demand for knowledge. It provides one-stop access to data, policy analysis, interactive tools and methods for policy makers, scientists and other stakeholders via an IT platform and a clearing house for policy questions. The 2018-19 work plan consists of the following activities (to be fine-tuned as the work progresses): -A database with key regional economic indicators including projections and back-casting (possibly at NUTS-3 level, following acquisition of external databases); -A feasibility study of the merging of data at firms' level (microdata) with macro-data, as input to the	JRC.B.3 Davide AUTERI	1.6.c	REGIO	JRC	Lewis DIJKSTRA	CLIMA ENER SG	CoR - Committee of the Regions OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2017 31/12/2020	INS-RS	201801	KCTP release 2018 (Autumn Edition)	Up dated release of the Territorial Dashboard. Includes: new and updated regional indicators, benchmarking functionalities to compare regional performance, specific cases of thematic analysis. Enhanced visualization of maps and indicators	21/12/2018	JRC technical reports
												201802	KCTP Annual Workshop and CoP	The dissemination and promotional activities are based upon the participation in existing conferences of high impact such those organised by the Regional Studies Association (RSA) and the European Regional Science Association that will offer good opportunities to fostering communities of practices. In 2018, a workshop will be organised on " Spatial disparities: access to services " , in coordination and relation with project FAIRNESS, WkP 6365-Fairness_CoP	19/12/2018	JRC technical reports
6344 - Stairway2Excellence JRC.B.3	5521 - S2E- III Cohesion Policy & synergies with R&D funds: the "Stairway to Excellence" - phase III	The rationale of this work is to stimulate the early implementation of the Smart Specialisation Strategies, as one of the innovations in the 2014-2020 period. In particular, this wpk implements the Preparatory Action of the European Parliament via an AA with REGIO "Cohesion Policy and the synergies with the research and development funds: the stairway to excellence (S2E) III" The particular scope of this wpk is to provide assistance for Member States to start up the process of closing the innovation gap, in order to promote excellence in all regions and Member States of the European Union. Compared with the previous initiative, this wpk extends the JRC work to all Member States; the previous wpks (Phase I&II) were focused on EU-13 only.	JRC.B.3 Karel HAEGEMAN	1.6.c	REGIO	REGIO	Peter BERKOWITZ	RTD	CoR - Committee of the Regions EP - European Parliament	01/04/2017 31/03/2018	CON-AA	1	Final Report 2018	Compendium of activities and contribution (events/ presentations, papers, publications, etc.)	31/03/2018	JRC technical reports
148 - LAGREG JRC.B.3	5522 - RIS3 Romania Targeted RIS3 Support to Romania	Implemented by JRC.B3 over a fifteen month period (Sept 2014-Nov 2015), the European Parliament Preparatory Action (PA) focused on the Greek region of Eastern Macedonia and Thrace (REMTh) aimed to facilitate the refinement and implementation of the RIS3 strategy in the region and to generate a model for other lagging regions in Greece and Europe. In so doing, it also served as a test bed for theories on smart specialisation. The impacts of this work, and the various lessons emerging, are highly relevant for the EC, the regional authority and other local stakeholders. These outcomes, together with the specific tools and overall methodological approach developed and used, offer clear potential for other lagging regions. The more "hands-on" approach of the REMTh Preparatory Action supports weaker administrations, and is highly beneficial to the activities of DG REGIO, particularly in terms of tackling critical absorption and effectiveness problems of cohesion policy. These outcomes have indicated promising lines of analysis in terms of performance and governance of innovation and regional development.	JRC.B.3 John Mark BODEN	1.6.c	REGIO	REGIO	Colin WOLFE		EP - European Parliament	01/07/2016 31/12/2018	CON-AA	04	Final Activity Report	Final Report on: Outcomes of specific regional stakeholder activities Horizontal analysis of lessons learned Future planning and further developments Dissemination and replication of activities	30/06/2018	JRC technical reports

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153 - DT JRC.B.6	5680 - S3P-DIH Smart Specialisation and Digital Innovation Hubs	The European Commission strategy from May 2016, "Digitising European Industry – Reaping the full benefits of a Digital Single Market" based on the collective effort of public and private stakeholders across Europe at regional, national and EU level the Commission aims to ensure that any industry in Europe can fully benefit from digital innovations to upgrade its products, improve processes and adapt its business models to the digital change. One of the pivotal parts of the Strategy is the pan-European network of digital innovation hubs (DIHs). For which there is an investment of € 500 million to provide business with advice and possibilities to test digital innovations. JRC B3 and DG CONNECT will collaborate around 4 deliverables to support the strategy and the Digital Innovation Hubs, in particular on the connections between Smart Specialisation processes, regional growth, ICT, Smart Specialisation and Industrial Modernisation.	JRC.B.3 Gabriel RISSOLA	1.6.c	CNECT	CNECT	Max LEMKE			19/04/2017 18/04/2019	CON-AA	2	Case studies	Case studies identifying, documenting and diffusing good practices of DIH involved in developing and implementing Smart Specialisation Strategies, also mobilising a community of practitioners in collaboration. This work is not substituting the collection of good practices planned by CONNECT, but rather making use of them as a relevant input.	31/03/2018	Science-for-policy reports
												3	Mapping and analysis of DIH investment patterns	Based on the catalogue of DIHs JRC B3 will analyse the DIH participation in FP7 and H2020 projects – to identify what type of experiments they carry out and compare these data sets with data on Smart Specialisation priorities, regional innovation strengths, to analyse patterns of regional pre-conditions, services offered to see the DIHs regional embeddedness, networks and value chains.	31/03/2018	JRC technical reports
												4	Case studies of DIHs.	Based on the analysis from WP2, a selected number of regions will be explored in more depth, to better understand the connection between different forms of pre-conditions and the activities of the DIHs.	31/12/2018	JRC technical reports
												5	Final report	Report on Digital Innovation Hubs activities and results	18/04/2019	JRC technical reports
148 - LAGREG JRC.B.3	6305 - Lagging Regions II Support for smart specialisation strategies for research and innovation in Lagging Regions II	Implemented by JRC.B3 since September 2014, successive European Parliament Preparatory Actions (PA) focused first on the Greek region of Eastern Macedonia and Thrace (REMT) and then eight further slow and low growth regions, aiming to facilitate the refinement and implementation of the RIS3 strategy in these regions and to generate lessons for other lagging regions in Europe. Over the period 2016-2018, this has been pursued through two complementary work packages based Administrative Agreements with DG REGIO, namely: •Support for growth and governance in lagging regions I (WPK 3475); •The economic competitive advantages and the potential for smart specialisation at regional level in Romania I (WPK 5522).	JRC.B.3 John Mark BODEN	1.6.c	REGIO	REGIO	n/a		EP - European Parliament	01/07/2018 31/12/2019	CON-AA	LAGREG2d1	First progress overview	Overview of progress, planning and issues arising	31/12/2018	JRC technical reports
												LAGREG2d2	Final Report	Final report - overview of activities, conclusions and policy recommendations - key documentation in annex	31/12/2019	JRC technical reports
6344 - Stairway2Excellence JRC.B.3	6308 - Stairway 2E IV Cohesion Policy & synergies with R&D funds: the "Stairway to Excellence" - phase IV	Cohesion Policy & synergies with R&D funds: the "Stairway to Excellence" - phase IV The scope of this project is to continue to provide assistance for EU Member States to close the innovation gap, in order to promote excellence in all regions and Member States of the European Union, in particular through an enhanced combination of and complementarity between different research, development and innovation funding instruments. By doing so, the project also aims to stimulate the implementation of the Smart Specialisation Strategies, and to increase the overall efficiency and effectiveness of the European R&I system. Following an additional mandate of the European Parliament, the resources of this new Preparatory Action will allow for the continuation of activities developed earlier under phase III of "Stairway to Excellence".	JRC.B.3 Karel HAEGEMAN	1.6.c	REGIO	REGIO	n/a		EP - European Parliament	01/04/2018 31/12/2019	CON-AA	01	Interim report	Report on S2E IV mid term review	28/02/2018	JRC technical reports
												02	Final Report 2019	Compendium of activities and contribution (events/ presentations, papers, publications, etc.)	31/12/2019	JRC technical reports
271 - EMSI JRC.C.3	6394 - S3G Smart Specialisation for Smart Grids	The concept of smart specialization strategy (S3) promotes the design of national/regional research and innovation strategies as a means to deliver a more targeted Structural Fund support, and an integrated approach to foster smart growth in all regions. Having a Smart Specialization strategy in place is a mandatory requirement for regions in order to gain access to EU financial support through the Cohesion Policy. A considerable number of Member States and regions have identified Smart Grids as a priority within the S3 Energy topic.	JRC.C.3 Marcello BARBONI	1.6.c	REGIO	JRC	n/a	ENER		01/01/2018 31/12/2019	INS-RS	D1	Report on the Smart Specialisation Platform on Smart Grids: Challenges and opportunities	The report will synthesised, in agreement with the regions taking part in the platform and the industrial and R&D actors participating in the meetings, the view on challenges and opportunities for smart specialisation in the field of smart grids. The report will look at three key aspects: 1) applicability of the Smart Grid Architecture Model (SGAM) and synergy with the European standardization efforts; 2) lessons learned from regional efforts in terms of regulation, financing, and job creation; 3) reflections on the replicability and scalability of studied projects, with the scope of dimensioning the European scale of the potential market.	30/11/2018	Science-for-policy reports
7761 - ANTICIPATE JRC.I.2	6528 - MULTI-Territory Multidisciplinary work for territorial dimension of regions and cities	This work package aims at exploring and co-designing with Unit B.3 the integration of EU Policy Lab methods (foresight and anticipation approaches and tools, citizens engagement methods, design for policy practices) into JRC support to regional and cities smart specialisation strategies and exploring how these approaches can also be applied in the context of lagging regions and the Thematic Smart Specialisation Platform.	JRC.I.2 Alexandre POLVORA	1.6.c	REGIO	JRC	n/a			01/01/2018 31/12/2019	INS-RS	1	Activity Report 2018	The deliverable will outline the methodological approach, selection process and outcomes of the activities carried out in 2018.	31/12/2018	JRC technical reports
146 - S3 Platform JRC.B.3	6761 - S3P INST S3 Platform - Institutional Support	This workpackage intends to: (i) support the execution of wpk 5038 – SSP4 in collaboration with DG REGIO, and (ii) include a limited number of complementary activities of the S3 Platform on the consolidation of conceptual and methodological issues related to smart specialisation. With regard to the first point, the S3 Platform will provide support to national and regional authorities for the implementation of smart specialisation strategies, to help reform national/regional research and innovation systems and promote international collaboration. In order to address the diversity of Europe's regions, the S3 Platform will namely support the development of smart specialisation at national and regional level, with particular focus on mutual learning and sharing of good practices in innovation policy implementation, governance and monitoring. With regard to the second point, the S3 Platform will namely support the scientific development of the concept of smart specialisation, in particular through the organisation of the bi-annual SMARTER conference, a science for policy conference on smart specialisation and territorial development, following the success of its first edition in 2016. Furthermore, it will support the analysis and uptake of	JRC.B.3 Manuel PALAZUELOS MARTINEZ	1.6.c	REGIO	JRC	n/a	AGRI EAC GROW RTD	CoR - Committee of the Regions EP - European Parliament	01/07/2017 31/12/2019	INS-RS	1	SMARTER Conference Special issue	Special issue of a scientific journal on the outcome of the bi-annual science for policy conference on smart specialisation and territorial development. Its second edition is going to be organised in September 2018 in Seville.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	Working papers on smart specialisation worldwide	Working paper on the uptake of smart specialisation and examples of territorial innovation policy in selected world countries or areas.	31/12/2019	Science-for-policy reports
146 - S3 Platform JRC.B.3	6762 - S3P ENERGY INST S3 PLATFORM ON ENERGY – INSTITUTIONAL SUPPORT	S3P Energy INST aims to ensure continuity and proper development to the operations of the smart specialisation platform on energy. In particular, the support will focus on aligning regional and local activities through technologies and innovative solutions to EU energy policy priorities. Tasks may include the following: - conduct policy-relevant research and implementation advice in this field; - analyse energy priorities, policies and recommendations; - analyse and implement smart specialisation policies in the field of energy; - build a mutual trans-national learning arena, by providing thematic advice and 'matchmaking' for regions; - identify trans-national entities doing cross-regional activities; - information, communication and dissemination activities: prepare guidance material, organise events; - identify good practices.	JRC.B.3 Manuel PALAZUELOS MARTINEZ	1.6.c	REGIO	JRC	n/a	ENER		01/01/2018 31/12/2019	INS-RS	1	Interim report	Report on first year activities of the Smart Specialisation Platform on Energy	31/12/2018	JRC contributions to policy documents
												2	Final Report	Final report on the activities carried out by the Smart Specialisation Platform of Energy	31/12/2019	JRC contributions to policy documents
488 - TERMOD_INVEST JRC.B.3	6940 - CITIES-CoP CITIES Initiative – Community of Practice	The JRC Transversal Cities initiative was launched following the Directorate agreement of 27 February 2017. The first phase of the Cities Initiative concerned the mapping of relevant JRC activities and was completed and presented to the EC Inter Service Group on urban policy (ISG-Urban) chaired by REGIO. A workshop in May 2017 identified new avenues of work and collaborations to be incorporated in the JRC work programme and further developed in next steps. In order to streamline and coordinate urban-related activities, the Community of Practice for the Cities Initiative (CITIES-CoP) – working in the context of the Knowledge Centre for Territorial Policies – has been approved by the Directorate of 11 September 2017 with the mandate to formalise linkages, collaborations and joint deliverables. In particular, CITIES-CoP is mandated to identify (up to three) long-term forward-looking ambitious project proposals useful at different levels (EU, national, community etc.) that would be then prioritised by JRC management and discussed with DG REGIO. Suggested angles of work include for instance: (i) the analysis of the development of cities using the Global Human Settlement Layer; (ii) direct work with selected cities; (iii) the identification of relevant international partners, such as MIT 'media lab'; and (iv) potential links to the JRC work on resilience. CITIES-CoP will therefore consolidate and provide a corporate and coordinated approach to important policy initiatives, such as the Global and EU Urban Agendas, and the Sustainable Development Goals (SDG) process. CITIES-CoP will also constitute an appropriate environment to identify synergies and areas of	JRC.B.3 CLAUDIA BARANZELLI	1.6.c	REGIO	JRC	n/a	CLIMA DEVCO ENER HOME MOVE NEAR SG	OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank	01/01/2018 31/12/2020	INS-RS	1	Thematic Workshops on urban-related topics	At least 2 workshops will be organized every year, each being dedicated to a specific theme. Proposed themes: (a) Energy/safety in the built-up environment; (b) Mobility/accessibility; (c) Urban form; (d) Demographic challenges in cities (Ageing/Migration/...); (e) Integrated Urban Strategies; and (f) Global urbanisation issues. The purpose of the workshops (and of the overall CoP) is to stimulate cross-organizational collaborations and knowledge sharing, as well as to promote communication between knowledge production and policy making. Ultimately, the activities under this WPK should provide guidance for the implementation of urban policies at both Global and EU level.	31/12/2019	Article contribution to a monograph or other periodicals
												2	Concept note on city attractiveness	A concept note on city attractiveness will be prepared, in collaboration with the partners of the CITIES-CoP. The concept note will single out the most urgent issues related to cities and urban development; it will formulate research questions; it will identify knowledge gaps; and it will propose a conceptual framework to answer the research questions.	31/12/2019	Article contribution to a monograph or other periodicals
												3	New research lines with long-term forward-looking ambitions	Following the mandate received by the Directorate, CITIES-CoP will elaborate long-term forward-looking and ambitious project proposals useful at different levels (EU, national, community). Potential Topics: (a) the cross-match between urbanisation and development; (b) Global Urbanisation and GSHL; (c) Citizens' involvement and participation. Exploratory project/activity proposals will be formulated – in collaboration with contributing Units.	31/12/2019	JRC technical reports
1.7. Research, science and innovation																
1.7.a research and innovation policies - model, monitor and analyse the drivers of and barriers to research and innovation, including the effectiveness of policy instruments related to research and innovation at EU, national, regional and (cross)-sectoral levels. Manage the Research and Innovation Observatory through the collection, production and dissemination of data and analysis related to national research and innovation policies. Develop indicators,																
		This project builds on past JRC work carried out between 2011 and 2015 (financed by the Capacities work programme of FP7 and H2020). Aims: (a) to provide statistical support for the development and update of indicators related to science, technology and innovation; (b) to carry out statistical and econometric analysis in order to better understand the nature, needs and determinants of high-growth enterprises, as well as the policy responses and the framework conditions needed to facilitate the growth of companies in innovative sectors; (c) to explore the relationship between inward and outward foreign direct investment flows in R&D and framework conditions such as the tax system/tax incentives (R&D tax incentives in										201801	Indices and Scoreboards on Research, Innovation, Science and Technology	The report will present the results of the update and the fine-tuning of the Indicator of Innovation Output Indicator (IOI) and Adjusted Research Excellence composite indicator. (1) The IOI measures the extent to which ideas from innovative sectors are able to reach the market, providing better jobs and making Europe more competitive and it is regularly used for reporting by DG RTD (COM (2013) 624 final, SWD(2013) 325 final). (2) The Research Excellence composite indicator is used by the European Council on Competitiveness and the European Research Area Council (ERAC) to monitor country progress with regards to European Research Area (ERA) on priority 1 which relates to the effective national research systems.	28/09/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
661 - COIN JRC.I.1	3514 - INNOVA_MEASURE Statistical analyses and composite indicators in research and innovation	particular); (d) to provide econometric and statistical support related to the above-mentioned activities; and (e) to carry out a Counterfactual Impact Evaluation study in order to evaluate the impact of DG-RTD research funding schemes on the knowledge basis, innovation activities and economic performance of private enterprises. Note that point (e) will be carried out by the Competence Centre on Microeconomic evaluation under WP 6465 (2 PM in 2017, 10 PM in 2018).	JRC.I.1 DANIEL VERTESY	1.7.a	RTD	RTD	Richard DEISS	GROW		15/06/2017 15/12/2018	CON-AA	201802	Characteristics, determinants of high-growth firms	This study addresses the issue of global comparability of statistical information on high-growth enterprises, the multitude of definitions and potential limitations. A second objective of the study is to provide empirical evidence on the characteristics and determinants of fast-growing firms. In particular, it provides a comprehensive assessment of the role of public support and broader framework conditions as well as company-specific characteristics to assess the distribution and persistence of firm growth in the sample (selected EU countries).	15/12/2018	JRC technical reports	
												201803	Inward and outward FDI in R&D	This study focuses on the determinants of inward and outward R&D flows, with a focus on tax incentives (and R&D tax incentives in particular) that have the potential of boosting knowledge- and technology-intensive economic activities in receiving and sending countries or helping those countries moving up the global value chains.	30/08/2018	JRC technical reports	
												201804	Impact of FP7 research funding on firms' performance	This WP aims at assessing the impact of the EC research funding schemes on innovation and economic performance of private firms. Data on successful and unsuccessful applicants to EC calls can be drawn from CORDA. CORDA can be linked to sources of data on firms, such as ORBIS and Patstat to collect information on outcomes and covariates	15/12/2018	JRC technical reports	
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	4950 - SEERIA 4 EU Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe	The project aims at the integration of the earthquake engineering and the engineering seismology research communities in a European research alliance. The project will comprise transnational and virtual access activities, networking activities (e.g. distributed database of experimental results and integration with the EPOS platform of seismological data) and joint research activities (risk mitigation, advancement of hybrid testing methods, multi-hazard testing in coupled conventional and city-laboratory facilities, etc.).	JRC.E.4 Georgios TSIONIS	1.7.a	GROW	RTD	Antonio DI GIULIO			01/05/2017 30/04/2020	CON-IA	1	Review of current SERIES and EPOS databases	Detailed description of the data, data products, services and software (DDSS) elements, metadata structure used in the SERIES and EPOS databases, i.e. the Common European Research Information Format (CERIF).	30/04/2018	JRC technical reports	
												2	Expansion of the SERIES database	Creation of IT tools to facilitate the input of data into the database – following a general parametrized method compatible with the SERIES format, that each lab will have to tune with respect to its own DAQ system – and distribution to all the earthquake engineering partners, creation of a user-friendly interface to visualise data.	31/10/2018	JRC technical reports	
												3	Roadmap for SERIES & EPOS data banks integration	The roadmap for the integration of data banks and informatics services from the earthquake engineering and seismology RIs in Europe will be defined on the basis of the review of the current data platforms, the anticipated research needs in each discipline and in cross-discipline issues, the latest technological developments, the requirements of users beyond the RIs, the collaboration with international research organisations and synergies with sibling disciplines.	30/04/2019	JRC technical reports	
												4	Stakeholder workshop	The workshop will provide relevant information and first-hand insights on the outputs of the project to professionals in the field of seismic risk as well as to interested non-professionals. It will open the dialogue between the project and its stakeholders, facilitate the collaboration with other scientific efforts in the field and guarantee the visibility of key findings towards political stakeholders.	31/07/2018	JRC technical reports	
												5	Maintenance of the SERIES database	Ordinary maintenance and targeted modifications of the local nodes and the user interface at the central portal, automated procedure for uploading data.	30/04/2020	JRC technical reports	
												6	Validation of pre-operational access to SERIES	Based on the review of the SERIES and EPOS databases and the roadmap for integration, a pre-operational access service will be offered to selected SERIES datasets, to allow validation of the identified access technologies and involvement of the user community, for further implementation in EPOS.	30/04/2020	JRC technical reports	
												8	Final Summary Report	The high-level final report will provide a summary of the achievements of the project and will be addresses to all relevant stakeholders.	30/04/2020	Science-for-policy reports	
												213 - TMA CC JRC.I.3	5128 - TIM COMPARED TIM Semantic Similarity platform for research proposals	A Semantic similarity tool (SeSIT) for funding agencies in Europe will be developed using funds from the ISA ² programme. Double funding of research funded by public funding agencies is a recognised issue for which no operational solutions are available today. This is particularly true in Europe where public funding of research is fragmented amidst Member States, Associated States and the European level. The goal of the project is to develop and implement a semantic similarity tool based on text mining techniques to allow grant evaluators in funding agencies, in Member states and at the Commission to quickly and easily obtain information about similar grants funded by other funding agencies. Once operational, any research funding agency partner of the project will have access to SeSIT and have the possibility to compare incoming research proposals to a corpus of research grants.	JRC.I.3 Olivier EULAERTS	1.7.a	JRC
6829 - ER-Activity JRC.A.5	5802 - ER-ProMan Exploratory Research Programme Management	Coordination and monitoring of ER Programme: - Organisation and coordination of call and selection of proposals for ER projects and activities; - Coordinating the implementation of ER projects and activities, monitor the execution and finalisation and review the outputs; - Coordinate dissemination of ER results; - Organise ER workshop and other events;	JRC.A.5 KARIN ASCHBERGER	1.7.a	JRC	JRC	n/a			01/01/2017 31/12/2020	INS-ER	201801	Annual report of ER programme	Summary of yearly ER achievements and ER workshop report	31/12/2018	JRC technical reports	
6829 - ER-Activity JRC.A.5	5803 - ER-Activity Exploratory Research Activity Tier - Workshops, Experts and Studies	Following the submission and acceptance of proposals the activities are carried out in the respective units. Under this WP all ER activities are collected. The outputs are summarised in a final report, which are deliverables (one for each activity) of this WPK.	JRC.A.5 KARIN ASCHBERGER	1.7.a	JRC	JRC	n/a			01/01/2017 31/12/2020	INS-ER	201801	Final reports of ER activities	Several reports of ER activities	31/12/2018	JRC technical reports	
145 - Global IRI-TEC JRC.B.3	6318 - GLORIA COMP GLORIA COMP Global Industrial Research & Innovation Analyses (competitive)	GLORIA provides evidence to support the EU and national level policy-making in key areas of research and innovation policy. It builds on the IRIMA (Industrial Research Investment Monitoring and Analysis) projects undertaken together with DG RTD since 2004, but gives more emphasis on the analyses of global industrial research and its feed into the policy cycle. It continues the analysis of company data from the sample of world top 2500 R&D innovators, but takes a new policy focus on industrial dynamics. Much more than being big direct employers, producers and innovators, the top R&D innovators have huge indirect market and innovation power. They control supply and distribution chains, help smaller firms grow and internationalise, own participations in start-ups, provide work experience for future entrepreneurs, spin-off technologies, and collaborate with Universities and public research institutions for knowledge. Therefore, GLORIA focuses on detecting differences in industrial dynamics across regions and countries, and on better understanding the behaviour of top R&D innovators to harness globalisation. Capitalising on the interaction with companies within the project, company-level data is further disentangled into companies' different innovation investments, technological portfolios and their geographic distribution across countries and regions. This is crucial because Europe aspires to host (and eventually reshore) the R&D activities of leading innovative multinational firms, rather than seeing these offshored to other countries, and remove barriers to entrepreneurship, firm growth and employment. This activity not only reaps information from companies but also provides a structured dialogue with them. GLORIA benefits from the close coordination with DG RTD as key success factor for the project. This position leverages the project to gather information across the EU from Member States, businesses, public institutions and academia, resulting in unique capacity to deliver quality analysis, independent from private or national interest and to rely on a variety of science and policy disciplines. The JRC support to DG RTD for Global Industrial Research & Innovation Analyses consists of the two JPB WPKs Id 6318 GLORIA and Id 6763 GLORIA INST together, the former covering the competitive part financed by RTD and the latter the one financed by the JRC.	JRC.B.3 Alexander TUEBKE	1.7.a	RTD RTD	RTD	n/a	CNECT ECFIN EMPL GROW REGIO	OECD - Organisation for Economic Co-operation and Development (OECD) WIPO - World Intellectual Property Organization		01/01/2018 30/06/2020	CON-IA	1	D1.1 Report on the results of the 2018	Results of the EU Survey on Industrial R&D Investment trends will be presented. Survey is sent to the EU companies of the EU Industrial Scoreboard.	30/09/2018	Science-for-policy reports
													2	D1.2 2018 EU Industrial R&D Investment Scoreboard	The Scoreboard contains economic and financial data of the world's top 2500 companies ranked by their investments in research and development (R&D).	31/12/2018	Science-for-policy reports
													3	D1.3 Report on the results of the 2019 Survey	Results of the EU Survey on Industrial R&D Investment trends will be presented. Survey is sent to the EU companies of the EU Industrial Scoreboard.	30/09/2019	Science-for-policy reports
													4	D1.4 2019 EU Industrial R&D Investment Scoreboard	The Scoreboard contains economic and financial data of the world's top 2500 companies ranked by their investments in research and development (R&D).	31/12/2019	Science-for-policy reports
													5	D4.1 Final review statement by independent experts	Final review statement by independent experts	30/04/2020	Science-for-policy reports
													6	D4.2 Final report	Final project report	30/05/2020	Science-for-policy reports
													7	Summary of the September 2018 Gloria Workshop	This report summarises the results of the September 2018 Gloria Workshop	30/11/2018	Science-for-policy reports
													8	D3.2 Summary of the March 2019 Gloria Workshop	This report summarises the results of the March 2019 Gloria Workshop	31/05/2019	Science-for-policy reports
													9	D3.3 Summary of the September 2019 Workshop	Summary Report of the September 2019 Workshop	30/11/2019	Science-for-policy reports
7642 - JRC-ES JRC.B.7	6426 - RIO-CR R&I Observatory Country Reports	The objective is to provide EC policy DGs with consolidated input on national innovation policies on the 28 Member States, feeding directly into the European Semester process. The reports also inform national policy making, including as an input to the H2020 Policy Support Facility activities. The RIO Country Reports analyse and assess national research and innovation systems and their trends, with a focus on policies to address R&I system challenges. This aims to monitor and inform EU strategy and goals, as well as facilitate policy learning. In 2018 the reports will also cover implementation of smart specialisation. The unit is responsible for drafting the report guidelines in collaboration with the main policy DGs active in the innovation policy, contracting independent national experts, preparing the RIO Country Report drafts (country desks in collaboration with contracted experts as co-authors) as an input to the European Semester, timely delivery of the draft to DG RTD and in a second round to DG GROW, SG, CNCT, EAC, REGIO, ECFIN, TAXUD. The drafts are then reviewed by policy DGs and checked by the Member States, and the final versions are published, including on the RIO website. The work includes desk research, qualitative analyses of policies and their impact, as well as quantitative analysis	JRC.B.7 JESSICA MITCHELL	1.7.a	RTD	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	RIO Country Reports	The RIO Country Report analyses and assesses the development and performance of the national research and innovation system of the EU-28 Member States and related policies in the perspective of EU strategy and goals having the goal of monitoring and evaluating the EU policy implementation as the input to the European Semester as well as facilitating policy learning in the MS as an input to the Policy Support Facility. The RIO Country Reports 2017 will cover 28 Member States. The unit will work closely with unit B3 to help strengthen the text on RIS3. *** Note that Greece is not available in the menu below.	15/03/2018	Science-for-policy reports	
		The WP will design and implement a pilot project to foster entrepreneurship by creating a vibrant virtual network of entrepreneurs across different regions of Europe. On top of the social network capacity building qualities, the entrepreneurs will be supported through business training and facilitated access to venture capital. The impact of the pilot intervention will be assessed through a Randomised Control										HGIE3	Virtual Social Networks and Entrepreneurship in Europe: A	The project results, methodology and processes will be translated into an academic paper that will be presented at leading scientific conference and submitted to leading journals (e.g. Research Policy or Economics of Innovation and New Technology).	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
7650 - SEF2018 JRC.B.7	6429 - SNE Social networks & entrepreneurship	Trial (RCT) that can significantly reduce bias in the estimation of treatment effects. The concept of the project has been validated in a RCT in Africa (2015-17) with the involvement of JRC B7 staff (http://www.adansonia.net). The rationale underlying the project is that peer social network play a key role in the development of ideas which in turn translate into as sound and successful businesses. The important advantage of harnessing assets of IT technology is that it allows creating distant and thus heterogeneous communities and it allows for cross-pollination of ideas. What is more, it renders the mechanism easily scalable, thus efficient and capable of involving a large number of entrepreneurs. It would aim at creating a large virtual social network of 6000 social entrepreneurs across Europe	JRC.B.7 THOMAS ZACHAREWICZ	1.7.a	GROW	GROW	n/a	EAC SG	JRC.B.7 THOMAS ZACHAREWICZ	01/01/2018 31/12/2019	CON-AA	SNE2	Virtual Social Networks and Entrepreneurship in Europe – internal deliverables	Apart from a major scientific publication (see deliverable SEF_SN3) that will distil the validated methodology of the project and lessons learnt, the administrative arrangement that will be negotiated late 2017 (if the budget is approved), will describe all the intermediate deliverable for the partner DG: inception report with the methodology, human resources, milestones; interim report with the validated methodology and interim results; final report with the lessons learnt as well as other tangible deliverables: social network digital support (platform), network of digital entrepreneurs and investors.	30/11/2018	JRC technical reports	
7674 - KD4G&I JRC.B.7	6445 - RIO-PSF website RIO-PSF website	The objective of the work package is to provide European Commission services and national policy makers with up to date, intelligence, data and analyses on designing, implementing and evaluating research and innovation policy at EU and national level. The work package comprises the maintenance and further development of the RIO IT system as a whole, including a data warehouse database and the joint JRC-RTD RIO-PSF website. The key function of the RIO-PSF website is to make knowledge in the field of R&I comparable, easily accessible and directly applicable to policy questions for users from different DGs, MS policy-makers and other stakeholders.	JRC.B.7 Athina KARVOUNARAKI	1.7.a	RTD	JRC	n/a	CNECT EAC ECFIN EMPL ESTAT GROW REGIO SG	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2018	INS-RS	1	Update and Extension of the database and website content	Update/extension of the database available from the RIO-PSF website (data, key indicators and visualisations). Development of thematic pages. Further population of the data warehouse database with R&I data from primary sources, including those coming from relevant JRC studies as well as Higher Education knowledge tools. Technical support will be delivered by colleagues from unit R10 in Ispra. To continuously collect and analyse quantitative website usage statistics gathered with advanced analytical tool (PIWIK). Exploration of synergies with other JRC and EC websites related to innovation and Higher Education.	31/12/2018	Scientific information systems and databases	
7772 - ER-Projects JRC.A.5	6454 - HETFIGE HETerogeneous Firms General Equilibrium model	The HETFIGE project contributes to the Exploratory Research (ER) Programme. This ER project, has the objective of exploring and developing a general equilibrium theoretical framework of heterogeneous firms in which endogenous firm-level innovation decisions and R&D investments can be modelled. Different modelling approaches will be explored as different policies might be better captured under different frameworks. These frameworks will also take into account the spatial interactions between regions and countries of policy shocks and firms' decisions. An econometric approach leveraging micro and geographical data to estimate how heterogeneous parameters differentiated for types of economic activity and location affect output, employment, productivity and other variables such as public and private R&D and ICT investments will be developed. The final objective is to provide model-based analyses of the expected impact of thematic objectives such as R&D, innovation, ICT, competitiveness of SMEs, and reducing barriers to firms in the internal market can be evaluated in terms of firm productivity, value added, economic growth, employment and welfare.	JRC.B.3 JAVIER BARBERO JIMENEZ	1.7.a	RTD	JRC	n/a	GROW		01/01/2018 31/12/2019	INS-ER	2	Final report on HETFIGE - Heterogeneous Firms General Equilibrium model	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1.	31/12/2019	JRC technical reports	
7772 - ER-Projects JRC.A.5	6544 - ER 2017 WP1-15 2017 ER CALL for Projects - Placeholder for successful proposals	For each of the successful ER project proposals a new WP will be created describing the objectives, expected deliverables and resources. This information will be entered as soon as the proposals have been agreed in the Directorate. This single WP is now a place holder for ALL upcoming WP allowing to fix the overall allocated resources.	JRC.A.5 KARIN ASCHBERGER	1.7.a	JRC	JRC	n/a			01/01/2018 31/12/2019	INS-ER	01	Output for each WP	Each successful ER proposals selected by the Directorate will have its own WP with thematic description, resources and deliverables. Each ER WP must produce a final report at the end of the project.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
145 - Global IRI-TEC JRC.B.3	6763 - GLORIA INST GLORIA INST Global Industrial Research & Innovation Analyses (institutional)	GLORIA provides evidence to support the EU and national level policy-making in key areas of research and innovation policy. It builds on the IRIMA (Industrial Research Investment Monitoring and Analysis) projects undertaken together with DG RTD since 2004, but gives more emphasis on the analyses of global industrial research and its feed into the policy cycle. It continues the analysis of company data from the sample of world top 2500 R&D innovators, but takes a new policy focus on industrial dynamics. Much more than being big direct employers, producers and innovators, the top R&D innovators have huge indirect market and innovation power. They control supply and distribution chains, help smaller firms grow and internationalise, own participations in start-ups, provide work experience for future entrepreneurs, spin-off technologies, and collaborate with Universities and public research institutions for knowledge. Therefore, GLORIA focuses on detecting differences in industrial dynamics across regions and countries, and on better understanding the behaviour of top R&D innovators to harness globalisation. Capitalising on the interaction with companies within the project, company-level data is further disentangled into companies' different innovation investments, technological portfolios and their geographic distribution across countries and regions. This is crucial because Europe aspires to host (and eventually reshore) the R&D activities of leading innovative multinational firms, rather than seeing these offshored to other countries, and remove barriers to entrepreneurship, firm growth and employment. This activity not only reaps information from companies but also provides a structured dialogue with them. GLORIA benefits from the close coordination with	JRC.B.3 Alexander TUEBKE	1.7.a	RTD	JRC	n/a	CNECT ECFIN EMPL GROW REGIO	OECD - Organisation for Economic Co-operation and Development (OECD) WIPO - World Intellectual Property Organization	01/01/2018 31/12/2020	INS-RS	5	D2.1 GLORIA Working Papers and Policy Briefs 2018	Based on the description of the main research topics, the planned results of WP2 of IRIMA III will be compiled in a rolling-plan that will be used as a monitoring and information sharing tool. This rolling-plan will be regularly up-dated and shared with DG RTD. The planned results are expected to be released as Working Papers, Technical Reports and Policy Briefs. It is envisaged to produce a minimum of 10 publications (Working Papers and Technical reports format) and a minimum of 6 Policy Briefs over the two years. The Working Papers will be published regularly in the IPTS working papers series on Corporate R&D and Innovation, and the appropriate acknowledgement and visibility to the IRIMA project will be included. Technical reports and policy briefs will also be published regularly.	28/02/2019	Science-for-policy reports	
												6	D2.2 GLORIA Working Papers and Policy Briefs 2019	Based on the description of the main research topics, the planned results of WP2 of IRIMA III will be compiled in a rolling-plan that will be used as a monitoring and information sharing tool. This rolling-plan will be regularly up-dated and shared with DG RTD. The planned results are expected to be released as Working Papers, Technical Reports and Policy Briefs. It is envisaged to produce a minimum of 10 publications (Working Papers and Technical reports format) and a minimum of 6 Policy Briefs over the two years. The Working Papers will be published regularly in the IPTS working papers series on Corporate R&D and Innovation, and the appropriate acknowledgement and visibility to the IRIMA project will be included. Technical reports and policy briefs will also be published regularly.	29/02/2020	Science-for-policy reports	
603 - CC-ME JRC.I.1	7163 - CC-ME FSID Feasibility of functional time series analysis of income distributions	A feasibility study on the functional time series dynamic analysis of income distributions. The present "Exploratory Research - Activity" aims at exploring the feasibility of using this class of methods on income distribution data. The expected output is the production of one report or paper that characterizes the feasibility of this approach for the study of the dynamics of the income distribution for EU countries. This is related to the JRC 2030 strategy is on Fairness, Resilience and Competitiveness of the EU. In all three, the income distribution plays a central role.	JRC.I.1 PAOLO PARUOLO	1.7.a	JRC	JRC	n/a			01/01/2018 31/12/2018	INS-ER	201801	Final Report	A final report or paper that characterizes the feasibility of the functional time series approach for the study of the dynamics of the income distribution for EU countries.	31/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
1.7.b fuel cells and hydrogen technologies - support the Fuel Cells and Hydrogen Joint Undertaking by monitoring and assessing the technologies and multi-annual programme. This JRC work is closely linked with workstreams described in Sections 1.8 (transport - namely, on alternative fuels) and 3.2 (energy).																	
167 - EST JRC.C.1	2186 - FWC FCH2JU Framework Contract with FCH2 JU	Policy and scientific support to the Fuel Cells and Hydrogen 2nd Joint Undertaking (FCH2 JU) objectives at programme level for the duration of H2020, as indicated in sections 4.1 and 4.3 of the FCH2 JU Multi-Annual Work Programme (MAWP) and described in the Technical Annex to the Framework Agreement between JRC and FCH2 JU. In line with JRC mission and role under H2020, support typically addresses topics of cross-cutting nature from section 3.1.4 of the MAWP. This WPk is essential part of the overarching goal of FuCellHy, and particularly to objective 3. Activities calling explicitly upon JRC's independence are provided in-kind to the industry-led FCH Joint Technology Initiative and to the FCH2 JU Programme Office are not included in this WPk, but are integrated in the institutional activities of WPks STREP and P2H. As stated by the mid-term review of the first FCH JU, a lack of coordination regarding the RCS issues has characterised the development of the programme in the FP7 period. JRC plays a unique role at the	JRC.C.1 Thomas MALKOW	1.7.b	RTD	RTD	P. Vannson (RTD-G2), B. Biebuyk (FCH2JU)	ENER MOVE	- FUEL CELLS AND HYDROGEN JOINT UNDER	18/02/2016 31/12/2022	CON-TW	FCH2JU01	Contributions to FCH2JU steering processes (recurring yearly)	This is a cluster of deliverables supporting the Fuel Cells and Hydrogen second Joint Undertaking (FCH2JU) in setting and implementing its strategy, as well as providing assessment its progress towards targets. The provision of reference data for the benchmarking of the European programme is a major component of the activity package. For the same overarching objective, JRC performs also a review of the annual progress based on data collection from projects. Topics such as pre-normative research and standardisation strategies receive particularly attention. Moreover, JRC performs analysis of all safety events produced in the frame of projects execution. Also harmonisation of testing protocol, to allow for a coherent and comparable performance assessment of components such as fuel cells and electrolysers, is part of the activities. The annual contribution is spelled out in specific deliverables in every annual Rolling Plan, which is integral part of the Annual Work Programme of the FCH2JU.	31/12/2022	JRC contributions to policy documents	
1.7.c low-carbon energy observatory - provide data, analysis and assessment of the state of the art of different energy technologies, their industrial development, market barriers and global competition; estimate the potential contribution of the technologies in the future energy mix; carry out an inventory of scientific developments and new and emerging technologies. The relevant JRC work is closely interconnected with work described in Section 3.2																	
241 - KM-EnU JRC.C.7	2140 - LCEO Low Carbon Energy Observatory	The Low Carbon Energy Observatory (LCEO) is an Administrative Arrangement with DG-RTD that addresses 12 low carbon energy supply technologies identified in the SET-Plan Integrated Roadmap. Its objectives are: - Provide world-class data, analysis and intelligence on energy research and innovation policy and performance at EU, national and regional level, including developments in major countries outside Europe in order to support EU Energy research and innovation policy. - Facilitate technological development and deployment of innovative solutions by providing a neutral assessment on the state of the art of different energy technologies, identification of market barriers, as well as best practices in terms of mobilisation of private and public funds and policy measures. The assessments are based on data, information and project results from EU-funded projects, from selected international, national and regional projects (conditional on availability of data), from publications and from other appropriate sources. An inventory of scientific developments and new and emerging technologies (TRLs from 1 to 3, novel and high risk research ideas) has been set up and will be progressively added to over the course of the project. The JRC-EU-TIMES techno-economic model is used to support quantitative assessments. It allows estimates of the potential contribution of the technologies in the future energy mix. The results can also provide insights on social, economic, environmental impacts, on industrial competitiveness, growth and job creation, regional development, and ultimately on the effectiveness of energy research and innovation to EU policy objectives.	JRC.C.2 Nigel TAYLOR	1.7.c	RTD	RTD	Piotr Tulej (RTD.G.3), Irene Bonvissuto (RTD.G.3), B. Atanasiu (ENER.C.1), D. Raytchev (ENER.C.1)	ENER			01/04/2015 31/03/2020	CON-AA	220	Technology Development Reports 2018	LCEO technology development reports describe the technology maturity status and development trends. A separate report is made for each of each of 14 energy supply technologies. These will update the first set of reports delivered in 2016.	30/06/2018	Science-for-policy reports
													230	Technology Development Reports 2020	LCEO technology development reports describe the technology maturity status and development trends. A separate report is made for each of each of 14 energy supply technologies. These will update the second set of reports delivered in 2018.	31/03/2020	Science-for-policy reports
													260	Technology system synergies and issues	This report focuses on current research and trends on how an increasing share of variable renewable energy can be balanced with flexible power sources, storage and ICT (see AA amendment 2017)	31/03/2018	Science-for-policy reports
													280	Technology system synergies and issues	This report focuses on current research and trends on how an increasing share of variable renewable energy can be balanced with flexible power sources, storage and ICT (see AA amendment 2017)	31/03/2020	Science-for-policy reports
													360	Future and Emerging Energy Supply Technologies 2018	Annual report to present emerging concepts (TRLs from 1 to 3), analysing them in relation to the EU policy objectives and highlighting their potential to impact them. It will also report the status of the FET inventory/database.	30/09/2018	Science-for-policy reports
													370	Future and Emerging Energy Supply Technologies 2019	Annual report to present emerging concepts (TRLs from 1 to 3) in the arena of low carbon energy, analysing them in relation to the EU policy objectives and highlighting their potential to impact them. It will also report the status of the FET inventory/database.	30/12/2019	Science-for-policy reports
													420	Technology Market Reports 2018	LCEO technology development reports describe the market status and prospects. A separate report is made for each of each of 12 energy supply technologies. These will update the first set of reports delivered in 2016.	31/12/2018	Science-for-policy reports
													440	Review of Global Energy Scenarios	The report will update the 2017 review, addressing reports and scenarios published by major organisations (e.g. IEA World Energy Outlook, ETP, BNEF etc...) and technology associations and reporting on estimates on future technology costs, deployment and market potential and investments, for the technologies in focus. It would also highlight other major potentially disruptive technological developments as well as trends in other exogenous input factors for the models.	30/06/2019	Science-for-policy reports
470	Deployment Scenarios for LCEO Technologies	Results of JRC-EU-TIMES techno-economic model scenarios run to study the uptake and deployment of technologies and their interaction with the energy infrastructure including storage options in an energy systems perspective. This supports both the technology development reports (D2.2.x) and the technology market reports (D4.2.x).	31/03/2018	JRC technical reports													

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												480	Deployment Scenarios for LCEO Technologies	Results of JRC-EU-TIMES techno-economic model scenarios run to study the uptake and deployment of technologies and their interaction with the energy infrastructure including storage options in an energy systems perspective. This supports the 2020 technology development reports (D2.3.x)	31/03/2020	JRC technical reports
1.7.d bioeconomy - manage a Knowledge Centre for Bioeconomy, collecting, analysing, disseminating and modelling data on the bioeconomy and assessing food and nutrition security. Provide data and analysis on sustainable biomass supply and demand at EU level and worldwide, covering all types and uses of biomass, to provide a basis for coherent policies on the bioeconomy, including relevant agriculture, food, environment, climate, energy and industry																
569 - BIOECONOMY JRC.D.1	2300 - BIOMASS Coordination of the BIOMASS assessment study	BIOMASS will consolidate the output of the thematic, knowledge-generating WPKs of the BIOMASS assessment study, condensing it into key integrated deliverables. Thus it will develop further the overarching knowledge base on biomass supply, demand and flows at the EU and global levels, with a higher level of detail over Europe, in line with the BIOMASS mandate. This will provide a basis on which to assess the sustainability of and impacts linked with the production and use of biomass, and the competition and synergies between sectors with regard to biomass resources. The work will cover all sources of biomass and will highlight the assumptions, uncertainties, and gaps to be filled. The results of the modelling efforts will be used to project supply, demand and flows of biomass, the competition between sectors, and the impacts associated with the production and use of biomass under given policy scenarios. Future scenarios with short-term (2020), medium-term (2030) and long-term (2050) perspectives will be considered for prospective analyses.	JRC.D.1 Andrea CAMIA	1.7.d	RTD	JRC	AGUSTIN ESCARDINO MALVA	AGRI CLIMA DEVCO ENER ENV GROW MARE MOVE SG		02/01/2017 31/12/2019	INS-RS	2	EU and global biomass assessment and outlook	Consolidated project-level report on biomass supply, uses and flows for all biomass sources in Europe and worldwide, derived datasets and identified gaps. Prospective analysis of biomass supply and demand and their respective impacts with baseline and alternative scenarios (comprehensive report in accordance with the JRC BIOMASS Mandate). All Units in the BIOECONOMY project contributing to project objectives 1, 2 and 3 will collaborate to this deliverable.	30/12/2018	Science-for-policy reports
												4	EU and global biomass assessment and outlook	Consolidated project-level report on biomass supply, uses and flows for all biomass sources in Europe and worldwide, derived datasets and identified gaps. Prospective analysis of biomass supply and demand and their respective impacts with baseline and alternative scenarios (comprehensive report in accordance with the JRC BIOMASS Mandate). All Units in the BIOECONOMY project contributing to project objectives 1, 2 and 3 will collaborate to this deliverable.	31/12/2019	Science-for-policy reports
569 - BIOECONOMY JRC.D.1	3828 - BKC Management of the Bioeconomy Knowledge Centre	In line with the relevant topic in the Horizon 2020 Societal Challenge 2 Work Programme for 2016/17 and with the JRC Strategy 2030, a "Bioeconomy Knowledge Centre" (BKC) will be established as the Commission's central knowledge hub on the bioeconomy. It will serve as a single 'corporate' entry point on the bioeconomy. The BKC will mobilise the whole JRC competence related to the bioeconomy and follow the aim of knowledge centres defined in the Commission Communication on Data, Information and Knowledge Management at the EC (COM(2016)6626) "to collect, check, structure and make easily accessible and comparable all the relevant data, knowledge and intelligence in a specific field". Work Package (WP) BKC will manage the Bioeconomy Knowledge Centre, including the communication of the Knowledge Centre with the outside world. WP BKC will collect and manage data as well as synthesise information on bioeconomy coming from within the JRC (notably the BIOECONOMY project and its BIOMASS assessment study) and from other stakeholders. WP BKC will maintain and upgrade the Bioeconomy Knowledge Centre ICT platform once it has been set up	JRC.D.1 Marios AVRAAMIDES	1.7.d	RTD	JRC	Waldemar Kutt, DG RTD.DG2.F.1; Reinhard Buescher, DG GROW D2; Rob Peters, DG AGRI, H5; Claudia Olazabal, DG ENV, B1; Colin Wolfe, DG REGIO, G1; Paula Abreu Marques, DG ENER, C1	AGRI CLIMA DEVCO EAC ENER ENV GROW MARE MOVE REGIO SG TRADE		01/01/2016 31/12/2019	INS-RS	201706	Bioeconomy Report 2017	Thematic fact sheets on different aspects of the Bioeconomy	28/02/2018	JRC contributions to policy documents
												201801	Bioeconomy Report 2018	This annual report will, in the form of a collection of factsheets, describe the state of development of bioeconomy policies and their implementation across the EU, research and/or other relevant aspects. This deliverable will contribute to project objective 4.	31/12/2018	JRC contributions to policy documents
												201802	Bioeconomy Dashboards V2	Updates of Bioeconomy Dashboards in thematic, sectorial and geographical categories based on information provided by Member States and stakeholders. This deliverable will contribute to project objective 4	31/12/2018	JRC technical reports
												201901	Bioeconomy Report 2019	This annual report will, in the form of a collection of factsheets, describe the state of development of bioeconomy policies and their implementation across the EU, research and/or other relevant aspects. This deliverable will contribute to project objective 4.	31/12/2019	JRC contributions to policy documents
												201902	Bioeconomy Dashboards V3	Updates of Bioeconomy Dashboards in thematic, sectorial and geographical categories based on information provided by Member States and stakeholders. This deliverable will contribute to project objective 4	31/12/2019	Science-for-policy reports
569 - BIOECONOMY JRC.D.1	4864 - BKCsupport Bioeconomy Knowledge Centre – H2020 support action	In line with the relevant topic in the Horizon 2020 Societal Challenge 2 Work Programme for 2016/17 and with the JRC Strategy 2030, a "Bioeconomy Knowledge Centre" (BKC) will be established as the Commission's central knowledge hub on the bioeconomy. It will serve as a single 'corporate' entry point on the bioeconomy. The BKC will mobilise the whole JRC competence related to the bioeconomy and follow the aim of knowledge centres defined in the Commission Communication on Data, Information and Knowledge Management at the EC (COM(2016)6626) "to collect, check, structure and make easily accessible and comparable all the relevant data, knowledge and intelligence in a specific field". The BKC will connect and synthesise relevant existing sources of information in the JRC services, such as in the JRC BIOECONOMY project, and external institutions/organisations and experts, and generate new knowledge by structuring, analysing and properly displaying relevant data towards a holistic view of the entire bioeconomy chain in the context of the EC definition of the bioeconomy. The BKC will also collect data on relevant policies, markets, research and other related aspects, and better connect those who need knowledge on the bioeconomy, including, where possible, to help define the possible contribution of the bioeconomy to the circular economy. This Administrative Arrangement will not fund the full scope of the JRC Bioeconomy Knowledge Centre. Instead, the Administrative Arrangement will fund activities to provide additional expertise for questions that cannot be answered using existing JRC resources, including for qualitative and quantitative assessments that contribute to the evidence-gathering that arises in the context of specific policy developments, in regarding sustainability and circular economy objectives set forth in EU policy initiatives relevant to bioeconomy.	JRC.D.1 Marios AVRAAMIDES	1.7.d	RTD	RTD	WALDEMAR KÜTT	AGRI CLIMA DEVCO EAC ENER ENV GROW MARE MOVE REGIO SANTE SG TRADE		01/01/2017 31/12/2019	CON-AA	201702	BBI Markets: draft classification	Clear classification of different BBI products categories (e.g. platform chemicals, fine chemicals, formulated products etc.) and the corresponding value chains and markets (related to Task 1 of the Administrative Arrangement: Analysis of the EU BBI market)	30/03/2018	JRC technical reports
												201704	BBI product market indicators and land areas use	Draft description of market indicators and land areas use of the BBI products group. This deliverable focuses on different indicators and data related to the bio-based industry products related to production, consumption, trade of bbi feedstocks, economic indicators and land area (related to Task 1 of the Administrative Arrangement: Analysis of the EU BBI market)	30/06/2018	JRC contributions to policy documents
												201801	EU BBI markets and sustainability as a cross-cutting issue for the bioeconomy	An analysis of the EU bio-based industries (BBI) market aims to give an overview of the bio-based industrial sector in order to better define its scope and value-chains, to assess their dynamics (e.g. penetration rate and room for development), to estimate their land footprint and to analyse its potential development towards 2030. This analysis is related to Task 1 of the Administrative Arrangement). Yearly reports or factsheet(s) on bioeconomy scenarios will address opportunities and challenges that the European bioeconomy faces to achieve UN SDGs. This will include scenarios on bio-based industries and bioeconomy-related parts of the circular economy (related to Task 2 of the Administrative Arrangement: sustainability as a cross-cutting issue for the bioeconomy)	31/12/2018	JRC technical reports
												201802	Community of Practice and ICT platform	A network of institutions/organisations and experts for bioeconomy knowledge collection, synthesis and exchange will be established in a "Community of Practice". In cases where the JRC does not have the necessary data and/or expertise to respond to policy questions, the use of external expertise will be organised through this deliverable. External experts can prepare answers to policy questions, for instance in workshops. A new ICT platform, accessible to all stakeholders, will be put in place building further on the existing Bioeconomy Observatory (BISO/BeO) platform. The platform will serve as the single entry point at Commission level gathering relevant information within the JRC and from other EC services and institutions/organisations working on the bioeconomy.	31/12/2018	JRC technical reports
												201901	EU BBI markets and sustainability as a cross-cutting issue for the bioeconomy	An analysis of the EU bio-based industries (BBI) market aims to give an overview of the bio-based industrial sector in order to better define its scope and value-chains, to assess their dynamics (e.g. penetration rate and room for development), to estimate their land footprint and to analyse its potential development towards 2030. This analysis is related to Task 1 of the Administrative Arrangement). Yearly reports or factsheet(s) on bioeconomy scenarios will address opportunities and challenges that the European bioeconomy faces to achieve UN SDGs. This will include scenarios on bio-based industries and bioeconomy-related parts of the circular economy (related to Task 2 of the Administrative Arrangement: sustainability as a cross-cutting issue for the bioeconomy)	31/12/2019	JRC technical reports
												201902	Community of Practice and ICT platform	A network of institutions/organisations and experts for bioeconomy knowledge collection, synthesis and exchange will be established in a "Community of Practice". In cases where the JRC does not have the necessary data and/or expertise to respond to policy questions, the use of external expertise will be organised through this deliverable. External experts can prepare answers to policy questions, for instance in workshops. A new ICT platform, accessible to all stakeholders, will be put in place building further on the existing Bioeconomy Observatory (BISO/BeO) platform. The platform will serve as the single entry point at Commission level gathering relevant information within the JRC and from other EC services and institutions/organisations working on the bioeconomy.	31/12/2019	JRC technical reports
569 - BIOECONOMY JRC.D.1	4867 - ForBiom Forest-based sector biomass assessment and modelling	ForBiom will cover and further develop the forest-based sector knowledge base and modelling framework in the context of the bioeconomy project and the BIOMASS mandate. The knowledge base will comprise the improved assessment of woody biomass availability and potential, integrating forest statistics and national forest inventory data with spatially explicit information derived from remote sensing, also including initial assessments carried out at the global scale. Woody biomass supply, demand and flows at the EU and global levels will be further analysed, developing country-level balance sheets for EU Member States and enhanced biomass flow diagrams. Strategies to address the uncertainties in available statistics will be elaborated, especially concerning energy uses of wood. Mapping and quantification of wood-based value chains will be analysed, as will current trends and opportunities for advanced wood-based products. The modelling framework will be improved, strengthening the links and interactions between the forest resources and the forest trade models, updating of the harvest potential provided by the resource model based on the demand for industrial roundwood in the economic model, where empirically based cost-supply curves for primary woody biomass will also be derived. Outlooks for the forest-based sector will be developed linking land-use, forest resource, economic forest-sector, and energy models.	JRC.D.1 Andrea CAMIA	1.7.d	RTD	JRC	AGUSTIN ESCARDINO MALVA	AGRI CLIMA DEVCO ENER ENV GROW MARE MOVE SG		02/01/2017 31/12/2019	INS-RS	12	Forest-based sector assessment and outlook	The report will provide an improved assessment of woody biomass availability and flows at the EU level, integrating forest statistics with spatially explicit data. The assessment will be used as baseline to initialise modelling of future scenarios. The linkages between the forest-based sector models in use (forest resource model and global forest trade model) will be strengthened, as well as the first explicit integration with the land use model. Outlooks for the forest-based sector with a 2050 time horizon will be developed, sensitivity analyses will be carried out to analyse impacts on the modelling outcome of varying parameters and assumptions. D12 will contribute to project objectives 1, 2, 3, 4.	30/10/2018	JRC technical reports
												13	Advanced forest sector assessment and modelling	The deliverable will develop advanced concepts of forest resource and forest-based sector assessment and modelling, enhancing the spatially explicit aspects, the refinement of cost supply curves and the value chains assessments. Spatially explicit assessments of woody biomass and its changes across the EU territory will be carried out, further integrating land use, forest resources and forest-based sector models. D13 will contribute to project objectives 1, 2 and 3	30/10/2019	JRC technical reports
569 - BIOECONOMY JRC.D.1	4918 - AlgaeFishBiom Marine algae bioeconomy and commercial fish stock supply assessment	This Workpackage addresses at the same time the biomass supply and demand and its sustainability for commercially exploited marine fish and algae. For marine fish, based on former results, a refinement and updating of assessments of the supply of commercially exploited stock biomass estimates at the global and EU-levels will be carried out. During phase 1 of the BIOECONOMY (formerly ASBIO) project, biomass supply from marine fisheries was assessed for commercially-exploited fish stocks over large geographic scales. Taking advantage of the enhanced RAM Legacy Stock Assessment Database and the Memorandum of Understanding between the University of Washington and the JRC, the results from the analysis undertaken during phase 1 will be revisited, updated and broken down to provide further detail on refined, smaller geographical scales. For algae, on the basis of the work achieved during the 1st phase of the project BIOMASS, biomass supply and biophysical assessment will be further analyzed in terms of production statistics and technical achievement. Supply chain analysis will be carried out for both macro- and microalgae, technologies identified to evaluate commercialization potential of these resources for energy.	JRC.D.2 Gianluca FIORE	1.7.d	RTD	JRC	Marta IGLESIAS MELENDEZ	MARE	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) GFCM - General Fisheries Commission for the Mediterranean ICES - International Council for the Exploration of the Sea	02/01/2018 31/12/2019	INS-RS	56949181	Update commercial fish stock and aquaculture supply	Review of the state-of-the-art with respect to biomass supply and demand assessment for fisheries and aquaculture (2018) and first assessment for the feasibility to include data from the landing obligation (2019)	16/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												56949182	Macroalgae and microalgae biomass data and sustainability of producing methods	Improvement of the quality of the database on macroalgae biomass and flows; assessment of the microalgae production sector in Europe; analysis of the production potential of different producing methods (aquaculture and harvesting) and assessment of the available evidence on the sustainability of producing methods in relation to ongoing anthropogenic and environmental pressures.	16/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
569 - BIOECONOMY JRC.D.1	4921 - AgriBiom Agricultural biophysical biomass assessment (crops and grassland)	Activities in this work package build on the agricultural biomass assessment carried out in the context of the JRC BIOMASS mandate and that were initiated in 2015. The WP will further develop the overarching knowledge base on biomass supply, demand and flows at the EU and global levels, with a higher level of detail over Europe. This will be done for the agricultural sector for what concerns the part of the biophysical assessment (how much and where?). This work will contribute to provide a basis on which to assess the sustainability and impacts linked with the production and use of biomass, and the competition and synergies between sectors with regard to biomass resources. The work will focus on the biophysical component of the biomass assessment for agricultural crops and grassland. The biophysical assessment is driven by novel integration of Earth Observation data and biophysical models that describe Net Primary Production (NPP). Furthermore the use of Sentinel imagery to increase the resolution of satellite based biomass products will be explored.	JRC.D.5 Marijn VAN DER VELDE	1.7.d	RTD	JRC	Escardino	AGRI CLIMA ENER ENV ESTAT SG		01/01/2017 31/12/2019	INS-RS	2018D1	Agricultural biophysical assessment	The report will deliver a biophysical quantification of crop- and grassland biomass in Europe based on remote sensing, statistical and modeled data and will build upon 2017D1 with a further refinement of the plant partitioning approach. The assessment will be spatially explicit and to this end the methodology developed for the statistical component of the agricultural biomass estimates will be used. The report contributes to the project objectives 1 and 3	31/10/2018	JRC technical reports
569 - BIOECONOMY JRC.D.1	4939 - Economy&BBI Key trends in the EU bioeconomy	This WPK focusses on the economic features of the Bioeconomy and bio-based industries (BBI) and contributes to the JRC BIOMASS mandate. It will also further develop the available information about biomass supply, demand and flows in the EU Bioeconomy, with a special focus on the use of bio-based feedstock in the production of industrial materials and products (non-food/non energy), which represents an emerging industry with great economic and environmental potential but for which specific data are still difficult to retrieve. A new dataset will be created by collecting data on the organic waste flow in the EU, with a focus on lignocellulosic biomass sources. The representation of the non-traditional sectors of the Bioeconomy, like bio-based chemicals, plastics and composites, will be improved by collecting new data, also in cooperation with the Bio-based Industries Joint-Undertaking and other FP7/Horizon 2020 projects. As a result, the database will present the full biomass balance for the EU-28 and Member States. The estimation of socio-economic indicators describing the EU Bioeconomy sectors will be fine-tuned and disaggregated for more bio-based sectors and for individual Member States, in order to obtain a more precise picture of the EU trends in the Bioeconomy. The EU Bioeconomy state-of-the-art and development prospective will be analysed in comparison with partner countries, in order to highlight the EU position and perspectives at global level.	JRC.D.4 Robert MBAREK	1.7.d	RTD	JRC	Thomas DODD	AGRI CLIMA DEVCO ENER ENV GROW MARE MOVE SG		01/01/2017 31/12/2019	INS-RS	1	Combining the biomass flow approach with classical economic indicators to assess the performance of the EU bioeconomy sectors	Infosheets and analysis on the different sectors composing the bioeconomy will be compiled. These infosheets will build on the work undertaken in 2016 and 2017 on the quantification of the biomass produced and used in the different sectors of the bioeconomy (Sankey diagram resulting from the JRC Biomass assessment study) and on the quantification of sectorial socio-economic indicators (like jobs, turnover, value added, labour productivity). Transversal indicators as the value added produced by tonne of biomass manufactured will help addressing concepts like the resource efficiency within the EU bioeconomy. Indicators will be made available at Member state level in a dedicated webpage and through scientific publications.	31/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	New socio-economic indicators of the EU Bioeconomy with focus on the bio-based industry	This deliverable improves the knowledge on the manufacturing sectors (manufacturing of food, wood, pulp and paper, chemicals, pharmaceutical, etc.). In particular bio-based chemicals will be further investigated. The pilot indicators jobs and turnover in the bioeconomy will be complemented with new indicators derived from EUROSTAT – Prodcum (volume and value of bio-based production, including bio-based chemicals and plastics) and from EUROSTAT – Structural business statistics (number of enterprises, investments, wages and salaries, etc.). Data will be provided through infosheets and scientific publications.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												3	Combining the biomass flow approach with classical economic indicators to assess the performance of the EU bioeconomy sectors	Infosheets and analysis on the different sectors composing the bioeconomy will be compiled. These infosheets will build on the work undertaken in 2016 and 2017 on the quantification of the biomass produced and used in the different sectors of the bioeconomy (Sankey diagram resulting from the JRC Biomass assessment study) and on the quantification of sectorial socio-economic indicators (like jobs, turnover, value added, labour productivity). Transversal indicators as the value added produced by tonne of biomass manufactured will help addressing concepts like the resource efficiency within the EU bioeconomy. Indicators will be made available at Member state level in a dedicated webpage and through scientific publications.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												4	New socio-economic indicators of the EU Bioeconomy with focus on the bio-based industry	This deliverable improves the knowledge on the manufacturing sectors (manufacturing of food, wood, pulp and paper, chemicals, pharmaceutical, etc.). In particular bio-based chemicals will be further investigated. The pilot indicators jobs and turnover in the bioeconomy will be complemented with new indicators derived from EUROSTAT – Prodcum (volume and value of bio-based production, including bio-based chemicals and plastics) and from EUROSTAT – Structural business statistics (number of enterprises, investments, wages and salaries, etc.). Data will be provided through infosheets and scientific publications.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
569 - BIOECONOMY JRC.D.1	4967 - EnvImpact Assessment of Environmental Impacts	This workpackage aims at making an assessment of the environmental and time-dependent climate impacts of the use of biomass for energy and other purposes, including industrial ones, based on a life-cycle perspective in the context of the JRC BIOMASS mandate. The analysis will also include assessing alternative uses of biomass. The assessment will be carried out following an attributional life-cycle analysis perspective, expanded to include non-energy uses of the biomass, land use, economic and technological performances. Moreover, making use of the results of the modelling framework set in that context, this WP will also provide an environmental impact assessment of complex and large scale policy scenarios.	JRC.C.4 Laura LONZA	1.7.d	RTD	JRC	AGUSTIN ESCARDINO MALVA	AGRI CLIMA DEVCO ENER ENV GROW MARE MOVE SG		01/01/2017 31/12/2019	INS-RS	1	Environmental Potential Impacts of EU energy system	This deliverable will present the results of the Environmental Impact Assessment of future EU energy system trends including LULUCF legislation. The modelling framework developed in the context of this overarching project will be used to test multiple scenarios to study the influence of various policy options and technological developments.	30/11/2018	JRC technical reports
												2	Environmental impact assessment of EU bioeconomy	Assessment of environmental impacts of future EU bioeconomy trends based on a defined set of indicators, taking stocks of the results obtained from the integrated modelling framework.	31/12/2018	JRC technical reports
569 - BIOECONOMY JRC.D.1	5070 - WasteRes Waste assessment and residues	The work package "waste assessment and residues" aims at supporting the assessment of options for the valorisation of biomass-based waste and residues, both substituting virgin raw materials and for producing energy. The basic concept is the so called "industrial symbiosis" principle for which a waste/by-product of a production stream could become an input for another production stream. The work package will contribute to the BIOMASS mandate and the focus will be mainly on food waste, assessing the technological options available for the use thereof. Base on identified options, different scenarios will be built for both domestic, industrial/agricultural waste and residues. The benefits associated to the scenarios will be evaluated applying life cycle thinking concepts and methodologies in order to ensure that the benefits associated to the resource and energy recovery are not offset by additional environmental burdens.	JRC.D.1 SERENELLA SALA	1.7.d	RTD	JRC	AGUSTIN ESCARDINO MALVA	AGRI CLIMA ENER ENV GROW SANTE SG	EEA - European Environment Agency	01/01/2017 31/12/2019	INS-RS	20181	review of industrial food waste and residues	A literature review on the use of industrial food waste and residues will be conducted as input for the development of the scenarios for del 20182. The link with energy production and energy efficiency in industrial systems will be ensured.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												20182	scenarios on industrial food waste	The assessment of options related to industrial food waste to be used as resources will be developed. The expected benefits will be tested a life cycle based indicators framework	31/10/2018	Science-for-policy reports
												20191	scenarios on industrial food waste on regional basis	The assessment of options related to industrial food waste to be used as resources will be tested accounting for regional specificities with regards to location of the agricultural stage and food processing stage. The expected benefits will be tested a life cycle based indicators framework	31/10/2019	Science-for-policy reports
569 - BIOECONOMY JRC.D.1	6084 - BioMonitor H2020 proposal for call BB-02-2017 Towards a method for the collection of statistical data on bio-based industries and bio-based products	This is a placeholder for a H2020 proposal submitted. Types of action: RIA Research and Innovation action Model: two-stage Deadline first stage:14 February 2017 (submitted) 2nd stage Deadline: 13 September 2017 Proposals shall develop and implement a method for the collection of data on bio-based products, taking into consideration the incorporation of the data in the European statistical infrastructure (Eurostat), building on and contributing to on-going activities on exemplary bio-based products (Bio-based Succinic Acid & 1,4-Butandiol, lubricants). The following aspects will represent the framework for developing the proposals: (1) links with current CEN standardisation work on bio-based products; (2) training support or technical inputs to official customs and competent laboratory staff in Member States and to relevant activities within the existing programmes such as Customs 2020 and European Union Customs Competency Framework (EU Customs CFW); (3) definition of the minimum bio-based carbon and/or bio-based content for some bio-based product groups (except bio-based lubricants); (4) data compatibility with European and international databases (e.g. FAOSTAT, PSD, etc.). Data generated should be fed into economic models, existing or newly developed, enabling the description of the development of the bioeconomy, its interaction with the rest of the economy, and its economic, environmental and social impact. Consortia should include a balanced combination of expertise on bio-based products, statistical reporting from Member States and modelling. Proposals should build upon the existing work of completed and on-going projects, including the current activities of the	JRC.D.4 Robert MBAREK	1.7.d	RTD RTD	RTD	n/a	AGRI GROW		01/01/2018 31/12/2021	CON-IA	012018	Report on the framework for measuring the size and development of the bioeconomy with a list and detailed description of bioeconomy indicators, measures, and data requirements	This report will provide a collection of traditional and new indicators that can be used to measure and monitor the development of the bioeconomy, especially for bio-based industries and bio-based products (other than food-chain and bioenergy). Outputs will be made widely available, including to relevant multipliers and portals such as the Bioeconomy Knowledge Centre.	31/12/2018	JRC technical reports
												022018	Draft design of BioMonitor toolbox	The BioMonitor Model Toolbox will be built upon (i) existing tools already useful for bioeconomy analysis; (ii) existing tools that must be enhanced before implementable for bioeconomy analysis; and (iii) – if needed – new tools that need to be developed in order to fill specific gaps on bioeconomy analysis (e.g. BioMat). Key is inter-action with the data collection methods that provide the missing data on new bio-based sectors and bio-based products. The toolbox will focus on capturing open-source econometric and IO analysis methods, open-source simulation models (e.g. AGMEMOD, CAPRI, EFISCEN, EFI-GTM, POLES), as well as simulation models with restricted access but available to the project (e.g. MAGNET). The output of this task is a report documenting the design of the BioMonitor Model Toolbox.	31/12/2019	JRC technical reports
1.8.Transport																
1.8.a transport innovation - support the strategic transport innovation agenda and develop the transport innovation and monitoring information system (TRIMIS).																
241 - KM-EnU JRC.C.7	3943 - TRIMIS Transport Research and Innovation Monitor and	TRIMIS web-portal aims at becoming the Commission's instrument for mapping technology trends and research and innovation capacities in the transport field. It will be designed as an open-access information and knowledge management system and will need to fulfil multiple roles: horizon scanning, monitoring progress against R&I roadmaps, mapping and support to further steps, dissemination of information and putting together and further developing a set of toolboxes and models. TRIMIS supports transport policy makers and researchers to identify innovations with the greatest promise for the future, and its thematic focus will be on areas where public intervention at European level can create the highest added value in order to overcome weaknesses of the transport innovation system and pave the way towards an increased competitiveness of the sector while addressing the broad goals of the EU energy and transport strategy. It is the analytical support tool for the establishment and implementation of an EU Strategic Transport Research and Innovation Agenda (STRIA). Under TRIMIS information system, transport research projects are arranged within the seven STRIA roadmaps that have been adopted in the "Europe on the move" package in May 2017. These cover a number of areas including transport electrification, low-emission alternative energy for transport and smart transport and mobility and services.	JRC.C.4 Eva DEKAD	1.8.a	MOVE	MOVE	Robert MISSEN, HULLMOVES B.2	RTD		16/12/2016 31/12/2020	CON-AA	1	TRIMIS PORTAL	Creation and release of TRIMIS portal - version 2	31/12/2018	Scientific information systems and databases
												2	Transport R&I database	The database of projects and programmes, transport technologies and innovations, developed for v1 of the portal released in 2017, will be updated in 2018 by adding new projects/programmes and with an improved structure. This will be further continuously updated.	31/01/2018	Scientific information systems and databases
												3	Technology status and Horizon Scanning	TRIMIS shall keep track of developments in the field of transport and identify relevant new technologies. This assessment will make use of the transport R&I database, and will be carried out through: - Monitoring and assessing transport sector and technology performances - Monitoring progresses of funded (EU, MS etc.) R&I projects - Flagging new opportunities and new technologies	31/12/2018	Science-for-policy reports
												4	Support to STRIA roadmaps	TRIMIS shall provide continuous support the entire chain of implementation, further development, monitoring and updating of the roadmaps identified within STRIA, through the publication of Roadmaps Information Sheets. Updates of progress against the STRIA roadmaps, as well as gaps and delays in progress shall be identified and flagged. First releases of information sheets will be already provided in 2018, and will continue in 2019.	30/12/2019	JRC technical reports

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	Information System											5	Transport R&I scoreboards and KPIs	Preparation and publication of real time and annual Transport R&I Scoreboards, and definition of measurable Key Performance Indicators (KPIs) relevant for mapping innovation and to assess the performance of STRIA roadmaps	20/12/2018	Science-for-policy reports
												6	Monitoring Transport R&D investments	This deliverable provides continuous monitoring of transport R&D investments, financial and human resources, and socio-economic aspects, through the creation of capacity maps addressing all STRIA roadmaps, and the creation of country profiles. Rough estimates of the current corporate and public research and development (R&D) investments in transport technologies in the EU will also be provided.	31/12/2019	Science-for-policy reports
												7	Transport modelling	This deliverable makes an assessment and provides coordination of existing transport modelling activities, to ensure that R&I/technology trends and outcomes of STRIA roadmaps are well reflected in transport models used by the JRC and the EC.	31/12/2019	JRC technical reports
												8	Communication and stakeholders engagement	The aim of this deliverable is to keep stakeholders, who will use and contribute with information to TRIMIS closely involved in the process. A stakeholders network will be developed and continuously expanded. A strategy for digital engagement will be developed.	31/01/2018	JRC technical reports
1.8.b alternative fuels - carry out pre-normative testing and help to develop standards for implementing the alternative fuels infrastructure under the Alternative Fuels Infrastructures Directive; support the follow-up of the action plan for alternative fuels infrastructure with the broadest use of alternative fuels and related provisions in Directive 2014/94/EU on the deployment of alternative fuels infrastructure; perform modelling of electromobility including																
195 - ALFI JRC.C.4	736 - AFI Alternative fuels infrastructure scale up	Perform integrated analyses in order to assist the design and implementation of electro-mobility/ alternative fuels infrastructure related policy initiatives at European and regional/urban level, including smart city initiatives. The Alternative fuels infrastructure scale up WPK performs comprehensive multidisciplinary scenario analyses of technological, market, behavioural aspects and policy options for smart mobility solutions with focus on "scaling up the use of low-emission alternative energy for transport", an action from the European Strategy for Low-Emission Mobility (COM(2016)244). The activities in this work-package primarily support the implementation of the Directive 2014/94/EU on the deployment of alternative fuels infrastructure (AFI) and the related Action Plan (to be adopted as part of the Winter package 2017). Costly, inefficient, or unfair policy measures need to be avoided. A successful implementation of the AFI Directive and related actions is facilitated by testing policy initiatives in a virtual, multi-disciplinary model-based setting as provided by this WPK.	JRC.C.4 Elena PAFUMI	1.8.b	MOVE	JRC	Hugues Van Honacker (MOVE.C.1)	CLIMA ENER EPSC GROW	EEO - European Electro-mobility Observatory	01/01/2014 31/12/2020	INS-RS	15	Lessons from Assessment of National Policy Framework.	Improve guidance for member state NPFs, study and inform on best practices	31/12/2018	JRC contributions to policy documents
												18	Alternative fuel scenarios for European transport system	Report on transition scenarios towards high shares of alternative fuels (electricity, CNG, LNG, H2) in the European transport system	31/12/2019	Science-for-policy reports
167 - EST JRC.C.1	3444 - FiveVB Five Volt Lithium Ion Batteries with Silicon Anodes produced for Next Generation Electric Vehicles	The FiveVB project will develop a new cell technology based on innovative materials such as high capacity anodes, high voltage cathodes and stable, safe and environmentally friendly electrolytes. In FiveVB, JRC contributes to the definition of testing methodologies and carries out ex-situ experiments. Through the work in FIVEVB, JRC extends and reinforces its collaboration with industry, contributes to competitiveness of European industry and profits from the interaction with key material suppliers (for battery anode, cathode and electrolyte).	JRC.C.1 Andreas PFRANG	1.8.b	MOVE	RTD	Liam BRESLIN (HoU RTD.H.2)	GROW MOVE	- ROBERT BOSCH GMBH - Zentrum für Sonnenenergie- und Wasserstoff-Forschung - ZSW - Free University of Brussels (VUB) - AVL LIST GMBH - UMICORE AG & CO. KG	01/05/2015 31/12/2018	CON-IA	01	D7.2 Report on characterisation of full battery cell	Report that will summarize the results of life cycle tests performed on full cells (PHEV1) in task 7.4.	31/12/2018	JRC technical reports
												2	D1.4 Report on Environmental Impact Eco-Design	Report that will summarize the results of task 1.4 which focuses on the environmental impact of the new battery development (incl. comparative life cycle assessment).	31/03/2018	JRC Technical reports
												3	D7.4 Post mortem analysis report	Report that will summarize the results of post mortem analysis carried out within task 7.5 on G0C, G1C, G2C and full cells.	30/04/2018	JRC technical reports
167 - EST JRC.C.1	6780 - LIBforSecUse Quality assessment of electric vehicle Li-ion batteries for second use applications	Li-ion batteries are still usable after first use in electric vehicles (EV), e.g. as low cost energy storage media for buildings and grids. There is a need to develop an efficient method and the metrological infrastructure to reliably measure their residual capacity. Feasibility to estimate the residual lifetime must be studied. For both purposes fast and non-destructive impedance based methods will be applied. Comparable measurement of these quality parameters is indispensable to establish a reliable market for such 'second life' batteries. This is key to increase EV sales, since costs can be significantly reduced. Greenhouse gas emissions and air pollution would be reduced and jobs in the European automotive industry would be safeguarded.	JRC.C.1 Andreas PFRANG	1.8.b	MOVE	RTD	n/a	ENER GROW	- Laboratoire National d'Essais - VOLKSWAGEN AG - National Institute of Chemistry - Slovenia - TECHNISCHE UNIVERSITAET CARLOWILHELMINA ZU BRAUNSCHWEIG - Czech Metrology Institute	01/04/2018 31/03/2021	CON-IA	D1	Reports on JRC experimental testing	Reports on JRC experimental testing executed according to project WP	31/12/2018	JRC technical reports
167 - EST JRC.C.1	6781 - CarE-Service Circular Economy oriented services for reuse and remanufacturing of hybrid and electric vehicles	Hybrid and Electric vehicles have the potential to revolutionise future transportation habits in the direction of reducing environmental impacts and transportation costs. The CarE-Service project proposal aims at demonstrating innovative circular economy business models based on advanced mobility services exploiting hybrid and electric vehicles. Such business models will entail re-use, remanufacturing and recycling of components and materials of hybrid and electric vehicles for applications in the automotive sector and in other sectors (energy, plastics, mechanical, furniture, etc.). Mobility services will consist in novel performance based, non ownership-based and highly customized value proposition for different customer segments that will establish in Europe highly efficient and competitive recycling supply chains of hybrid and electric vehicles. Through the CarE-Service project the JRC reinforces its collaboration and exchanges with industry and deepen its competences related to second use and recycling of batteries.	JRC.C.1 Andreas PFRANG	1.8.b	MOVE	RTD	n/a	ENER ENV GROW	- University of Linköping - Fraunhofer Institute of Machine Tools and Forming Technology CNR - ITALIAN NATIONAL RESEARCH COUNCIL	01/06/2018 31/05/2021	CON-IA	CarEService 1	Scientific reports according to the project work programme	Scientific reports with JRC input in accordance with the deliverables specified in the project work programme	31/12/2018	JRC technical reports
1.8.c transport policy analysis and tools for citizen's awareness and education - perform socioeconomic analyses of the transport sector, using transport models, quantitative methodologies, data, scenarios and technology watch; develop congestion indicators; and contribute to harmonisation of transport data with spatial and environmental information.																
141 - TEM JRC.C.6	971 - TSEA Transport sector economic analysis	TSEA develops and applies quantitative tools, methodologies and models to analyse economic, societal and environmental issues related to transport markets and networks. The main objective of the WP is to collect, generate, process and assess evidence that can be used as input to the policy process, at European or global level and at a national, regional or local level. The data or estimates processed allow TSEA to provide three types of quantitative analyses required in the policy process of the European Commission:	JRC.C.6 Panayotis CHRISTIDIS	1.8.c	MOVE	JRC	Maria Cristina Mohora (MOVE.A.3)	CLIMA REGIO	Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2016 31/12/2019	INS-RS	1	Peer-review paper(s) transport policy assessment	Applications of TSEA analytical instruments to address transport policy (infrastructure and/or regulations), transport externalities (congestion, GHG emissions) are expected to be published in the relevant peer-reviewed journals	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-E)
141 - TEM JRC.C.6	2028 - TEntaMo Europe wide Transport model	This Administrative Arrangement is envisaged as a means to build upon JRC expertise in order to provide DG RTD with scientific input for the public tender "Europe wide transport models, technology watch, data and scenarios", ensuring that the Commission obtains a workable, consolidated instrument to be used and shared by the relevant services concerned with transport research and policy. It involves support to the Commission in the development of a modelling tool at EU level that has sufficient level of detail and scope to allow for better support of EU policy preparation, contributing to the success of the tender through an active participation in the evaluation of proposals and in the Steering Group overseeing the contract's progression. The activities foreseen imply a close cooperation with DG RTD, providing continuous support and timely response to any request pertaining technical and scientific validity of the data, analytical framework and results of this tender.	JRC.C.6 Elena NAVAJAS CAWOOD	1.8.c	MOVE	RTD	A DAMIANI (RTD.H.1) A. KOURTESIS(RTD.H.1) in collaboration with MOVE.A.3	MOVE REGIO		01/04/2015 31/03/2018	CON-AA	4	Final Report	Report on the work executed to provide DG RTD with scientific input for the public tender "Europe wide transport models, technology watch, data and scenarios". JRC actively participates in the evaluation of proposals and in the Steering Group overseeing the contract's progression.	31/03/2018	JRC technical reports
195 - ALFI JRC.C.4	3565 - AAF Alternative Aviation Fuels	Aviation is the fastest growing transport mode globally: the UN ICAO General Assembly adopted the CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) in October 2016 for deployment as of 2020. The relevant SARP (Standard And Recommended Practices) will be adopted by ICAO in 2019. Drop-in liquid alternative fuels are a key contributor of the CORSIA scheme to reduce or offset international aviation emissions. Emissions savings take place in the Well-to-Tank part compared to fossil fuels: a Well-to-Wake (WTWa) methodology with reference default values applicable at global scale is required for inclusion in the SARP.	JRC.C.4 Laura LONZA	1.8.c	MOVE	JRC	Klaus WINKLER (MOVE.E.3); Antonio COLACO (MOVE.C.2); Rasa SCEPONAVICIUTE (CLIMA.B.3); Thomas BRUNHES (CLIMA.A.3);	CLIMA ENER	- INSTITUT FRANCAIS DU PETROLE - MASSACHUSETTS INSTITUTE OF TECHNOLOGY IASA - International Institute for Applied Systems Analysis ANL - Argonne National Laboratory EASA - European Aviation Safety	01/01/2018 31/12/2019	INS-RS					
141 - TEM JRC.C.6	6416 - REGIOTRANS2 Urban and Regional Aspects of Transport	Support to DG REGIO on cohesion and cities report, focusing on transport aspects. AA in continuation of pre-existing AA ending 2018. Under discussion.	JRC.C.6 JUAN IBANEZ RIVAS	1.8.c	REGIO	REGIO	n/a	MOVE		01/07/2018 30/06/2020	CON-AA	D1	Input to Cohesion report	Quantitative analysis of issues related to regional policy for transport	31/12/2018	JRC technical reports
141 - TEM JRC.C.6	6417 - TRIMODE 2 Application of European Transport Model	Extension of AA with RTD on TRENTAMO/TRIMODE (ending in 2018). Content of extension currently under discussion.	JRC.C.6 Elena NAVAJAS CAWOOD	1.8.c	MOVE	RTD	n/a	REGIO		01/07/2018 30/06/2020	CON-AA	D1	Scenarios and analyses using TRIMODE	Application of TRIMODE model for the simulation of a number of policy relevant scenarios.	31/12/2018	JRC technical reports
141 - TEM JRC.C.6	6419 - BDT Big Data applications in transport	Analysis and impact assessment of Big Data application in transport (interest expressed by RTD is signing new AA with JRC)	JRC.C.6 ANA NORMAN	1.8.c	RTD	RTD	n/a	CNECT MOVE		01/07/2018 31/12/2019	CON-AA	D1	Review of Big Data applications in transport	Review of possible applications of Big Data in transport. Analysis of technologies and areas of impacts. Estimation of benefits of investment in Big Data from the policy point of view.	31/12/2018	Science-for-policy reports
7534 - C2ART JRC.C.4	7222 - SIMOD Societal Implications of Mobility Disruption Scenarios	SIMOD aims at strengthening the JRC capacities to support the social dimension of impact assessments dealing with European transport strategies. SIMOD will be based on robust science, cross-cutting and combining social sciences, economics and engineering, with staff from 3 units from Directorates B and C. A first research line of SIMOD will analyse the job impact and employment intensity of all segments of the transport sector (manufacturing, maintenance services, as well as transport services) with a bottom-up data driven assessment approach. It will combine various statistical resources from Eurostat with other data (including business data and big data) to derive a detailed and complete picture of the EU transport sector with Member State detail. The bottom-up approach will also include, to the extent possible, the socio-economic stratification and skills of workforce. This methodology will	JRC.C.4 MARIA CRISTINA GALASSI	1.8.c	GROW	JRC	n/a	CLIMA CNECT EAC EMPL EPSC MOVE RTD SG		01/01/2018 31/12/2019	INS-UR	1	Updated JRC-GEM-E3 model	Establish a bottom-up methodology to analyse job impacts and job shifts in the transport sector; extend the JRC-GEM-E3 model with a much better representation of the transport sector (both technologies and in employment)	30/06/2019	Scientific information systems and databases
												2	Mobility Disruption Scenarios	Identify yet realistic (possibly disruptive) scenarios for a transition towards highly automated and electrified road transport by or beyond 2050. Stakeholder input will be sought via a call for evidence workshop	28/02/2019	Science-for-policy reports
												3	Economic scenarios and adaptation strategies	Explore policy options and strategies for enhancing positive job impacts and mitigating negative job impacts caused by a smart mobility revolution combining the various developed and improved tools in SIMOD with a qualitative framing of possible barriers and other social dimensions.	31/12/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7534 - C2ART JRC.C.4	7305 - VEST-App Vehicle Simulation for Traffic Applications	The objective of the current Work-Package is the development of an Application Program Interface (API) for the CO2MPAS vehicle simulation model and consequently its seamless integration within a commercial traffic simulation software. The proposal is motivated by the limited capability of existing traffic simulation models to correctly reproduce vehicle dynamics and therefore also energy/fuel consumption and the particular characteristics, in terms of simulation time, data requirement and expected accuracy, of the CO2MPAS model developed and maintained by the JRC.C.4 Unit. The proposal offers several possible advantages to the JRC. It can indeed i) improve the capability of commercial traffic simulation models to predict the effect on energy/fuel consumptions and emissions of changes to the road transportation system; ii) spread the use of CO2MPAS for applications going beyond the implementation of EU policies; iii) strengthen JRC position in the field of traffic simulation; and iv) offer an income generated by the royalties connected to the use of the API.	JRC.C.4 BIAGIO CIUFFO	1.8.c	GROW	JRC	n/a	CLIMA MOVE		01/02/2018 31/01/2019	INS-PC	1	VestApp Final Report	The final report will describe the work carried out, its scientific value, the business model for a possible market exploitation of the application and the description of the software developed	31/01/2019	JRC technical reports
1.8.d Intelligent transport systems and electronic tools - provide technical support to implement the 'smart tachograph', in particular to prepare new technical specifications; support the development of cooperative intelligent transport systems and connected and automated vehicles; develop electronic tools in support of quality inland water transport across Europe.																
328 - SPRINT JRC.E.3	565 - C-ITS Cooperative Intelligent Transport Systems and vehicle cybersecurity	This WP offers a direct support to the DG MOVE unit in charge of Intelligent Transport Systems (MOVE.DDG1.B.4.Sustainable & Intelligent Transport), in particular in the preparation of the Phase 2 report of the C-ITS Platform, planned first part of 2018. JRC E.3 is already involved in various WP of the DG MOVE C-ITS platform and will support the edition and review of this second report, addressing the emerging challenges regarding trust, privacy, data protection, e-identity and security aspects. In a more prospective approach, research will also be dedicated to the growing concerns regarding the communications between vehicles and the road infrastructures, and the probable near introduction of fully autonomous vehicles, triggering legal, technical, and possibly ethical new challenges. This WPK will be developed in parallel of a forthcoming AA with DG MOVE, looking at the preparation of implementing acts using the ITS directive 2010/40/EU as legal framework, where the JRC will play a key role in the preparation of a new Security Certification Policy for C-ITS. In addition, the security of the intra-vehicle systems is becoming more and more important. Both passenger cars and commercial vehicles are increasingly equipped with sensors and cyber-physical components (e.g., vehicle units and computing platform), which are historically not designed with security solutions because the manufacturers relied on physical security (the car was not connected to the outside world). With the evolution to connected and automated cars, it is quite important that security properties (e.g., integrity, authentication) are put in place and eventually proposed for standardization. This work package will investigate the main issues in this area.	JRC.E.3 Gianmarco BALDINI	1.8.d	MOVE	JRC	Claire DEPPE	CNECT ENER GROW	ACEA - European Automobile Manufacturers Association EP - European Parliament Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2014 16/12/2019	INS-RS	56504	Security & Privacy Challenges in C-ITS	Identification and recommendations on Security and Privacy/Data protection challenges, when cooperative and automated vehicles (private and professional) will start entering the market, including legal implications together with the necessary technical framework to settle and reach a seamless and harmonized implementation throughout EU and beyond. In particular, automated vehicles will be based on the information collected by the sensors to perform their functions (GNSS receivers, image sensors, IMU and so on). Errors or lack of accuracy in the data collected in the sensors can negatively impact the decision process of the autonomous vehicle with serious safety risks. The deliverable will survey security and privacy issues in cooperative and automated vehicles vehicles, with specific relevance on sensor accuracy for the autonomous decision process and the potential implications for safety. The deliverable will identify and produce recommendation for policy and standardization.	28/12/2018	JRC technical reports
												5652	Cybersecurity of Vehicles	Autonomous and automated vehicles are a promise for a safer, cleaner and more efficient traffic. It supposes the implementation of many intelligence and complex digital systems, in particular within the IT networks of the vehicles themselves (sensors, distributed processing units, learning systems, intra-vehicle systems, etc). Any dis-functioning (lack of accuracy, loss of data or control, tampering), resulting either from failures or from attacks can create safety hazards. As a consequence, the security of the intra-vehicle systems is becoming more and more important. This deliverable will investigate and assess the exposure of these sensitive systems to possible disruptions, assessing the impacts, and will recommend mitigation measures. It will address threats to any kind of the vehicle features: safety, security, environmental performances, data protection and privacy.	16/12/2019	JRC technical reports
328 - SPRINT JRC.E.3	3528 - SIDT Secured and Interoperable Digital Tachographs	New smart tachographs deserve sound interoperability certification scheme, smart and secured positioning systems, and reliable communications of parameters (tachograph status or weights) to enforcers. The techniques and solutions developed and adopted in this context can also be transferred to other transport regulated applications, like the vehicles weight monitoring, in relation with the Directive (EU) 2015/719 on Weight & Dimensions. This WP will technically support the implementation of these new requirements, in close collaboration with DG MOVE and smart tachographs final users. Specific research activities will be conducted in collaboration with the European GNSS Agency (GSA) to promote the use of EGNOS/Galileo.	JRC.E.3 Gianmarco BALDINI	1.8.d	MOVE	JRC	Eddy LIEGEOIS	CNECT ENER GROW	ACEA - European Automobile Manufacturers Association GSA - European GNSS Agency MS EU - Member states EU UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2016 30/12/2019	INS-RS	352804	Laboratory for Interoperability Certification	Following the interoperability test specifications defined in the deliverable 352803, this deliverable describes the laboratory design requirements, and the subsequent implementation (including the assessment, evaluation and validation of the new lab setup). First certifications are expected in 2018, accordingly the new lab must be ready and accepted by DG MOVE, the Member States and the other stakeholders by 2017. Subsequent adjustments are planned in 2018, till full stabilization of processes.	21/12/2018	Technical systems
												352805	DSRC interface for vehicles weight monitoring	To anticipate the technical requirements for enforcement readers, complementary to remote DSRC for Tachograph enforcers, in order to ease the development of reliable readers for the vehicles axis remote weight monitoring. This deliverable will also demonstrate the feasibility of low cost readers for weight monitoring and will support the implementation of the Weight & Dimensions Directive, foreseeing these readers in 2021.	31/10/2018	JRC technical reports
												SOCREG	A new approach for enforcing professional drivers Social Regulation 561/2006	Tachographs, Digital Tachographs, Smart Tachographs are trusted and secure mandatory recording equipment, to enforce Social Regulation 561/2006 rules, deployed already in more than 50 countries that provides law enforcers with reliable and undisputable data about driving time and rest periods of heavy vehicle drivers. These tachographs, though considered robust and secured, are constantly subject to brute attacks, consisting in tampering peripherals sensors or devices in order to tamper and fake the records. That fraudulent activity is difficult to monitor and mitigate, as the possible annual gains for the rogue companies are 10 time higher the most severe punishment through the foreseen fines. Something needs to change, by either increasing the punishments, or making the control of the drivers activity less exposed to attacks. This deliverable intends to study, design, anticipate and eventually propose a change in paradigm to closely monitor professional drivers future activities.	20/12/2019	Science-for-policy reports
328 - SPRINT JRC.E.3	4852 - SmartDT Smart Tachographs 2017-2018	Support to DG MOVE, in accordance with the relevant AA (MOVE/C1/2017-196 JRC Contract nr. 34406-2017 NFP), in the implementation of the new tachograph regulation 165/2014 following the adoption of the Implementing Acts in March 2016 (Reg. (EU) 799/2016) . In particular support to the timely implementation of the provisions in the new technical specifications of forthcoming smart tachographs. It also includes the continuation of JRC services to MS's, AETR Countries and Industry as Root Certification Authority and single EU Interoperability certification laboratory, and the specific efforts to prepare for the same services for the implementation of new smart tachographs, deployed in the field from 2019.	JRC.E.3 Antonio HERRERA ALCANTARA	1.8.d	MOVE	MOVE	Eddy LIEGEOIS	GROW	ACEA - European Automobile Manufacturers Association GSA - European GNSS Agency MS EU - Member states EU Tech Serv - Member States and their Technical Services/type approval authorities UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/07/2017 31/12/2018	CON-AA	485201	2018 AA Final Reporting	Report on the support and maintenance of the ERCA operations. This includes: • MS Policy review and audit monitoring • Root key maintenance operations • Key certification operations and distribution • Security management activities • Configuration Management • Support and Maintenance of the JRC DT web site • Digital Tachograph Help Desk • Testing: interoperability tests, interoperability certifications • Support and Monitoring of the field tests operations.	21/12/2018	JRC technical reports
												485202	2018 Technical Report for DG MOVE	2018 technical report for DG MOVE regarding the • Final edition of the new Protection Profiles according Common Criteria • Test keys / ERCA 2 infrastructure and new GEN 2 root keys / Keys ceremony • New JRC EC ERCA policy • Migration and co-existence of Gen 1 and Gen 2 in the field • Review of new MS security policies • New IOT specs and LAB (GNSS, DSRC, co-existence) • Continuation of ERCA/IOT services • Preparation to extended services for GEN2 tachographs (testing, certifications)	21/12/2018	JRC technical reports
328 - SPRINT JRC.E.3	4858 - eIWT 2017 Electronic Tools in support of Inland Waterways Transport	The present AA, follow-up of the eIWT AA, will provide technical and scientific support to to DG MOVE.B.3 for the preparation, implementation and follow up, of the Commission Directive 2016/0050 on the recognition of professional qualifications in inland navigation.	JRC.E.3 Fivos ANDRITSOS	1.8.d	MOVE	MOVE	Dimitrios THEOLOGITIS			02/01/2017 21/12/2018	CON-AA	485803	eIWT detailed functional specifications	Detailed functional specifications of the complete eIWT system	15/11/2018	JRC technical reports
328 - SPRINT JRC.E.3	6280 - SmartDT2019 Smart Tachograph Implementation 2019 and beyond	Support to DG MOVE, in accordance with the relevant AA (MOVE/C1/2017-196 JRC Contract nr. 34406-2017 NFP), in the implementation of the new tachograph regulation 165/2014 following the adoption of the Implementing Acts in March 2016 (Reg. (EU) 799/2016) . In particular support to the timely implementation of the provisions in the new technical specifications of forthcoming smart tachographs. It also includes the continuation of JRC services to MS's, AETR Countries and Industry as Root Certification Authority and single EU Interoperability certification laboratory, and the specific efforts to prepare for the same services for the implementation of new smart tachographs, deployed in the field from 2019.	JRC.E.3 Antonio HERRERA ALCANTARA	1.8.d	MOVE	MOVE	n/a	GROW	ACEA - European Automobile Manufacturers Association GSA - European GNSS Agency MS EU - Member states EU Tech Serv - Member States and their Technical Services/type approval authorities UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2019 15/12/2019	CON-AA	2019TRDG MOVE	2019 Technical Report for DG MOVE	2019 technical report for DG MOVE regarding the • Operation and co-existence ERCA / ERCA Gen 2 infrastructures • Implementation of the new JRC EC ERCA policy • on-going review of new MS security policies • Continuation of ERCA/IOT services for GEN1/GEN2 tachographs.	15/12/2019	JRC technical reports
328 - SPRINT JRC.E.3	6281 - EU CCMS Implementation of the EU C-ITS Credential Management System	This WPK is looking at the preparation of implementing acts using the ITS directive 2010/40/EU as legal framework, where the JRC will play a key role in the preparation of a new Security Certification Policy for C-ITS, and in the further implementation of that new EU infrastructure for C-ITS in Europe.	JRC.E.3 Gianmarco BALDINI	1.8.d	MOVE	MOVE	n/a	CNECT DIGIT	ACEA - European Automobile Manufacturers Association MS EU - Member states EU Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2018 31/12/2021	CON-AA	62811	Definition of the CPOC protocol	This deliverable describes the CPOC protocol between the root CAs of the trust model and the central elements. The format of the messages and the requirements for the network are described in this deliverable	31/12/2018	JRC contributions to standards
												62812	Certificate Store Design	Design of the storage system for the root CA certificates.	01/06/2018	JRC technical reports
												62813	Design of the web site to publish the European Certificate Trust List	Design of the JRC web site, which will be used to publish the European Certificate Trust List	01/09/2018	JRC technical reports
												62814	Design of the TLM secure server	Design of the TLM secure server, which is used to sign the European CTL	01/10/2018	JRC technical reports
328 - SPRINT JRC.E.3	6422 - DITILAB 2018 2 Digital Tachograph Interoperability Certification 2018	In the context of the JRC support to the "Digital Tachograph (DT) legislation", the JRC has been appointed as the single EU laboratory for Interoperability Certification (IC). IC is required for type approval of all new DT cards or Vehicle Units produced by the DT manufacturers and card personalisers. The JRC provides these industries with testing and certification services. As in 2018, the laboratory will start certifying Smart Tachographs according to the new regulation EU 799/2016 in addition to the current Digital Tachographs, the workload is expected to increase significantly compare to the previous years. This work package covers all TPWs for interoperability certifications up to 31/12/2018	JRC.E.3 Michel CHIARAMELLO	1.8.d	MOVE	n/a	n/a		ACEA - European Automobile Manufacturers Association MS EU - Member states EU UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2018 30/06/2019	CON-TW	642201	Preliminary annual report of activities (2018)	The preliminary annual report will summarize the activity of the laboratory during the year 2018. After each certification testing a certification report will be emitted. The annual report will do a synthesis of these activities and of the development of the laboratory. This report is a preliminary report, as not all measurements may be fully reported at that time and the relative products certified.	15/12/2018	JRC technical reports
												642202	Annual report 2018 of laboratory activities	The annual report will summarize the activity of the laboratory during the year 2018. After each certification testing a certification report will be emitted. The annual report will do a synthesis of these activities and of the development of the laboratory. This report is the consolidated version of the preliminary report, where not all measurements may be fully reported at that time and the relative products certified.	28/06/2019	JRC technical reports
	6437 - C2ARTxSociety	Connected and automated road transport is often analysed from a technological point of view only, implicitly or explicitly assuming that users will accept and adapt to the new systems. Users' acceptance and the development of new mobility paradigms due to the new technologies are instead key factors in shaping the evolution of the transport sector. In particular, the concept of mobility as a service (MAAS) can only be understood and analysed if users are explicitly taken into account in the analysis. Research on this new subject for the JRC will be carried out through desktop research.	JRC.C.4					CNECT	- TECHNION ISRAEL INSTITUTE OF TECHNOLOGY			1	Feasibility study of the C2ART Project	The report will assess the feasibility of the project in particular shedding light on the specific role the JRC can have in this context. A summary of the latest trends in the field of connected and automated vehicles development and deployment in different geographical and political contexts will be provided. In the report also the opportunity to establish collaborations with other research organizations and different Member States will be considered as well as any possible need in terms of infrastructure development.	28/02/2018	JRC technical reports

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7534 - C2ART JRC.C.4	New mobility paradigms and better traffic management in the presence of connectivity, coordination and automation	stakeholders' workshop and questionnaires / surveys. New mobility paradigms and new technologies promise to offer unprecedented opportunities for better traffic management. The cost of reliable traffic information is expected to dramatically drop, as the communication between vehicles and infrastructure can reduce investment needs in equipping roads with cameras and sensors. Traffic signs may be changed in real time and without physical intervention, just updating a central database where all information are stored and from which a vehicle can get what is needed for a safe navigation through the transport network. As postulated in the ART ER (WPK 4205 in the WP 2016-2017), traffic coordination can be established defining the optimal route and	JRC.C.4 MARIA CRISTINA GALASSI	1.8.d	MOVE	JRC	n/a	CLIMA CNECT GROW RTD	OF TECHNOLOGY EUCAR - European Council for Automotive R&D (EUCAR)	01/01/2018 31/12/2019	INS-UR	3	Users' choices in the presence of CAVs and implications for transport demand and traffic management	The report will analyze the impact of the new technologies on people's mobility preferences. Surveys, expert meetings and simulation activities will be used to understand the potential impacts on the transportation demand and therefore on road traffic. Alternative traffic management approaches will be explored and policy recommendations will be provided on how to deal with possible future scenarios.	31/12/2018	Science-for-policy reports
7534 - C2ART JRC.C.4	6442 - C2ART-Impact Assessing the impacts of a connected, coordinated and automated road transport system	The modelling platform developed under the ART exploratory research (WPK 4205 in the 2016-2017 WP) will be further extended and improved to better model users' preferences (especially in the presence of connected capabilities only) and the new mobility paradigms, and to explicitly model the data communication process. The platform can be then used to simulate the effect of specific traffic management schemes or failure on the communication system, or the way to manage the amount of data that will be produced and shared within the transport system. As in the case of the ART project, the Aimsun traffic simulation environment will be used. The required modifications to the traffic models and the necessary links with the other models (like in the case of the SHERPA model for pollutant concentrations) are carried out in collaboration with TSS, the company developing the software. As in the case of the ART ER, two case-studies are used in the assessment: a freeway-scenario (the Antwerp ring-road) and an urban scenario (part of Haifa city in Israel). Using the modelling platform it will be possible to assess the potential impacts of different levels of	JRC.C.4 BIAGIO CIUFFO	1.8.d	MOVE	JRC	n/a	CLIMA CNECT GROW RTD	- TECHNION ISRAEL INSTITUTE OF TECHNOLOGY EUCAR - European Council for Automotive R&D (EUCAR)	01/01/2018 31/12/2019	INS-UR	1	Assessing the impacts of connected and automated mobility	The report will summarize the main outcomes of the activities carried out to assess the impact of connected and automated mobility on society, environment and economy.	30/06/2019	Science-for-policy reports
												3	JRC-Ispira as real-life demonstrator for connected and automated vehicles: Feasibility study	The study will outline the main characteristics and devices that the JRC Ispira site will need to develop in order to become one of the European test sites for real-life demonstration of vehicle connectivity and automation technologies	31/12/2018	Science-for-policy reports
7534 - C2ART JRC.C.4	7304 - RideChain Blockchain Technology for Innovative and Efficient Transport Services	This work package (RideChain) aims to investigate the feasibility of an integrated, decentralized, transparent and secure transport-service pricing and service-allocation platform. The system will use high accuracy transparent pricing models and blockchain-technology-based smart-contracts to enhance security and trust. The platform will focus on passenger-sharing and low-volume-transport-service applications, while special attention will be given to the platform compatibility with the particularities of autonomous vehicles technology. The feasibility study will be conducted to get a clear picture of the viability of the concept. Relevance with current JRC activities that could yield added value lay on two main axes. (a.) a methodology allowing the development of car-sharing and passenger-pooling schemes -an option that increases EC's work exposure to the public and b) support EC's transport decarbonisation policies and autonomous mobility projects including a token-based approach that could serve as a precursor to the application of carbon market in road transport.	JRC.C.4 GEORGIOS FONTARAS	1.8.d	MOVE	JRC	n/a	CLIMA GROW		21/02/2018 20/02/2019	INS-PC	RideChain73 04	RideChain Final Report	The final report will describe the work carried out, its scientific value, the business model for a possible market exploitation of the application, the validity of the concept and a description of possible synergies with other relevant activities.	20/02/2019	JRC technical reports
1.8.e safety and security - develop tools and databases on EU-wide multimodal accidents and incidents (including a specific database for alternative fuels incidents), and data visualisation and exploration tools for transport safety analysis, including for aviation safety; and carry out performance testing and analysis of aviation security technologies.																
194 - TDSS JRC.E.5	618 - AVSEC Transport Security	This work package focus on the detection of bulk threats, mainly for aviation security. Since 2002, the Commission has established common rules in the field of civil aviation security aimed at protecting persons and goods from unlawful interference with civil aircraft, which includes technical requirements for security screening equipment. Additionally, the Commission has proposed a Regulation to establish an EU certification scheme for aviation security equipment, in line with the EU approach to single market and conformity assessment. JRC will contribute to the implementation of technical elements in the 'Rolling programme for cooperation in aviation security' between DG MOVE and the European Civil Aviation Conference (ECAC), as well as in the 'Aviation Security Technology Roadmap', with a strong focus on aspects of measurement quality and performance testing of equipment, including explosives detection systems, explosives trace detection, liquid explosives detection systems and security scanners. JRC will support the development and adoption of harmonised test methods and test materials, for both laboratory and field testing of screening equipment.	JRC.E.5 David ANDERSON	1.8.e	MOVE	JRC	STROHSCHNEIDER Michaela (MOVE.A2), WILLMOTT Graham (HOME.B4)	HOME	ECAC - European Civil Aviation Conference MS Border Sec - MS Border and other Security Authorities Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2016 31/12/2019	INS-RS	3	Recommendations for Harmonised Routine Testing of Aviation Security Equipment	EU legislation states that there 'shall be routine testing' of aviation security equipment (once it has been deployed). Currently there are no harmonised approaches or methods for routine testing. The extent to which routine testing is performed across the EU Member States, if at all, is unknown. JRC, in cooperation with ECAC, will develop guidelines and promote a harmonised interpretation of 'routine testing', addressing issues of detection and/or diagnostic test pieces, statistics, etc.	31/12/2018	JRC technical reports
												4	Potential application of aviation screening technology to other transport modes and soft targets	Research the application of aviation screening and detection technologies and methodologies to other modes of transport, protection of buildings and soft targets, potentially with technical coordination of trials of promising new technologies.	31/12/2018	JRC technical reports
4973 - BOSS JRC.E.5	4949 - ECCAIRS 19 European Coordination Centre for Accident and Incident Reporting Systems 19	This work-package makes sure that during 2018 aviation accident and incident information continues to be collected from, and disseminated to, the European Aviation Safety Agency and the Member States as requested by Regulation 376/2014 and Regulation 996/2010. An estimate of between 150.000 and 200.000 incident and accident reports per year, originating from the 31 involved States, are integrated in the European Central Repository for occurrences. In addition, more than 500 Safety Recommendations per year, originating from the European Safety Investigation Authorities, are stored in the European Central Repository for Safety recommendations. The third service provided in this context is the European Aviation Reporting Portal, enabling small organisations and individuals to report aviation safety related events electronically to their respective national authorities. Finally the collaborative ECCAIRS web-portal, with a growing number of over 800 users from more than 500 aviation related organisations worldwide, offers the community coordination services. All these four services will need to remain operational.	JRC.E.5 Marco OOMS	1.8.e	MOVE	MOVE	Delphine Micheaux-Naudet; Olivier Ferrante	Avi Acc Invest EU - EU Aviation Accident Investigation Bureau's Civ Avi Aut EU - EU Civil Aviation Authorities EASA - European Aviation Safety Agency (EASA) ICAO - International Civil Aviation Organization (ICAO)	01/01/2018 31/12/2018	CON-AA	1	Operational services	The operation of four aviation safety related services for DG MOVE during 2018. The services are: the European Central Repository for occurrences (ECR-ECCAIRS), the European Central Repository for Safety Recommendations (ECR-SRIS), The European Aviation Safety Reporting Portal (WWW.AVIATIONREPORTING.EU) and the ECCAIRS collaborative portal (eccairsportal.jrc.ec.europa.eu).	30/12/2018	Scientific information systems and databases	
4973 - BOSS JRC.E.5	6240 - ECCAIRS 20 European Coordination Centre for Accident and Incident Reporting Systems 20	This work-package ensures that during 2019 the four services provided by the JRC in the context of Regulation 376/2014 and Regulation 996/2010 (ECR-ECCAIRS, ECR-SRIS, WWW.AVIATIONREPORTING.EU and the ECCAIRS Community Portal) will remain operational. In the first half of 2019 the preparation for transferring these operational services to the European Aviation Safety Agency (EASA) will be finalised. The actual transfer to EASA, and after that stopping of these services in the JRC will take place during the 2nd half of 2019. This Work Package will ensure operational continuity during 2019 and a controlled closure of these services at the end of the year.	JRC.E.5 Franco OLIVERI	1.8.e	MOVE	MOVE	n/a	EASA - European Aviation Safety Agency (EASA) ICAO - International Civil Aviation Organization (ICAO)	31/12/2018 31/12/2019	CON-AA	1	Operational services	The operation of four aviation safety related services for DG MOVE during 2018 and 2019. The services are: the European Central Repository for occurrences (ECR-ECCAIRS), the European Central Repository for Safety Recommendations (ECR-SRIS), The European Aviation Safety Reporting Portal (WWW.AVIATIONREPORTING.EU) and the ECCAIRS collaborative portal (eccairsportal.jrc.ec.europa.eu).	31/12/2019	Scientific information systems and databases	
											2	Transfer of services outside JRC	The agreed set of operational services are successfully transferred, likely to the European Aviation Safety Agency. For each service, the operational environment, the datasets involved, the technical documentation and the specific expert knowledge will be prepared and handed over. In addition, this deliverable comprises starting up the services at the new premises, running the services in parallel for an agreed period and stopping the services in the JRC.	31/12/2019	Datasets	
4973 - BOSS JRC.E.5	6241 - EMCIP 4 European Marine Casualty Information Platform - Support to EMSA nr. 4	This project implements the operational services related to the European Marine Casualty Information Platform (EMCIP) system as requested by the European Maritime Safety Agency (EMSA) in the context of Directive 2009/18/EC on the investigation of accidents in the maritime transport sector. The EMCIP Reporting system provides the means to store and disseminate data and information related to marine casualties and occupational accidents. In addition the EMCIP community portal provides additional co-operative services.	JRC.E.5 Marco OOMS	1.8.e	MOVE	MOVE	n/a	EMSA - European Maritime Safety Agency	01/01/2018 31/12/2018	CON-TW	1	Operational EMCIP services	The operation of two maritime safety related services for EMSA during 2018. The services are: the European Marine Casualty Information Platform(EMCIP) and the EMCIP collaborative portal (emcipportal.jrc.ec.europa.eu).	31/12/2018	Scientific information systems and databases	
											2	EMCIP data for EMSA	The EMCIP dataset is the data contained in the current EMCIP repository. This data is to be transferred to the European Maritime Safety Agency at the moment the EMSA version of EMCIP is finalised. This milestone is expected to be reached somewhere between the middle and the end of 2018.	31/12/2018	Datasets	
1.9. Employment, social affairs, skills and labour mobility																
1.9.a monitoring and evaluation of employment and social policy - provide high-quality monitoring, benchmarking, impact assessment and evaluation support for employment and social-policy-related measures, notably through three competence centres referred to in Section 10.1.																
4820 - CAPMAU JRC.B.1	6343 - JCOBST Financial bottlenecks and job creation	The aim of this project is to address a specific request from DG EMPL E1 to JRC B1 for a study to identify and analyse the characteristics of the non-financial firms that most contribute to job creation in Europe, especially the drivers related to firms' financial needs/constraints and business environment, and highlight potential differences in job creation dynamics between Member States, sectors, and over time.	JRC.B.1 Michela NARDO	1.9.a	EMPL	EMPL	n/a			02/10/2017 30/09/2018	CON-AA	1	Report on Micro-Level Analysis of Job Creations and Associated Obstacles.	The report will provide research results on the characteristics of the job creators, but also on the importance of the determinants such as the economic/business environment, ownership features, and financial characteristics.	30/09/2018	Science-for-policy reports
603 - CC-ME JRC.I.1	6464 - CC-ME.EMPL-CRIE V CC-ME CRIE	The Centre for Research on Impact Evaluation (CRIE), as part of the Competence Centre on Microeconomic Evaluation (CC-ME), supports capacity building in counterfactual impact evaluation and provides scientific expertise and methodological support to the Commission and Member States for the evaluation of impact of the ESF funded interventions.	JRC.I.1 GIULIA SANTANGELO	1.9.a	EMPL	EMPL	n/a			01/01/2018 31/12/2018	CON-AA	2018001	2018 Data Fitness Initiative for CIE	The initiative will invite ESF Managing Authorities (MAs) to provide CRIE with the data that are needed for carrying out a CIE of a specific ESF funded intervention or to push the selected plan for data collection/linkage. CRIE will select the most suitable applicants in order to: -accompany 'data-ready' MA with CIE; -accompany the 2017 'data-future' MA which have eventually become 'ready' with CIE; -accompany other good prospective applicants in getting 'data-ready'; -present the final results.	31/12/2018	Science-for-policy reports
												2018002	Community of Practice on CIE (CIE-CoP)	In 2018, CRIE will, in collaboration with DG EMPL: - organize meetings of the CIE-CoP back to back to with training sessions; - provide a customised support on CIE methodology for the CIE-CoP.	31/12/2018	Training
												2018003	Guidance	Since some updates are needed for the EMPL Guidance "Design and Commissioning of Counterfactual Impact Evaluation" both in terms of methodology and in terms of practical examples, in 2018 CRIE will deliver: -a short document presenting some updates in the most advanced CIE methods which are not discussed in the guidance; -a checklist covering the topic "How to use administrative data in ESF evaluation"; -a document collecting practical examples of ESF evaluations for non-expert audience.	31/12/2018	JRC technical reports
												2018004	Support to Future Human Capital Fund	In December 2017 DG EMPL launched a Terms of Reference on the "Pilot and feasibility study on the sustainability and effectiveness of results for ESF participants using CIEs". The pilot exercise will be limited to maximum eight Member States. CRIE will attend the four planned steering committee meetings and provide comments on the three reports (Inception, Interim and Final) provided by the selected contractors. If a need arises, CRIE will work on the follow-up of the ESF Impact Study.	31/12/2018	JRC technical reports
1.9.b European pillar of social rights - help to establish the core principles of the pillar by analysing what makes a society fair.																

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7761 - ANTICIPATE JRC.I.2	5160 - FOR-WORK Future of work	The future of employment in the EU is subject to many influencing factors, among them demographic developments and technology applications such as digitalisation and automation, but also possible longer-term, large scale economic developments such as the move towards a circular economy and implications of future resource scarcity. Given the fundamental role of work for society, the question of how the future of work could look like and how we shape it the way we want, is on top of the political agendas in Europe.	JRC.I.2 ANNE-KATRIN BOCK	1.9.b	EMPL	JRC	JAN PAKULSKI			01/11/2017 31/12/2018	INS-RS	1	The future of work - Trends and implications	The report will include the results if this WP, in particular the trend analysis and its implications for EU employment policy.	31/12/2018	Science-for-policy reports
5090 - Employment & Skills JRC.B.4	6401 - ResB4 The role of educational institution in fostering inclusion and resilience in the EU	The current socio-economic model of Europe is faced with a number of challenges. The fear that not only low-skilled but increasingly also middle-skilled jobs are at risk to be lost is prevalent among policy circles. In addition, some people associate an increased migration flow with less jobs and less resources to be available for "nationals". Despite the fact that scientific literature does not support these views in the aggregate, we cannot neglect that such changes do influence some individuals who develop anti-EU sentiments. Historically societal resilience to such challenges have been overcome by the ability to foster innovation, employment and growth, on one side, and on the performance of a national social welfare state, on the other. The latter is rooted in a social acquis that has grown over time. New initiatives are needed to boost the capacity to generate wealth in the EU and to distribute it in a fair way. The Unit B.4 will contribute to the debate on improving the socio-economic resilience of the EU by actively participating to the Resilience4EU project (7596 in JPB) in all 3 work packages DIGRES (6433) on digital transformation, MIGRES (6431) on migration, and the Community of practice (ResilCoP - 6434). In particular, in DIGRES is contributing to the deliverable "Digitalization, job restructuring and job	JRC.B.4 FEDERICO BIAGI	1.9.b	EMPL	JRC	n/a	EAC ECFIN EMPL		01/01/2018 31/12/2019	INS-RS	4	The role of educational institution in fostering inclusion and resilience in the EU	Education systems plays an important role in shaping the economic and social well-being of the members of the community. The deliverable will describe the role of education in the process of fostering more inclusion societies for the future that are also resilient to (external) economic shock. (i.e. de-industrialization vs. reindustrialization, industry 4.0 vs. servitization, offshoring, digitalization), to immigration challenges and the need for upskilling and re-skilling of the population.	31/05/2018	Science-for-policy reports
												8	Exploring impacts of social innovation ecosystems on resilience through assessing dimensions of change and network effects of individuals and local communities	Building resilience involves strengthening cultures of innovation. We need innovative solutions that permit our society to learn, adapt, and occasionally transform without collapsing given any type of shocks. Given the expertise of the Unit B.4 in the field of social innovation, this deliverable intends to produce the following results: a) a literature review of 'social innovation and resilience'; b) a new conceptual and analytical framework to be used in order to refine and further exploit the IESI database; c) in-depth case studies on social innovation initiatives fostering resilience at micro and meso-level; d) a cross-case analysis on social innovation initiatives fostering resilience at micro and meso-level; e) setting up an online experiment to explore the behaviour and attitudes of individuals on a specific topic related to social innovation and resilience.	18/12/2019	Science-for-policy reports
1.9.c future of skills and work - analyse how skills are distributed and evolve and their links with employment potential, the changing nature of work and welfare systems, and new forms of employment, social innovation and the collaborative economy (see also key orientation 4.2.a).																
5090 - Employment & Skills JRC.B.4	3281 - COFRADEM Competence Frameworks and Digital Platforms for Employment	Project 5090 (Employment&Skills) covers research on skills, employment and employability in close collaboration with EMPL, supporting the new European Skills Agenda initiatives (COM 7 June 2016). WPK 3281 will focus on studying the emerging collaborative economy and the further take-up and implementation of the competence frameworks developed by the JRC. The COFRADEM project covers two major studies during a period of a maximum of eighteen (18) months: A Collaborative economy and employment (COLLEEM) consisting of a (1) Mapping of digital labour platforms in order to provide an up-to-date overview of existing digital labour platforms active in the collaborative economy and (2) a survey in up to 10 EU countries (1,000 responses per country) asking EU citizens about their motivations, background and the type of work they carry out on digital labour market platforms and under which conditions.	JRC.B.4 Yves PUNIE	1.9.c	EMPL	EMPL	SONIA PERESSINI	CNECT EAC GROW		02/01/2017 02/07/2018	CON-AA	4	Guidelines for use of DigComp by stakeholders	The report will provide guidelines for use of DigComp by stakeholders. The guidelines should describe the nature of digital competence and the purpose of the competence framework, and through examples of best practice and practical guidelines, guide use of the competence framework by potential users.	31/01/2018	JRC technical reports
												5	Guidelines for use of EntreComp	EntreComp is the entrepreneurship competence framework developed by JRC on behalf of DG EMPL. This report will provide guidelines for use of the framework by stakeholders.	31/01/2018	JRC technical reports
												7	Results from survey on digital labour platforms	Results from a survey on digital labour platforms reporting in the number of service-providers, their working conditions, their profiles, their motivation, their source(s) of income, the remuneration they receive from the platform work, the number of platforms they are active in and portability of ratings/track record. The survey will cover 10 EU countries.	02/07/2018	Science-for-policy reports
153 - DT JRC.B.6	5092 - Changing Nature Work Changing Nature of Work	The impact of the Digital Transformation (DT) has been widely acknowledged and studied in the last decade. While DT is recognised as an essential driver of growth, there is no consensus as to the distribution of productivity gains nor the size of the impact on employment. New forms of work organisation and tasks distribution across the workforce emerge, but job creation following the technological progress is not expected to be enough to off-set the initial job destruction due to new labour-saving technology, giving rise to a routinisation hypothesis and its polarisation effects. Moreover, as a result of the Industry 4.0 initiatives the total effects of robotisation widespread adoption would need to be estimated. JRC/B4 will contribute to the JRC-wide DT project, through focusing on the impacts on Employment and skills. The project 5090 (Employment&Skills) researches the area of skills and their relation to employment and employability with emphasis on inequalities and labour market challenges.	JRC.B.4 FEDERICO BIAGI	1.9.c	EMPL	JRC	Ralf Jacob (EMPL/A4)	CNECT EAC GROW		01/01/2017 31/12/2019	INS-RS	1	Employment Implications of Digital Transformation: Routinization, job polarization and robotisation in Europe	This deliverable will develop evidence on how digitalization affects the task composition and hence the demand for labour, with a focus on its impacts on employment (including employment transitions of individual workers) and wages. It also discusses the implication for skills (including mismatches) and hence for education and training policies. It will also produce evidence on how robotisation affects the labour market in the EU; an estimate of the impact of robotisation on labour productivity, hours worked, employment and total productivity gains.	17/12/2018	Science-for-policy reports
												3	Job quality in the digital age	This deliverable will describe the job quality implications of the digital transformation, with a focus on Collaborative Economy workers (i.e. workers that provide services through labour platforms); it will analyse the conditions of work of such workers and will provide policy recommendation for improving their working conditions.	03/06/2019	Science-for-policy reports
5090 - Employment & Skills JRC.B.4	6400 - LABOURCOMP LABOURCOMP	This WPK, in partnership with DG EMPL, consists of further research on the implementation of the two competence frameworks JRC B4 has been developing on behalf of DG EMPL E2 (skills and qualifications unit): the Digital Competence framework for citizens (DigComp) and the Entrepreneurship Competence framework (EntreComp). Both frameworks are being used widely in the MS and beyond. This WPK follows the existing AA Cofradem (WPK 3281) which will run until June 2018. Thus the work is foreseen to continue on developing (1) a self-assessment for both frameworks, (2) user guidelines and (3) a governance model for the frameworks. More research to support further implementation of the frameworks in the MS, and thus contribute to the follow-up of the 2016 Skill Communication, tackling skills mismatches in Europe will be structured around 2 tasks: Task 1: Further development of DigComp self-assessment and analysis of its take-up and use. As a	JRC.B.4 Yves PUNIE	1.9.c	EMPL	EMPL	n/a	EAC		01/01/2018 31/12/2019	CON-AA	1	Use and impact of the DigComp framework and its self-assessment.	As a result of the wide take-up of the DigComp framework, including its self-assessment, this report will collect and analyse evidence of its impact and use for employment purposes.	10/06/2019	Science-for-policy reports
												2	Use and impact of the EntreComp framework and its self-assessment.	As a result of the increasing take-up of the EntreComp framework, including its self-assessment, this report will collect and analyse evidence of its impact and use for employment and education purposes.	27/05/2019	Science-for-policy reports
5090 - Employment & Skills JRC.B.4	6402 - FairbyB4 Equality of opportunity and social mobility challenges and possible solutions through Education and Employment policies	This WPK will carry out research in the context of fairness/inequality in following two areas: (i) assessing the role of education in amplifying or mitigating pre-existing socio-economic policies, i.e. as a driver/barrier to equality of opportunity and social mobility. In particular, the JRC, in partnership with DG EAC will investigate: Early schooling and the achievement gap in education; Reducing the gap in student performance (test scores); How to improve equality of opportunity in education along the life cycle; and (ii) studying drivers and possible policy responses to labour market inequality. In partnership with DG EMPL, the JRC will investigate the following tasks: the role of Vocational education and training and Work Based Learning, as tools to increase employability and up/reskilling of (mainly) low skilled workers hence reducing inequality in the labour market; In addition, this wpk will contribute to the planning and organization of activities in the realm of JRC Fairness (WKP 6365) / CoP on Fairness	JRC.B.4 FEDERICO BIAGI	1.9.c	EMPL	JRC	n/a	EAC ECFIN EMPL		01/01/2018 31/12/2019	INS-RS	1	Equality of Opportunity: Theory, measurement and policy relevance.	The project reviews the different approaches to the concept of equality of opportunity and its measurement. It then develops empirical analysis and policy implications in the area of education (from early childhood to tertiary education) and social policy (with special focus on the European Pillar of Social Rights). The report also discusses the concept of Social Mobility and its relationship with Equality of Opportunity.	31/01/2018	Science-for-policy reports
												2	Social mobility and the role of tertiary education	The current increase in income inequality has raised the concern that children from poor/disadvantaged families face greater difficulties to get to university. We will look at social mobility by educational achievement and see how different levels of education are contributing to social mobility. In other words we aim at analysing whether, conditional on tertiary education, we observe high or low social mobility; if we find high social mobility conditional on tertiary education but low social mobility, overall it means that the problem is that people from lower income household do not complete tertiary education; on the other hand, if we find that conditionally on tertiary educational attainment, social mobility is low, it means that either the tertiary education or the labour market or the transition from the first to the second one are not functioning properly.	30/04/2019	Science-for-policy reports
												3	How to improve equality of opportunity in education along the life cycle	This research aims to better understand the factors that guarantee disadvantaged people to be able to succeed in life. Specific objectives will include a thorough revision and discussion of the policies in place, and analysis of main results from large dataset and experiments. Further, empirical work should investigate the characteristics of high-achieving students/learners from poor backgrounds (a.k.a. resilient) trying to drive conclusion as to how this pattern could be maintained throughout time (via educational policies) so as to encourage them to pursue further education and better socio-economic outcomes in their future life.	31/03/2019	Science-for-policy reports
7512 - FAIRNESS JRC.I.1	6435 - Fairness_GVC Global value chains and economic inequality	The debate on economic inequality has become one of the most pertinent political issues of our time, and has also triggered a large amount of new empirical and theoretical research. Against this backdrop, this work package addresses a specific empirical question related to the impact of globalization on economic inequality: did the emergence of global value chains contribute to increased wage inequality? Moreover, who and where are the winners and losers? To tackle this question, the recently published research on this topic will be systematically scanned and synthesized. Following this, an empirical verification will be carried out, for which JRC can build on its expertise and data on global value chains, namely the World Input Output Data (WIOD) base and results derived from it. More specifically, it is envisaged to match this data on global value chains with data on labour skills, task characteristics and wages, which can be drawn from the WIOD Socio-Economic Accounts (WIOD-SEA) and Labour Force Survey (LFS) data. Ideally, the period of 2000 to 2014 could be covered by this combined dataset. This would allow using a shift-share analysis to identify the contribution of different factors to the observed changes in the wage structure and distribution.	JRC.B.5 Peter EDER	1.9.c	JRC	JRC	n/a	EAC ECFIN EMPL GROW SG TRADE		01/01/2018 31/12/2019	INS-UR	1	The emergence of global value chains and economic inequality	Report analysing the impact of global value chains on economic inequality, in particular wage inequality.	31/12/2019	Science-for-policy reports
603 - CC-ME JRC.I.1	6469 - CC-ME.NZ CC-ME NZ	The purpose of this WP is to perform pilot collaborations with New Zealand on the evaluation of the impacts of education on health and criminal behavior, using data from the New Zealand's Integrated Data Infrastructure (IDI) database	JRC.I.1 MASSIMILIANO BRATTI	1.9.c	JRC	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	The effect of education on crime behavior	The aim of this project is to assess whether education may have an impact on individuals' future justice behaviors. In particular, we will evaluate the "Positive behavior for learning (PB4L)" program, implemented since 2009 in New Zealand schools. PB4L supports schools to build an inclusive learning environment and to create more positive schools and home environments which should deter bullying and other negative behaviors, with the aim of fostering students' well-being and improve their chances to succeed in schools and later on in life. We will estimate the effect of being part of a school adopting the PB4L program on students' future criminal behavior. The project will combine Integrated Data Infrastructure (IDI) data coming from the Education and the Justice Ministries' databases.	31/12/2018	JRC technical reports
												2	The effects of involuntary job loss on adult and child outcomes	The impacts of involuntary job loss on the employment, earnings, and benefit receipt of New Zealanders have been examined in three previous studies (Dixon and Stillman, 2009; Dixon and Mare, 2013; Hyslop and Townsend, 2017). The objective of this project is to examine the impacts on a wider set of outcomes, including health of both the displaced workers and for other members of their families and their children's educational outcomes. The project will use data from the Integrated Data Infrastructure (IDI), among which Population Census, Ministry of Education, Ministry of Health, Ministry of Labor and tax records data.	31/12/2018	JRC technical reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												3	The effect of the 2011 Christchurch earthquake on school and health outcomes	The aim of this project is to look at the impact of the 2011 Christchurch earthquake on school and health outcomes of residents in the Canterbury area. The earthquake led to the destruction of many schools causing delays in school resumption. A "site-sharing policy" was implemented inviting the schools who were not hit by the earthquake to host students from the damaged schools. We will use data from the Integrated Data Infrastructure (IDI), Ministry of Education and Ministry of Health to evaluate the impact of these events on students' school and health outcomes.	31/12/2018	JRC technical reports
2. A connected digital single market																
2.1. Digital economy and society																
2.1.a impact of digital technology and transformation on society - assess the impact of digital technology, of collaborative and platform economy, and related economic models on growth, jobs and consumer welfare in the EU; measure the economic impact of policy initiatives in the European Data Economy, notably Free Flow of Data; investigate digitally-enabled innovation and entrepreneurship; analyse the uptake of artificial intelligence and the deployment																
153 - DT JRC.B.6	2044 - PREDICT-3 Prospective Insights in ICT R&D phase 3	PREDICT is a long-lasting collaborative project between DG CNECT and the JRC to provide an analysis of the EU ICT sector and its R&D investments. Its main output, the PREDICT dataset reflected in its accompanying analytical reports, is a permanent monitoring tool of ICT sector and ICT sector R&D macro-economic data, since 2006, assessing the impact of related policies, from the Lisbon Agenda and EU2020, to the Digital Agenda Chp 5, to ICT supply side and R&D policies in the European Semester (EDPR) and more generally in the DSM. It is progressively shifting from accounting only for ICT as a sector to measuring embedded ICT across the economy, thus proxying digital transformation effects.	JRC.B.6 GIUDITTA DE PRATO	2.1.a	CNECT	CNECT	Christophe Doin, Connect F.4	ESTAT RTD	OECD - Organisation for Economic Co-operation and Development (OECD)	01/03/2016 28/02/2019	CON-AA	5	PREDICT Key Facts 2017	Yearly set of graphs on Key facts on ICT R&D and ICT Industry	31/05/2018	Science-for-policy reports
												6	PREDICT Key Facts report 2018	Yearly set of graphs on Key facts on ICT R&D and ICT Industry	28/02/2019	Science-for-policy reports
153 - DT JRC.B.6	3285 - RISES Research on Innovation, Startup Europe and Standardisation – RISES	The project will provide support to the policies of CONNECT in three areas: •Innovation with the focus on the role of public funding in financing R&D, innovation and entrepreneurship, notably building on the Innovation Radar (IR) under H2020; •Start-ups and scale-ups – providing support to Start-up Europe; and •Standardisation and IPR policy aims under the Digital Single Market priorities. Innovation - building on the IR The European Commission's Framework Programme (FP) constitutes an important share in R&D expenditures in Europe. According to the Innovation Radar, a number of FP projects produce innovations that are ready to reach the market. However, further nurturing is needed to exploit their potential. JRC will further work on strengthening the following pillars of the IR as a tool for evidence-based policy making: •Providing intelligence on innovation activity in FP projects, •Bridging between innovators in FP projects and investors, •Providing feedback on the design of the collaborative research projects. Start-ups and scale-ups – providing support to Start-up Europe Digitally-enabled start-ups are the main vehicles through which digital technology is converted into economic and social benefits. These firms are also more likely to become high-growth companies, i.e. scale-ups. Given their peculiar characteristics, digitally-enabled firms respond differently to the conditions of entrepreneurship ecosystems than firms in traditional and low-tech activity. Against this	JRC.B.6 DANIEL NEPELSKI	2.1.a	CNECT	CNECT	Peteris ZILGALVIS	GROW RTD		02/01/2017 31/12/2019	CON-AA	2	Second project report	This second project report on digital innovation and entrepreneurship in Europe will address in particular: (a) The role and impact of ICT standardisation & IPRs with a focus on FRAND and Open Source and Blockchain and standardisation; (b) Enriching of the Innovation Radar data by merging with other data sources and developing approaches to extract new and meaningful insights from the Innovation Radar data sets; (c) Updating the indices on framework conditions for firm creation and growth and exploitation and enriching of Start-up Europe ecosystem data. Note: Exact contents of this project deliverable is to be agreed with DG CNECT during the regular coordination meetings.	31/12/2018	Science-for-policy reports
												3	Third project report	This third project report on digital innovation and entrepreneurship in Europe will address in particular: (a) The role and impact of ICT standardisation & IPRs (b) The role and impact of public funding in financing digital innovation (c) Framework conditions for high growth innovative digital companies in the EU ecosystem and geographic mapping of scaleups in the EU. Note: Exact contents of this project deliverable is to be agreed with DG CNECT during the regular coordination meetings.	31/12/2019	Science-for-policy reports
153 - DT JRC.B.6	3286 - EDMS+ Economics of the Digital Single Market (II)	This work package provides economic analysis for the implementation of the Commission's commitment under the DSM agenda to do a comprehensive assessment of online platforms, possibly leading to a policy initiative to improve the regulatory environment. It will start with a comprehensive review of the existing research literature on the economics of online platforms, with a view to extract findings that document the social welfare impact of platforms and possible market distortions that might require regulatory intervention. It will identify gaps in existing research with regard to the public policy and regulatory aspects of platforms. Additionally, the WPK will examine the economic impact of (big) data collection & analytics and EU data ownership and access regulation, or proposed changes in that regulation. Finally, as part of the DSM agenda the WPK covers studies on cross-border geo-blocking in online services and digital media content, in particular audio-visual media content. Empirical analysis on a number of case studies will be carried out in the later stages of the programme.	JRC.B.6 NESTOR DUCH BROWN	2.1.a	CNECT	CNECT	Martin Ulbrich	COMP EAC GROW JUST		01/01/2016 31/12/2018	CON-AA	15	Impact platform data analytics on content provider	Title: The impact of platform data analytics on content providers and their business models. Description: This study will focus on car transport and the impact of digital car controls, driving and traffic control on the distribution of value-added between car manufacturers and digital car services Note: this study will be done in collaboration with JRC/C4 and constitutes a contribution to WPK 6442 (C2ART-IMPACT).	31/03/2018	Science-for-policy reports
												16	Empirical evidence on the impact of data analytics	Title: Empirical evidence on the impact of data analytics in platforms on consumer welfare. Description: Data analytics in online consumer platforms may affect consumer decisions and welfare, through privacy, pricing and the variety of goods consumed online. This study will present a literature review on this subject.	30/06/2018	Science-for-policy reports
												17	Overall economic impact data analytics in online	Title: the overall economic impact of data analytics in online platforms. Description: This report will provide a comprehensive overview and synthesis of the platform studies carried out under this research programme.	31/12/2018	Science-for-policy reports
153 - DT JRC.B.6	3786 - D-Gov Digital Government	Digital government optimises, transforms and creates public services maximising the value of its information assets, increasing its internal efficiency, and providing those digital services to business and citizens in open, transparent and efficient ways. This WP will look at the impacts of digital transformation on the governmental sector and how it relates to society and the private sector, analysing the evolving role of public administrations from the provision of digital services towards mediating and regulating their provision by third parties. Over 4 years, it will continue to coordinate and execute the ELISE Action (European location Interoperability Solutions for E-government) of the ISA ² Programme (Action 4.1, 2016-2021). It will address specific actions of the eGovernment Action Plan COM (2016) 179 promoting the once only principle (OOP, no. 18), and implementing the INSPIRE Directive (no. 19), and of the European Interoperability Framework COM (2017) 134, related to assessing and monitoring cross border interoperability (no. 20). In particular, the WPK will develop and test EU-wide, cross-sector interoperability frameworks and solutions for the sharing of location data and services, focusing on digital, cross-border and interoperability by default principles, as well as promoting openness, transparency and the OOP. Building on existing resources (eGov benchmarking, Digital Economy and Society Index, ISA national interoperability observatories, etc.), the WP will analyse transformations occurring in governments thanks to the availability of location interoperability data and services, by using best practices, cases studies and pilots in various domains, thus testing concepts, demonstrating feasibility and exploring the benefits of interoperable approaches towards operational solutions addressing citizens' needs. Results from this work will feed into the ELISE "geospatial knowledge base service" for ISA ² and Commission services. The WPK will propose recommendations on the policy interventions and practical guidelines and reference to best practices that could "modernise public administration, achieve cross-border interoperability and facilitate easy interaction with citizens", as set out in the Digital Single Market strategic objectives. This WP contributes to the framework defined in the Digital Transformations project (6457), and is linked to WPK 6455 "From open government to value-added data-driven services", and to the INSPIRE project no.484	JRC.B.6 Francesco PIGNATELLI	2.1.a	CNECT	JRC	Margarida ABECASIS	CNECT DIGIT	CC EU - Candidate Countries EU MS EU - Member states EU	01/01/2018 31/12/2021	INS-RS	201801	EU State of play of digital transformation in government	This deliverable will provide the EU State of play of digital transformation in government as a contribution to the overall assessment of Digital Transformation in Europe (report to be delivered by the Digital Transformation project). In particular, this deliverable will conduct an analysis of real examples of public administrations in Member States engaged in digital transformation (recent or in-progress) with an aim to identify patterns correlated to their cultural, historical, social, political, geographical and digital capabilities context for specific countries and/or regions. It will address the dimensions of interoperability, data access, service integration and orchestration, business processes innovation and access to innovative technologies.	14/12/2018	JRC technical reports
												201901	ELISE Common data services for Digital Government	This deliverable will involve the outcome of the first series of developments of the EU Gazetteer foreseen in the ELISE Action, following the feasibility study 201703, including delivery of prototype services and early adopter feedback. This deliverable will also involve a feasibility study for a second common data service such as an EU open mapping service, including barriers and benefits arising from open data sources. Part of the deliverable will also look at the concrete impacts that the availability of such EU service could bring to the Public Administrations, in terms of digital transformations.	30/11/2019	JRC technical reports
												202001	Testing the digital transformation framework on new governmental services	Given the broader scope of the digital transformation framework being developed under WPK 6457, this deliverable will apply and test it in the context of digital government, in selected countries for selected topics, e.g. government-to-government interactions, innovative relations with citizens and businesses, new collaborative paradigms between public and private parties. Testing the framework means assessing if the introduction of new digital services and solutions in European PAs will have an influence on the level of their digital transformation. Use cases will be drawn from public services delivered in various domains, preferably in a cross-border setting, and will initially cover the emerging impacts within ELISE's timeframe.	15/12/2020	JRC technical reports
												202101	Digital transformation of government- from challenge to opportunity	This report will make a synthesis of the findings achieved through the WPK with reviews, landscape analysis and practical applications and services, and will present an understanding of the impacts of digital transformation on the role of government as a provider or regulator of digital services for businesses and citizens. The report will contain recommendations on policy interventions and practical guidelines and will make reference to best practices that might improve, facilitate or drive the existing evolving processes within governments, and between governments, citizens and businesses.	15/12/2021	Science-for-policy reports
6824 - CAS-3 JRC.A.5	5800 - HUMAINT Digital Transformation –Human behaviour and machine intelligence (HUMAINT)	The HUMAINT project aims to provide a multidisciplinary understanding of the state of the art and future evolution of machine intelligence and its potential impact on human behaviour, with a particular focus on cognitive capabilities and decision making. This project intends to analyse the cognitive balance between human and machine intelligence from three main research questions in mind: 1. Which are the main differences between human and machine intelligence? Here we will study cognitive capabilities of humans vs machines, trying to understand the overlap and complementarity of human appreciation and computer predictions, the strategies for evaluating human and artificial intelligence, and the cognitive capabilities that can be considered inherent to human beings. 2. What is the influence of algorithms into human behaviour? Here, we will study how algorithms affect our cognitive capabilities/(under)development in the short and long term when assisting in a given task (e.g. find our way in an unknown city) and how they influence our decisions and opinions. 3. To what extent changes in cognitive balance of machine-human intelligence may require changes in policy? The project will propose strategies for the evaluation of algorithms and human-algorithm interaction paradigms. We will particularly consider transparency and its influence on trust, as it has been already pointed out that data and algorithm transparency is crucial as a way to enable citizens to understand which data is used in which application and how ML algorithms make decisions based on	JRC.A.5 EMILIA GOMEZ GUTIERREZ	2.1.a	CNECT	JRC	n/a	COMM COMP GROW	digitalglobe - Digital Globe	01/10/2017 30/09/2020	INS-CAS	1	Comparison of cognitive capabilities between machines and humans and the influence of machine learning algorithms on human decision making	This report will present the results of the investigation of the question on how do machines compare to humans in terms of cognitive capabilities. The goal of the study is to understand the semantic gap/complementarity of human appreciation and computer "predictions"; A comparative study of human vs algorithm performance ins specific tasks, depending on complexity, abstraction level. In addition the influence of machine learning algorithms on human decision making will be explored in terms of how machine recommendations affect judgement and decision making in specific scenarios.	31/12/2018	JRC technical reports
												2	The influence of machine learning algorithms on human capabilities	Exploration of the question how machine learning algorithms affect human capabilities; Learning: influence of personalized tutors, learning technologies (children, adults); Memory: influence of storage/memory systems, e.g. calendar, agenda. Spatial orientation: use of navigation systems/maps	30/09/2020	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201801	Changing data and information flows in digitally transformed societies	The report analyses the results of expert consultation framing the project and then focusing on data and information flows. It addresses the balance between data availability, usage, and privacy, and focuses in particular on the changing patterns and perspectives on data ownership.	20/12/2018	JRC technical reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
6826 - CAS-4 JRC.A.5	5801 - CAS4-DITGHU Digital transformation & Governance of Human Societies	move towards a synthesis phase in year three to focus on policy recommendations. The Future Challenges are: To identify the major trends facing Europe in the next 10-30 years in relation to the digital transformation; To identify optimum governance structures for European digitally transformed societies; what opportunities are offered by various smart city technologies and how can they facilitate smart governance; To identify the key policy challenges relating to massive interconnection (IOT) and the associated risks; To identify policy options that address an ageing and increasingly urbanised and digitally transformed	JRC.B.6 Massimo CRAGLIA	2.1.a	CNECT	JRC	n/a	CNECT COMM GROW JUST	digitalglobe - Digital Globe	01/01/2018 31/12/2020	INS-CAS	201901	Education and skill in massively interconnected societies	The report analyses the results of expert consultation on the key policy and societal challenges of massively interconnected societies where the Internet of Things gives agency to many new participants in our daily lives. This raises also opportunities and challenges for new forms of education and skills needed to live in sustainable and inclusive society.	20/12/2019	JRC technical reports
												202001	New modes of Governance in Digitally transformed Societies	Final report bringing together the several research strands of the project and addressing the possible new modes of governance in European digitally transformed societies delivering human-centred inclusive development.	20/12/2020	Science-for-policy reports
153 - DT JRC.B.6	5861 - FUTURGOV Future of Government in an open Government setting	Contemporary society is rapidly changing. The emergence of social inequalities, migration, and the use of new technologies to communicate and access information, deeply affect both the political participation of European citizens and the relationship between citizens, business and governments which are key pillars for an inclusive, prosperous and united European Union. The evolving complexity of European society needs to be taken into account and analysed in order to identify adequate future government models. The work package Future of Government in an open Government setting addresses these new developments with a future oriented perspective (up to the year 2030). It aims at helping public administrations and society to better understand the changing relationship between citizens, business and governments, where new roles, new actors and new responsibilities appear, new models of trust and accountability of government may be required, and new forms of democracy and governance may materialise and for which new roles of governments may be needed. The work package will explore changing forms of democracy, public service design as well as policy-making for which technology (e.g. social media, use of big data and algorithms, distributed ledgers, etc.) is one of the drivers	JRC.I.2 ECKHARD STOERMER	2.1.a	CNECT	CNECT	Andrea SERVIDA, HoU CNECT.DDG1.H4	EPSC HOME JUST SG		01/01/2017 31/12/2018	CON-AA	2018001	Future of Government in an open Government setting	The final report will describe the results of the work undertaken: It will describe the ongoing and future transformation in the relationship between various parts of the society and the emergence of new actors and forms of interactions, and the results of the case studies. It will also include an analysis of resulting possible threats and opportunities at European level and links to relevant EU policies (including the various governance models to consider and with specific attention to the open government EU policies). Policy recommendations and possible roadmap for future actions will be provided.	15/12/2018	Science-for-policy reports
												2018002	Conference Future of Government in an open Government context	The conference organised towards the end of the study aims at discussing the study results in terms of future government models and policy approaches with stakeholders. The conference report summarizes the discussions and presents the conclusions of the conference.	21/12/2018	Science-for-policy reports
4821 - RESEAD JRC.E.2	6389 - ROBUST Robotics and Unmanned systems in Security	Disruptive technologies are changing the landscape of security in critical infrastructures and urban environments such as smart cities. Among these technologies robotics and unmanned systems such as UAVs and UGVs are expected to play a very important role. Considering the concerns by European Parliament on Robotics it is evident that there is a need by the JRC to investigate this domain. This workpackage aims to address technical and societal issues with respect to the integration of robotics and unmanned systems with existing security solutions in urban areas and large scale infrastructures. E.2 aims to develop a testbed in order to assess the performance of robotics and unmanned systems to carry out specific security related missions. This WPK will contribute to the development of standard methods for the development of standards for assessing the performance of these systems and to the development of technology in the domain of collaboration between such systems in order to autonomously carry out an assigned mission. This requires work on artificial intelligence and distributed control thus directing some of the E.2 activities from critical infrastructure protection to this activity. The applicability of this technological area is evident in the domain of security for urban areas	JRC.E.2 Georgios GIANNOPOULOS	2.1.a	CNECT	JRC	n/a	CNECT GROW		01/01/2018 31/12/2019	INS-RS	1	Development of a robotics and unmanned systems testbed for security applications	The aim of this deliverable is the development of a testbed for robotics and unmanned systems in order to assess the capabilities of constellations of such systems to carry out missions/tasks that require the collaboration of more than one of these systems. The testbed will test the efficiency of control algorithms as well as the applicability of artificial intelligence algorithms. This testbed will be developed taking stock of similar efforts in NIST (with which JRC has a long standing collaboration especially in the fields of resilience and security) and elsewhere and could serve as a best practice in order to help MS to develop such capabilities in the near future.	31/12/2018	Technical systems
												2	Report on the testbed activity	This report will provide an overview of the activities of the testbed with a special focus on real world experiments using existing robotic systems. These testing activities will provide a better understanding on technology gaps that require further research, as well as understand better the socioeconomic implications of robotics in security.	31/12/2019	Science-for-policy reports
7596 - Resilience4EU JRC.B.1	6433 - DIGIRES Resilience and the challenge of the digital transformation	Digitalization is affecting society in many ways. On the one hand, digital technologies allow for potential improvement in productivity and growth (ICT adoption is as important as ICT production), on the other one, due to their labour substitution profile, can lead to a change in the level and in the composition of the demand for labour. They also influence the dynamics of social networks, and can revolutionize many aspects of retail trade and other services. The objective of this work package is to go through the dashboard steps (as detailed in the project description) for the challenge of the digital transformation as a disturbance. It means identifying the sub types of corresponding shocks and stresses, working on the catalogue of shock episodes, finding the system variables that are affected directly or indirectly by the shock, developing the appropriate resilience indicators within the system view (including assets, outcomes and the engine), and eventually finding the related resilience characteristics. The main work-package specific challenge is to identify and quantify the various specific changes stress elements that emerging new technologies evoke in the world of labour, retail and general services, and through the sharing economy. It affects firms, employees, the number and the type of jobs, public administration, the education system, individual and community-level sentiment, changes in actual and perceived quality of life, and the social fabric in general. The main thematic units are B4 (education, human capital and the changing nature of work), B6 (digital economy), B7 (changing nature of work) and E3 (digital security). The Center for Advanced Studies (AS) on Digital Transformation – Governance of Human Society is also involved. Units B3, I1 and B1 contribute in a horizontal way. Policy DGs are involved through Resil.net. The activities of the WP would contribute to the main deliverable of the project, listed in the Community of Practice (6434) WP. Sub-deliverables would be policy and scientific reports, and the associated knowledge management and synthesis activities. The WP cooperates closely with the transversal project on digital transformation (led by B6).	JRC.B.1 PETER BENZUR	2.1.a	CNECT	JRC	n/a	EAC ECFIN EMPL EPSC ESTAT FISMA GROW REGIO RTD SG	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2019	INS-UR					
153 - DT JRC.B.6	6455 - APIS4DGov Digital Government APIs. The road to value-added Open API-driven services	With the aim of realising digital government in pursuing an open government approach, there is increasing interest in moving towards open data and re-usable, modular services, which can be assembled using their interfaces (APIs) to facilitate the creation of new services. In addition, combining available data with other (big) data sets can have a great potential for providing new and innovative services.	JRC.B.6 Anders FRIIS-CHRISTENSEN	2.1.a	CNECT	CNECT	n/a			01/01/2018 31/12/2019	CON-AA	201901	Final report - Digital Government APIs. The road to value-added Open API-driven services	Final report on the potential socio-economic impacts of data-driven public services and the barriers and key enablers (legal, technical, etc.) for providing them. The report will also identify how (big) data from other sources and data analytics can be used through APIs by European public administrations to create new, dynamic, real time services and what challenges exist (e.g. legally and technically). Finally, the report will provide best practices and recommendations for digital government APIs.	31/10/2019	JRC technical reports
153 - DT JRC.B.6	6457 - DT&AI-Brain Building a Framework to Address Digital Transformations and Artificial Intelligence	DT&AI-Brain is the strategic workpackage framing the priorities and the overall approach of the Digital Transformation & Artificial Intelligence (DT&AI) project. DT are taking place across all sectors to the economy and society with varying speed and impacts. The complexity of emerging interactions producing both opportunities and challenges are such that it is difficult to tackle all aspects at the same time. It is therefore necessary to identify priorities starting from the sectors where the JRC has stronger competences, and then gradually moving outwards to other sectors and partnerships. AI and Machine Learning are among the most important technologies increasingly transforming every aspect of society, and therefore deserve a particular focus within the broader DT processes. This workpackage orchestrates the inputs coming from the other WPKs in the DT&AI project, looking for common threads e.g. in the evolution of the technologies, mechanisms to foster innovation, legal framework, and regulatory aspects, and for specificities in individual sectors such as energy, transport, and government services. It will provide synthesis between the economic and social impacts in the labour market and society, and identify possible policy responses that are either cross-cutting or specific to each sector. To do so, DT&AI-brain needs to be the locus of a novel approach in the JRC, and the EC, to work across sectoral policies and long-established relationships. For this reason, it formalises cross-unit relationship to promote a collective framing of problems, opportunities and challenges, increase coordination and close collaboration among relevant JRC activities and promote	JRC.B.6 Paul DESRUELLE	2.1.a	CNECT	JRC	n/a	EMPL GROW JUST TRADE	- Organisation for Economic Cooperation and Development	01/01/2018 31/12/2019	INS-RS	AIREP	State-of-the-Art and potential impacts of Artificial Intelligence	JRC flagship report summarising the rapidly advancing state of the art in AI technology and highlighting the economic, societal, ethical, legal, security and institutional governance implications of this technology	20/12/2018	Science-for-policy reports
												CF4DT	Conceptual Framework for Digital Transformation and Artificial Intelligence	A common conceptual framework for Digital Transformation is required in order to address DT with a systemic approach, as well as focusing on AI/ML as a disruptive technology. We want to ensure a holistic overview of the entire landscape and select the areas where to focus JRC research and concentrate resources. We want to show to relevant DGs that there is a need to study the interactions between digitalisation and the impacts on society (education, employment, market, governance etc.), and that all of these aspects should be considered when new policy interventions are designed	31/12/2018	Science-for-policy reports
												SPN	State of Play of DT in selected policy areas	This report will provide an overview of the socio-economic impacts of DT in selected policy areas and when feasible will include initial recommendations for more coherent policy development. Policy areas will be identified during the first year of the project and will be investigated by selected JRC thematic Units using the common conceptual framework developed in 2018. Candidate areas are Transport, Energy and Construction being respective JRC Units engaged since the beginning in this project. The report will be a dynamic document updated annually.	30/12/2018	Science-for-policy reports
7761 - ANTICIPATE JRC.I.2	6523 - BLOCKCHAIN II BLOCKCHAIN II	This work package will focus on the exploration of the use of Blockchain and other Distributed Ledger Technologies (DLTs) for the social and public good, in particular how governments, civil society or other public sector organisations can potentially transform their ways of operating and delivering their services to and with citizens and businesses through the implementation of such technologies. It builds on previous work within the project/AA #Blockchain4EU: Blockchain for Industrial Transformations with DG GROW and expands it to potential applications in the public and third sectors. This activity will include (1) a mapping exercise of the European ecosystem of companies and other organisations developing Blockchain and other DLTs for social and public good, and/or cooperating with different policy actors at supranational, national, regional or local levels; (2) relevant topics or use cases these companies or organisations are working on (e.g. tax collection, issue of IDs, supply chain of goods and services, distribution of public benefits, voting systems, national or local issued digital currencies, property and land registry, or any kind of government records) and 3) scenarios of new generations of	JRC.I.2 SUSANA FIGUEIREDO DO NASCIMENTO	2.1.a	CNECT	CNECT	n/a	EP - European Parliament UNDP - United Nations Development Programme	01/01/2018 31/12/2018	CON-AA	1	Blockchain and other DLTs for social and public good	The report will provide an overview of present Blockchain and other Distributed Ledger Technologies (DLTs) applications for the social and public good, including an overview of European organisations, policy actors, and relevant topics or use cases.	31/12/2018	Science-for-policy reports	
2.1.b modern telecommunications - develop IT tools and methodologies to analyse the radio spectrum inventory and support spectrum management; perform technical tests and analyses of the integration of 5G technologies and 5G vertical markets; investigate the potential of quantum cryptographic keys for 5G and satellite telecommunications; study the impact of quantum technologies on wireless protocols like 5G; support to the Roam-Like-At-Home																
332 - CORSA	4833 - 5G-Testbed	5G mobile communications are a key enabler for a Digital Europe. Future communications needs of 'vertical markets' (smart cities, Intelligent Transportation Systems, Industry 4.0, e-Health) require substantial improvements in speed, latency and network capacity compared to what is currently available in 4G networks. By addressing these needs, 5G communications will promote strategic growth through large-scale digitalization not only for human-centric communications, but also between smart objects. Integration and testing of 5G enabling technologies is an essential requirement for supporting future standardization and deployment activities. A proactive role of national authorities and spectrum regulators is also a critical factor for the timely implementation of the European Commission's 5G Action Plan (COM(2016) 588 final) and the technology transfer of H2020 results. In this context,	JRC.E.2 JAIME FERRAGUT	2.1.b	CNECT	JRC	PAVLOS	ENER GROW	CEPT - Conference of European Posts and Telecommunications Administrations (CEPT) ETRT - European	01/01/2017	INS-UR	3	JRC 5G Test bed	This deliverable focuses on the design and prototyping of a next-generation mobile communications testbed at the JRC Ispra site. In practice, it comprises a radio access and a core network. The radio access network will feature a number of base stations (both of commercial and experimental grade) in various pioneer frequency bands already identified as candidates for 5G services by the EU Radio Spectrum Policy Group. Authorisation from the Italian spectrum regulator for transmitters in licensed spectrum bands will be obtained under the ongoing collaboration with the Italian Ministry for Economic Development. As far as the core network is concerned, this will comprise software-defined functions hosted in virtual machines in the JRC Data Centre, as well as mobile edge computing nodes. The testbed will also provide the necessary mobile communications infrastructure to carry out experimental tests in other projects and workpackages, as well as with external collaborators.	31/12/2018	Technical systems

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
JRC.E.2	JRC 5G Testbed	experimental testbeds are a key strategic step for the successful deployment of 5G networks in the expected 2020-2025 timeframe. This workpackage will create a next-generation mobile communications testbed at the JRC Ispra site to facilitate national initiatives by Member States. It will deploy, test and integrate 5G enabling technologies for one or more vertical markets by leveraging complementary JRC facilities such as the Radio Spectrum Lab, the EMSL, EPIC (cyber-physical systems), the Cybersecurity Lab, VELA-9 (e-Mobility), Smart Grids, etc. Regarding joint initiatives with other JRC Units, we foresee collaboration with the following WP 2018-2019 JRC projects: Connected and Automated Transport (7534), SPRINT (328) and QT-5G (6315).	MARTINEZ VARA DE REY				FOURNOGERAKIS	MOVE	European Telecommunications Standards Institute (ETSI)	31/12/2019		4	Collaborative Regulatory Pilots on 5G	The EC 5G Action Plan foresees that MSs will deploy experimental testbeds, conduct national pilots and develop 5G network rollout plans within the 2020-2025 timeframe. There are currently 3 distinct use cases of 5G communications that set them apart from existing 4G systems: enhanced mobile broadband, ultra-reliable low-latency communications and massive machine-type communications. Key application domains (verticals) identified for these use cases include public safety, connected cars, enhanced multimedia experiences (e.g., virtual reality), Internet of Things (IoT), etc. This deliverable will focus on the collaboration with national spectrum regulators and RTD actors in MSs on one or more pilots, as well as on linking the JRC 5G testbed to these efforts in order to integrate it at the European level. The goal of these pilots will be to study the technical and regulatory aspects of 5G enabling technologies in a real-life experimental setup.	31/12/2019	Technical systems	
332 - CORSA JRC.E.2	4835 - Spectrum Competence Technical Expertise in Modern Spectrum Management	A harmonised EU Spectrum policy is one of the main elements of the Digital Single Market. Spectrum decisions have a direct long-term impact on not only the fast growing electronic communications sector (DG CNECT) but also the emerging smart infrastructures ("the verticals") such as intelligent transport (DG MOVE), Connected objects / Internet of Things (DG CNECT), Industry 4.0 (DG GROW), Smart Grid (DG ENER), eHealth (DG SANCO, DG CNECT). In the ongoing Telecom Framework review, the Commission is aiming to respond to the future societal needs through a modern approach to spectrum management in a timely and efficient manner. Following successful collaboration with JRC on the Spectrum policy, DG CNECT have proposed JRC to act as a technical competence centre for modern spectrum management. This will help the Commission to resolve a variety of technical questions that emerge when evaluating new proposals and initiatives on spectrum sharing and future coordination of spectrum allocation in harmonised bands. EU-level preparations for a common position at the forthcoming World Radio Conference WRC-19 of International Telecommunications Union have already started for which technical assessment of candidate frequency bands for 5G communications is one of the priorities. Likewise, DG CNECT need	JRC.E.2 James BISHOP	2.1.b	CNECT	JRC	Andreas GEISS	GROW HOME MOVE	CEPT - Conference of European Posts and Telecommunications Administrations (CEPT) ETSI - European Telecommunications Standards Institute (ETSI) ITU - International Telecommunication Union	01/01/2017 31/12/2019	INS-RS	5	Assessment of 5G Enabling Technologies	Several enabling technologies for 5G are being developed and proposed for adoption by industry and standardization. These include: RF frequency wave forms and air interfaces (e.g. modified OFDM; GFDM; New Radio); massive multiple antenna systems (MIMO) systems. This deliverable will be based on an evaluation of relevant 5G technologies, in the Radio Spectrum Laboratory.	31/12/2019	JRC technical reports	
												6	Potentials for 5G Spectrum Sharing	Several new radio frequency bands have been identified as candidates for 5G network technologies. In these bands, there are already existing users - satellite as well as terrestrial services. From the EU regulatory perspective, these bands need to be studied in terms of the technical conditions for sharing of these spectrum bands between existing users and the foreseen 5G networks. The Commission has given mandate to the European Conference of Postal and Telecommunications Administrations (CEPT) to identify these conditions. JRC is contributing to these studies as well as to the relevant study groups at the International Telecommunications Union (ITU), through experimental verification as well as simulations. The results of these studies will help the Commission negotiation position at the World Radio Conference 2019, on the globally harmonised bands for 5G (IMT2020).	31/12/2019	JRC technical reports	
332 - CORSA JRC.E.2	6315 - QT-5G Quantum technologies for future networks	Quantum communication technology holds the promise of preventing eavesdropping even if existing cryptographic protocols (such as RSA and ECC) were broken. It is now available commercially, and some standards exist, but it is still very much an emerging technology, under active development. One of the challenges is finding applications for which it is cost-efficient, difficulties being: incompatibility with existing fibre infrastructure, short distance-range, equipment cost and the fact that algorithmic cryptography is well-trusted. Research work has run far ahead of application, but without solving these fundamental problems. Moreover, communications networks are themselves evolving continuously, so a greater uptake of quantum communication methods is dependent on overcoming the existing barriers and keeping pace with the evolution of communication networks. Since deployment of QKD is expensive, convincing use-cases may be found at the infrastructure level.	JRC.E.2 Adam LEWIS	2.1.b	CNECT	JRC	n/a			01/01/2018 31/12/2019	INS-UR	QT5GD01	Quantum Key Distribution for 5G	This report will examine the question from a standards perspective, based on JRC's own experience in integrating existing commercial QKD equipment with the 5G network prototype being developed within Work package 4833 of the project. On this basis of experimental results, contributions on enhancing the 5G security architecture will be made to the European standardization body ETSI in 2019 and beyond.	31/12/2019	JRC contributions to standards	
332 - CORSA JRC.E.2	6380 - RSP2017-19 Radio Spectrum Policy Programme 2017-19	To provide technical and scientific service to DG CONNECT on the implementation of the Radio Spectrum Policy Programme (RSP) in support to Digital Single Market objectives. The programme aims to promote more efficient use of the radio spectrum and to identify additional capacity with harmonised spectrum for wireless broadband services and next generation wireless services through the emerging 5G networks. Task 1: Testing, evaluation and impact of licensed and unlicensed spectrum sharing scenarios with focus on the 6 GHz band. Task 2: Using Radio Spectrum Inventory tools (RSI) as a source of data for a geolocation database to support efficient spectrum sharing between RLAN and incumbent users in the 6 GHz band. Task 3: Experimental studies and measurements in mmWave 5G candidate bands for WRC-19 in the context of the EC mandate to CEPT on 5G Spectrum, of December 2016.	JRC.E.2 Pravir CHAWDHRY	2.1.b	CNECT	CNECT	n/a		CEPT - Conference of European Posts and Telecommunications Administrations (CEPT) ETSI - European Telecommunications Standards Institute (ETSI)	22/12/2017 21/12/2019	CON-AA	1	Testing, evaluation and impact of licensed and unlicensed spectrum sharing scenarios	This is considered by DG CNECT as a permanent work item on testing advanced future spectrum sharing scenarios, in both unlicensed and licensed spectrum access modes. The work is relevant for the current discussions on the European Electronic Communications Code (attempts at EU level to harmonise Rights of Use conditions (terms of spectrum licenses)). Any relevant frequency band can be tested. The task is important in the context of spectrum requirements for future 5G networks where needs for sharing with other services and applications can arise. The work package is of relevance to the planned Mandate on RLAN in 6 GHz band (sharing with incumbent services) and is directly linked to work package 2 (using the RSI tools to provide data on the 6 GHz band as input to a geolocation database enabling an effective spectrum sharing with incumbent services).	30/11/2019	JRC technical reports	
												2	Using Radio Spectrum Inventory tools (RSI) as a source of data for a geolocation database to support efficient spectrum sharing between RLAN and incumbent users in the 6 GHz band	1) Assessment of data in the RSI currently available in relation to relevant parts of the 6 GHz band (5925-6725 MHz). 2) Subject to relevant outcomes in CEPT to trial a geolocation database concept based on the RSI for WAS/RLAN in 6 GHz, relevant data on the use of 6 GHz band (by FS and FSS stations) will be collected from all EU-28 and uploaded to RSI. 3) Building a geolocation database based on RSI tools which will enable geographical sharing of spectrum by WAS/RLAN with incumbents in 6 GHz band.	30/11/2019	Technical systems	
												3	5G spectrum studies through tests and measurements	To carry out timely studies on 5G spectrum in the context of the EC Mandate to CEPT on 5G spectrum to develop harmonised technical conditions for spectrum use in support to the introduction of next-generation (5G) terrestrial wireless systems in the EU. This work is organised under the CEPT team PT1 where JRC will contribute through tests and measurements. Propagation models for 5G frequency bands, in both sub-6 GHz bands and above 6 GHz bands are being defined by ITU study groups SG3. JRC will contribute to the update of existing ITU-R propagation models, specifically the clutter loss model (P-2108) and building entry loss models (P-2109), through experimental work and field measurements in the 26 GHz and 40 GHz bands. Experimental validation of these propagation models is a critical step in ensuring that the harmonised technical conditions determined by the CEPT under the above mandate for 5G spectrum use in the EU will be appropriate in practice.	30/11/2019	Validated methods, Reference methods and measurements	
332 - CORSA JRC.E.2	7122 - ReQuest-5G Regulatory Quest for 5G Deployment in Europe	Following a bold vision in the H2020 ICT programme, rapid progress has been made on enabling technologies for 5G, the fifth generation wireless communications systems, also known as IMT2020, in the context of the international regulatory framework of the International Telecommunications Union (ITU). Proofs of concept and technological demonstrations by the industry and academia are the aim of Phase 1 and Phase 2 projects under H2020-ICT programme. These are helping to test novel characteristics of 5G networks and the progress towards ambitious 5G key performance indicators (KPIs). End-to-end integration of 5G technologies and related testbeds are the subject of the Phase 3 projects in 2018-20.	JRC.E.2 Pravir CHAWDHRY	2.1.b	CNECT	CNECT	n/a			01/01/2019 31/12/2020	CON-IA	1	Regulatory experiments on spectrum sharing	a	31/12/2020	Technical systems	
2.1.c cybersecurity, privacy and trust - help to build EU resilience to cyber-attacks; provide technical support for the deployment of the EU cybersecurity strategy including on-field research of issues related to the cybersecurity of hyperconnected systems; help to create an adequate security and trust framework for the internet of things (IoT) by supporting the establishment of standards and trust assessment of IoT systems; analyse communication protocols.																	
244 - CSPI JRC.E.3	561 - CyberSec Cyber-Security in mobile environments and in IoT	This WP provides support, through scientific research and investigations, to a set of policy packages in the area of cyber-security and privacy. More in details, it provides support to the revision of the e-Privacy directive for what concerns art.14(3) (privacy and security by design and end to end security of terminal services), art. 5(3) for what concerns the cyber-security of smart-devices, the invasiveness of mobile apps and data leakages and art.(4) for what concerns the security of new application level telecommunication services. The WP will also support point 3.4 of the DSM strategy (COM(2015)192), reinforcing trust and security in digital services & in the handling of personal data with a study analysing the cybersecurity issues which might be of obstacle to the development of an open and free digital market with particular attention to 1) the cybersecurity challenges introduced by mobile services & applications and the mechanisms to empower the citizen against these threats, 2) the raising threats linked to online user profiling (geoblocking, mobile tracking, mobile and IoT user profiling etc.). The Workpackage will support the development and implementation of the revision of the Cyber-Security strategy which will be proposed in the fourth quarter 2017. The activities will move along three areas: - Centralised vs. Decentralised cyber-security and privacy in interconnected environment (IoT and Industry 4.0) - Online tracking, cyber-security issues and related technical safeguards - Cyber-Security of smart-devices (included malicious mobile apps and firmware) These topics have been co-identified together with the colleagues of DG.CNECT H4 and DG-CNECT E.4 to support their policy needs. The support is provided by conducting on-field research on cyber-security issues of the new distributed system paradigms, IoT device and mobile apps, and through the identification of suitable mitigation techniques, which will provide policy options to support the follow-up of the impact assessment results of the ePrivacy directive revision, the implementation of the Digital Single Market strategy and the new Cyber-Security Strategy. The Work-Package will also serve the rolling out of the coming Energy Cyber-Security Strategy, for what concerns smart-metering system and third party service cyber-security. The research results produced in the work-package will be published in peer-reviewed journals.	JRC.E.3 Igor NAI FOVINO	2.1.c	CNECT	JRC	Pierre Chastanet (D.HoU CNECT.H4)	ENER GROW HOME JUST			01/01/2014 31/12/2019	INS-RS	56117	Cyber-Security in online and mobile environments, a Machine Learning approach	This deliverable aims on a side at investigating on the use of new generation Machine Learning algorithms and approaches to characterise and identify new emerging Cyber threats and vulnerabilities and mitigation techniques (leveraging on new "shared and collaborative" based approaches (including deep-learning analysis)). On the other side, the produced knowledge, in term of datasets, code analysis and services profiling, will make possible for the first time to provide to policy makers clear quantitative and statistical evidences and views on the major issues to be solved and regulated in the ICT Security domain The play-ground of the investigation will be that of mobile and cloud based applications being them the raising stars on the ICT scene.	15/12/2018	JRC technical reports
												56118	Online tracking and mitigation techniques	The DSM strategy (sec. 3.3) recognises the role of online platforms (search engines, social media, app stores etc.) in online tracking and targeted advertisement. This study will applying apps and web analysis to investigate on the risks to which the end user is exposed for what concerns online tracking, categorizing the types of cyber-security threats, the source of information leak and possible mitigation techniques. It will contribute to the DSM policies and to peer reviewed publications	13/12/2019	JRC technical reports	
												56119	Research Results	This workpackage is a balanced mixture of research, technical development and policy support. Scope of this deliverable is that of aggregating all the research results in publications in peer-reviewed journals and conferences	14/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												56120	Cyber-Security in IoT and Industry 4.0	This study will move-on in line with the activities already developed in 2017 and 2018 to (a) identify and classify the major classes of cyber-vulnerabilities related to the IoT domain, (b) identify use-case scenarios with the aim of studying potential cascading effects and (c) identify mitigation techniques. Subject of investigation will include communication protocols, firmware, data-flow paradigms and authentication and permission management. The domains will be those of Smart-House and Smart-buildings (where a preliminary work is already under development in 2017) and will start to approach the domain of Industry 4.0, where also standardisation issues will be taken into consideration. The general content of the deliverable has been co-designed with the colleagues of DG-CNECT E.4, and will be further fine-tuned should emerge additional or different last minute policy needs.	14/12/2018	JRC technical reports
244 - CSPI JRC.E.3	2760 - CCDL Crypto-Currencies and Distributed Ledgers in the Digital Single Market	This work-package aims at investigating on virtual-currencies and distributed ledger technologies under a cyber-security and architectural perspective to provide first hand support to the DSM strategy (COM(2015) 192 final), the Anti-Money Laundering policy package and future coming policy requests on the subject. Virtual-currencies are the raising stars among the payment schemes of the digital market. Their completely un-regulated and fully distributed nature is subject of increasing concerns within the bank authorities (see EBA opinion EBA/Op/2014/08). On the other end crypto-currencies due to their fully digital and mobile nature can boost the digital single market by contributing at decreasing the traditional ancillary cost of banking operations. At the heart of cryptocurrencies stand the so called "Distributed Ledgers" a new set of distributed system paradigms that have been recently defined as the "disruptive technology" of the XXI century. Several EU Government (UK, Estonia, Latvia, Germany among the others) started to investigate on possible ways to exploit its potential to provide new, cost-efficient, secure and flexible e-services. The recent report of MEP Weizsäcker (2016/2007(IN)) on virtual Currencies and Distributed ledgers technologies (DLT) approved by the European Parliament Committee on Economic and Monetary Affairs calls the Commission for the creation of a horizontal Task Force DLT, to provide the necessary technical and regulatory expertise to support the relevant public actors. The work-package is composed by two parallel activities: on a side it investigates (through on field tests) on vulnerabilities of cryptocurrencies and on possible regulatory frameworks. On the other side the workpackage investigates on the broader domain of distributed ledgers, to identify use-cases suitable to boost European e-government services (as	JRC.E.3 Igor NAI FOVINO	2.1.c	CNECT	JRC	Pierre CHASTANET DG CNECT - H4	CNECT ECFIN FISMA GROW TAXUD	ECB - European Central Bank EP - European Parliament ISO - International Organization for Standardization (ISO)	01/01/2015 13/12/2019	INS-RS	276010	Distributed Ledgers: opportunities and policy opt.	This deliverable will build on the previous technical reports and on-field analysis to present a list of use-cases where distributed ledgers can boost the development of the DSM agenda for what concerns e-services and e-government. Each use-case will be presented in term of potentialities, cyber-security, resilience and scalability, and supported by a related demo built into the G6OpenSpace. The activity will be conducted, for what concerns the energy use case in synergy with work-package 3440	14/12/2018	JRC technical reports
												276012	ISO TC307 and Fintech Task Force	Participation to the 5 ISO standardisation subgroups of TC307 on the standardisation of distributed ledgers (reference architecture, cyber-security, digital identity, use-cases, smart-contracts) and support to the European Commission Fintech Taskforce (for what concerns distributed ledgers)	14/12/2018	JRC technical reports
												276014	Research Production in DLT	This workpackage is a balanced mixture of research, technical development and policy support. Scope of this deliverable is that of aggregating all the research results in publications in peer-reviewed journals and conferences	14/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
244 - CSPI JRC.E.3	2761 - DPAD Digital Privacy and Data Protection	The Digital Privacy and Data Protection (DPAD) work package will carry out several lines of research in the area of online privacy and data protection, in direct support of the current and forthcoming e-Privacy directive and the General Data Protection Regulation (GDPR) entered into force in May 2016. One of the lines of research is related to the protection of privacy in Over-the-Top (OTT) communications, mainly focused on world-wide email communications, evaluating the current state of play of the protection of inter service provider communications in the world wide email ecosystem and developing best practices. This research, which is identified as one of the three priority areas in the recent communication on cybersecurity (email encryption), supports both the GDPR (with respect to the protection of personal data in email communications) and the new ePrivacy proposal (protection confidentiality of communications and prevention of unsolicited communications). A second line of research is focused on online user tracking and practical technical means to provide user consent. This research will explore technologies such as Do-Not-Track and their potential to support consent models that could allow end-users gain more control over the tracking of their identities in scenarios such as targeted advertisement online and similar. This dimension of consent, which is one of the pillars of the GDPR, applied to user control in online tracking is also one of the key elements of the ePrivacy proposal. Finally, the DPAD has a dedicated line of research focused on exploring the end-user perceptions of privacy risks in the Internet-of-Things domain and analysing possible application of Transparency A study of the potential of quantum key distribution for Galileo	JRC.E.3 JOSE IGNACIO SANCHEZ MARTIN	2.1.c	CNECT	JRC	Pierre CHASTANET - (D.HoJ CNECT.H4 Trust and Security)	HR JUST	EP - European Parliament	01/01/2015 31/12/2018	INS-RS	101	Security and Privacy in OTT services: use case of email communications security	The aim of this deliverable is to support the ePrivacy proposal carrying out research on the privacy protection of Over-the-Top communications, developing the use case of email services (encryption in email communications, protection against phishing and identity theft and message integrity). The deliverable will continue previous work in this topic evaluating the current state of play of the protection of inter-service provider communications in the world wide email ecosystem and promoting best practices. The MECSA platform made available online in 2016 will be extended to support the evaluation of new email security standards currently under development (such as SMTP-STS) and will be extended to support the initial testing of end-to-end encryption support in webmail services.	14/12/2018	JRC technical reports
												102	User control and consent in web tracking	Description: This deliverable will analyse technical safeguards to allow end-users to gain more control over the level of tracking applied to them when using online services, such as in the scenario of targeted advertisement. The deliverable will identify existing standards and consider technical solutions to support the development and deployment of several consent models. This deliverable will analyse in detail technologies such as do-not-track (DNT), user control of third party cookies and the functional and usability aspects of privacy settings implemented in the browser.	10/12/2018	JRC technical reports
												103	Privacy considerations and informed consent on Internet of Things.	The purpose of this deliverable is to explore the end-user perceptions of privacy risks in the Internet-of-Things domain analysing the end-user understanding of the personal data flows, the privacy policies and the means to exercise their data protection rights. This deliverable aims to analyse the challenges of informed consent in IoT and identify solutions such as Transparency Enhancing Tools (TETs) and awareness raising strategies.	10/12/2018	JRC technical reports
346 - GALILEO JRC.E.2	6382 - GALQUANTUM Potential use of quantum technologies in the EU GNSS Programmes	Quantum key distribution (QKD) as a possible means to improve security elements of the Galileo system has been mooted in discussions between JRC and DG GROW Directorate D, within the framework of the existing collaboration. GROW have stated that it is strategically valuable as QKD can become a very relevant differentiator for Galileo in comparison with other GNSS. Interest is especially in QKD's potential for the Galileo Batch 4 and the Second Generation (G2G) after 2025. For example, one question is whether a QKD experimental payload could be integrated in a Galileo spacecraft. Another example could be to introduce QKD in the ground segment secure communications infrastructure. The analysis will address the potential for QKD in both the space and ground segments, including the types of satellite and fibre infrastructure used.	JRC.E.2 Adam LEWIS	2.1.c	GROW	JRC	n/a	GSA - European GNSS Agency	01/01/2018 31/12/2018	INS-UR	GALQUANTUM1	An assessment of the possible use of quantum key distribution for the Galileo PPS	A report elaborating the technical factors which determine whether implementation of QKD in the Galileo system would be favourable. The report will consider the distribution of keys for securing services and also for protecting software defined elements of the system. The complementary view point will also be taken: the potential of the Galileo constellation and ground segments as a platform to enable QKD to be more widely applied than it is at present. Any absolute or major objection will be highlighted. In so far as is possible at this early stage, some indicative cost-benefit assessment may be attempted. This report is intended to be a direct contribution to policy.	31/12/2018	JRC technical reports	
244 - CSPI JRC.E.3	6393 - NCSEC Network Cyber Security	The Network Cyber SECurity (NSEC) work package will conduct research in the area of network cybersecurity. The goal of the WP is to identify, assess and develop techniques to support the identification and analysis of new Internet cyber security attacks encompassing all the 7 layers of modern communication protocols (from physical to application layer), and taking into consideration different use-cases paradigms (cloud, mobile, SCADA etc.) A line of research within this WP will focus on the design and development of an environment, within the OpenSpace lab, enabling the recreation and simulation of network cyber-attacks to support their analysis and study. Another line of research will focus on developing innovative techniques to analyse and assess emerging cyber-threats and identify possible mitigation strategies. The workpackage find its natural justification in the raising policy attention on the network cyber-security theme.	JRC.E.3 Thierry BENOIST	2.1.c	CNECT	JRC	n/a	CNECT JUST		02/01/2018 31/12/2020	INS-RS	1001	Evolving IT experimental facilities to help counter emerging technological and cyberphysical threats	Units E.2 and E.3 are endowed with experimental facilities, respectively the EPIC and OpenSpace laboratories. These facilities have a proven track record tackling a number of cybersecurity issues related to the IoT(Internet of Things), communication networks, or large complex cyberphysical systems such as smart grids. This report will describe, using concrete use cases, how such experimental facilities can build upon their past successes to evolve and rise to the challenge of tackling complex modern cybersecurity issues such as those related to Industry 4.0 or hybrid threats.	14/12/2018	JRC technical reports
												1002	Innovative techniques for analysing and assessing emerging cyber-threats	JRC Technical report presenting a study of innovative techniques to analyse and assess emerging cyber-threats. The report will also develop a set of practical use cases and identify effective mitigation strategies.	13/12/2019	JRC technical reports
												1004	On the use of the EPIC laboratory to support large-scale distributed ledger experiments	Unit E.3 has developed in-house knowledge in the field of distributed ledgers. This report will investigate how the resources of the EPIC testbed can be leveraged to perform a quantitative leap in the scale of experiments underpinning this research.	14/12/2018	JRC technical reports
244 - CSPI JRC.E.3	6397 - SerIoT SerIoT - Secure and Safe Internet of Things	While analysts agree on the fact that security concerns and the effective management of produced data need to be worked out before the IoT can be fully developed, there is little doubt the long-range impact will be substantial. While today security technologies play a role in mitigating risks connected to IoT security, we foresee problems and potential threats. It is not enough to include what has been developed until now. In currently developed systems, the data is not delivered using uniform, consistent technology, often conflicting protocols, with unverified designs. Moreover, we think of the maintenance cycle in a very short term span, which makes updates of IoT systems not compliant. Lack of standards for authentication and authorization, as well as the security standards, and platform configurations means that every vendor creates their own ecosystem. Following these challenges, the SerIoT project will address all the aforementioned challenges under a common framework that will be developed based on the co-operative efforts and prior expertise of a strong interdisciplinary consortium, including the most important European key players in the IoT domain.	JRC.E.3 Gianmarco BALDINI	2.1.c	CNECT CNECT	CNECT	n/a			03/01/2018 03/01/2021	CON-IA	63971	Survey on existing IoT security and privacy standards and identification of gaps and priorities and strategy to support the different standardization bodies	SerIoT project will survey the existing security, privacy and interoperability standards de-fined in the context of IoT or applied to IoT. In this activity, the project will take into account the works being developed of previous projects like BUTLER, iCore, IoT6, RERUM, COMPOSE, OpenIoT and the results from the Internet of Things Clus-ter (IERC). From the initial analysis, SerIoT will identify the main gaps to be address and main standardization activities, where SerIoT will actively contribute based on the alignment.	03/04/2019	JRC technical reports
												63972	Contributions to the standardization bodies, consortiums and Alliances	the SerIoT project will investigate approaches and technologies to make interoperable security and privacy standards using security bridges, crypto-agility, security delegation, trust negotiation, secure middleware and so on. Thus, the main focus will be on the development and contribution to standards and other projects. First, SerIoT partners will analyse which standard-based modules from existing platform can be integrated, and for the missing gaps contribute with the different standardization bodies in both directions. From the standards bodies to SerIoT to align our platform and proposition globally, and also from SerIoT to these bodies, in order to ensure a higher impact and adoption of the works proposed.	03/01/2020	JRC technical reports
												63973	Contributions to the standardization bodies, consortiums and Alliances - Updated version for Month 36	This deliverable is an updated version of 63972 for the end of the project. This deliverable will describe what standards have been drafted and the type of support, which has been received by the research and industry community. In particular, the deliverable will investigate if the gaps previously identified in 63972 have been correctly addressed in the final part of the SerIoT project. If this is not the case, the deliverable should describe further actions after the end of the project to address such gaps.	03/01/2021	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
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244 - CSPI JRC.E.3	6524 - CS3 Cyber-Security Strategy Support	This administrative arrangement is the follow up of the SECI 2016 A.A. and SECI 2017. It will support with technological activities the co-design of supporting measures for the competitiveness & innovation of the European Cybersecurity Industry accompanying the activities of the Contractual Public-Private Partnership (cPPP) established in 2016 and the proposal for the revision of the Cyber-Security Strategy which will be presented by the Commission in the last quarter of 2017. The foreseen activities will move in the areas of standardization, security compliance, labelling and identification and mitigation of zero-day vulnerabilities in the different areas of the cyber-security industry.	JRC.E.3 Igor NAI FOVINO	2.1.c	CNECT	CNECT	n/a			15/03/2018 15/03/2019	CON-AA	CS3	Final Report	This deliverable aims at supporting the development of the cyber-security strategy which will be presented by the Commission in the fourth quarter 2017. It will include activities aiming at (1) clustering cyber-security industry domains (2) Identifying proper measures to boost the cyber-security industry in Europe through standardisation and labeling initiatives (3) to demonstrate through sectorial pilots the viability of the certification and labeling scheme proposed in the cyber-security strategy	15/03/2019	JRC technical reports
												CS31	Intermediate Report	This deliverable reports the activities carried out together with DG-CNECT to identify the proper measures to boost the competitiveness and innovation of the European Cybersecurity Industry. It will include landscape activities in the cyber-security standardisation and cyber-security/privacy labeling sectors.	12/10/2018	JRC technical reports
2.1.d interoperability of e-infrastructure - provide technical support for the interoperability of e-infrastructure (helping to modernise the digital public services) and open access (supporting open science); use the convergence of big data with online tools (supporting citizen science) and assess the interoperability of energy services (in support of digitisation of the energy system); analyse the impact of interoperability and standardisation on intellectual																
7599 - JRC-Data4Policy JRC.I.3	977 - OpenData Open Data, Knowledge & Information Management	Data, information and knowledge are important assets for the Commission and the need for organizing its own production of data, information and knowledge has been emphasised by the communication on "Data, Information and Knowledge Management at the European Commission" (SWD(2016)333). This work package addresses these challenges. In past activities, the JRC Data Policy was developed to establish better data management practices and to ensure access to JRC data in accordance with the Commission Decision on the Reuse of Commission Documents (Re-use decision, 2011/833/EU) and the Open Access principles of Horizon 2020. The JRC Data Policy was endorsed in 2015 and it is subject for review three years after its adoption. This work package will review the functioning of the JRC Data Policy and, if needed, ensure that a revised and up-to-date version is provided. It will assess whether a potential extension of the JRC Data Policy to the entire commission is feasible. Accompanying the JRC Data Policy, it provides management guidelines for data policy implementation throughout the data lifecycle - from planning and acquisition to publishing of data. With these activities the work package contributes to specific actions of the action plan for the implementation of the communication on "Data, Information and Knowledge Management at the European Commission" (actions 1.3 and 3.3). A second strand of activities helps increasing the access and reuse of Open Data. The work package ensures availability of JRC data through the JRC Data Catalogue and the EU Open Data Portal, so that evidence gathered is made available to the public following the recommendations by the Better Regulation guidelines (SWD(2015)111). By this JRC facilitates increased transparency, accountability and coherence of policy-making. With the aim of establishing good data management practices within the JRC, it further develops the JRC's e-infrastructure (i.e. the JRC Data Catalogue infrastructure) that will support e.g. JRC knowledge centres dealing with data. It investigates novel approaches for the	JRC.B.6 Anders FRIIS-CHRISTENSEN	2.1.d	CNECT	JRC	Marta NAGY-ROTHENGASS	ENV ESTAT OP RTD SG	EEA - European Environment Agency	02/01/2017 30/04/2019	INS-RS	201801	Revision of the JRC Data Policy and implementation guidelines	This deliverable reviews the JRC Data Policy and, if needed, provides revised and up-to-date version of the JRC Data Policy. Furthermore it assesses whether a potential extension of the JRC Data Policy to the entire commission is feasible. Aligned with a potential update of the JRC Data Policy, it also provides updated guidelines for the data policy implementation throughout the data lifecycle among others based on the feedback from the continued implementation. This deliverable further supports the continued developments of Open Data standards such as DCAT AP.	14/09/2018	JRC technical reports
												201803	JRC Data Catalogue infrastructure	An updated and improved JRC Data Catalogue infrastructure. The deliverable includes a full data catalogue infrastructure operations manual and systems documentation, which facilitates the handover of the operation of the JRC Data Catalogue infrastructure. The catalogue infrastructure supports the description and publication of metadata of the data resources of JRC Institutes. It further provides metadata for the EU Open Data Portal and potentially for other initiatives of the Commission. The operation of the JRC Data Catalogue infrastructure is migrated to a proper operational environment that can ensure its continued maintenance and functioning.	31/12/2018	Scientific information systems and databases
												201804	Improve access and reuse of data	This deliverable will look into improving access and reuse of Open Data. It will include a study highlighting the methodology and benefits of using Linked Data for data publication, as well as its possible limitations. It will further investigate innovative approaches for the (semi)automated quality control and enrichment of metadata (e.g. annotations and provenance).	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201902	Support to the JRC Data Catalogue infrastructure	Initial support to the new operational environment for the JRC Data Catalogue infrastructure.	30/04/2019	Scientific information systems and databases
4942 - SMARTBUILD JRC.E.4	4953 - INSTECH Innovative Sensor Technologies	Whereas telecommunications have impacted many aspects of people's lives, civil infrastructures and the built environment are yet to fully benefit from the digital revolution. INSTECH focuses on the analysis and deployment of embedded ICT system architectures to support the development of wireless diagnostic systems, which can be used to improve the security and performance of ad-hoc wide-area industrial and societal infrastructures in support to EC policies. This WPK will deal with the interaction of communication protocols and electronic components. Analytical studies and prototype development will be developed to simulate the dynamics, structure and network connectivity based on the distance-weighted topology of wireless sensor networks. We will also study the feasibility of wirelessly connected spatially-distributed sensor networks to monitor the engineering performance (e.g. strains, vibrations, energy performance, duty cycle and type of use) of a wide range of buildings and infrastructures. The WPK activity mainly focuses on the hardware implementation of Wireless Sensor Networks and constitutes the practical counterpart of the more mathematically oriented DYSTECs (4962) WPK within the context of the SMARTBUILD project. Although the prospect of implementing innovative ICT systems in the construction sector (buildings and infrastructures) offers great potential, there is the ever-present threat of cyber-attacks. For this reason, collaboration with Unit E.3 will estimate the weak points and vulnerabilities of such systems	JRC.E.4 Graziano RENALDI	2.1.d	CNECT	JRC	Rolf RIEMENSCHNEIDER	ENER GROW MOVE RTD		01/01/2017 31/01/2019	INS-RS	2	WSN Communication Optimization Through Feedback	Live data and communication packets are analysed and algorithms are developed for the optimal communication via adaptive network topology through sensors feedback. The activity will consider cybersecurity issues in collaboration with E.3 Unit, in particular to evaluate the threats and effective approaches in infrastructural and building IoT towards more secure Smart City implementations.	31/12/2018	JRC technical reports
												3	Data Visualization for citizen awareness	In conjunction with external partners from Art and Design Schools in Europe, it will be studied how to integrate Wireless Sensor Technology and data collected at city level (such as in Smart Cities) to inform and raise consciousness of urban environmental performance that impact citizens in their cities, leveraging the synergy between Science and Technology and the Arts.	30/09/2018	Technical systems
												4	IoT in Smart Buildings and Infrastructures	Interconnected technologies can improve the performance of buildings and infrastructures. The large-scale improvement is negatively affected by the absence of common standards and integration approaches. For this reason, this activity will evaluate the emergence of specific IoT-related performance standards for the integration of smart technologies in buildings and infrastructures.	20/12/2019	JRC technical reports
												2	Urban dynamics through WSN monitoring	Urban systems can be represented as complex networks; these can be examined using data obtained from distributed heterogeneous wireless sensors (such as those suitable to SMART Cities) to provide insights on urban dynamics. Data obtained from these sensor networks will be examined by developing alternative processing strategies (e.g. integrating GIS and graph theory). The enhanced knowledge retrieval will provide more efficient and timely support for policy decision-making with direct contribution to the JRC Cities Umbrella and the Digital Transformation projects. The generic mathematical approaches based on the application of non-linear time series and network analysis will be applied to both the complex behaviour of urban systems and to study the complex structure of financial systems currently undertaken by Unit B.1.	21/12/2018	JRC technical reports
4942 - SMARTBUILD JRC.E.4	4962 - DYSTECs Dynamics and Structure of Complex Sensor Networks	Computational capacity and data generation rates are changing the way we collate and examine data. Data from wireless sensor networks will play a fundamental role in developing the EU's ICT programme in many industrial and social areas. The scope of DYSTECs is to develop a prototype data analysis platform for distributed data-gathering systems, in order to understand the future implications for the design of geographically distributed sensor networks towards more efficient, sustainable and resilient buildings, cities and infrastructures. Platforms based on GIS-layered data (ideally using space-based data) and mathematical models will simulate scenarios of signal percolation of short-range communication networks over long-range distances and will provide novel strategies on how data from heterogeneous spatially-distributed sensors can be combined and analysed to provide additional insights augmenting the information typically gathered. A collaboration with Unit B.1 will be developed; specifically the areas of joint interest concern the application of non-linear time series and network analysis to study the behaviour of complex systems. The generic mathematical approaches can be applied to both the complex behaviour of urban systems, so called urban physics, and to study the complex structure of financial systems currently undertaken by Unit B.1. The Workpackage has direct connection with the Digital Transformation project and will contribute in JRC researchers have conceived and developed the Happy Onlife product as a peer and media education toolkit promoting safe and responsible uses of ICT among adults and children (8 - 12 yrs old). It comprises a set of resources and best practices to raise awareness about ethical and educational challenges of ICT, including online safety risks for privacy, cybersecurity and cyberbullying affecting children's life. The objective of this proposal is to develop low cost services for peer and media education, behavioral assessment and iterative content management supporting and prompting the following actions: •deploy, promote and validate 'Do-It-Together' Happy Onlife game-based learning towards educational entities in European countries, in support of EU policies in cybersecurity, privacy, data protection and children's rights domains; •investigate, together with educational experts, the assessment of innovative participatory services for	JRC.E.4 Flavio BONO	2.1.d	CNECT	JRC	Rolf RIEMENSCHNEIDER	GROW MOVE REGIO	01/01/2017 31/12/2019	INS-RS	3	Agent-based modelling for resilience	Complex systems need specific measures and analysis approaches to provide metrics for performance assessment. The systems' dynamics are difficult to predict in extreme conditions (e.g. congestions, natural hazards) when infrastructures are stressed to their limits/ collapse. Novel metrics and analysis methods (eg: agent-based modelling, graph theory and data mining) set the basis for integration of intelligent streaming of sensor data and distributed signal processing for large scale networks.	20/12/2019	JRC technical reports	
											1	Societal engagement for cybersecurity awareness	Report containing recommendations for best practice on peer and media education and behavioral assessment of opportunities and risks for privacy, cybersecurity and cyberbullying affecting children's life. The recommendations will be produced from experiences in in four countries (BE, IT, PT, RO).	31/08/2018	JRC technical reports	
244 - CSPI JRC.E.3	5902 - Happy Onlife Do-It-Together Happy Onlife game-based learning		JRC.E.3 Monica GEMO	2.1.d	JRC	JRC	n/a			01/03/2017 31/08/2018	INS-PC	2	Happy Onlife system update	This is an updated release of Happy Onlife software enhanced with an iterative management process for content updates, translation, reporting by non-technical educational users (e.g. more diversity in themes across the 8-12 age range, new content for other domains, age ranges, like elderly, etc.) and quality improvement of the Happy Onlife resources	31/08/2018	Technical systems
7653 - ENGAGE JRC.I.2	5940 - AirSensEUR AirSensEUR Platform	The AirSensEUR Proof of Concept Work Package (AirSensEUR PoC) is a joint activity shared between units C.5 (Air and Climate) and B.6 (Digital Economy). The objectives of the work package are as follows: A) Fill existing gaps of the currently existing prototype, ensuring that AirSensEUR becomes a fully functional operational platform. No new features will be added. The work package team will focus on ensuring that the currently existing prototype is fit for purpose and delivers in accordance with its objectives. The work package will implement series of activities, transferring to E&I countries knowledge and lessons learned (technological, organizational, legal) from the implementation of INSPIRE in EU. The activities will, as in previous years, be planned and accomplished in close collaboration with key international actors, such as World Bank, FAO, United Nations Economic Commission for Europe (UNECE). A second dimension that the work package will address is the emerging topic of digital transformation and data-driven economy and innovation. From a broader perspective the planned initiatives will contribute to the implementation of the Sustainable Development Goals through the JRC commitment to the European branch of the United Nations Committee of Experts on Global Geospatial Information Management (UNGGIM-Europe).	JRC.B.6 ALEXANDER ALEXANDROV KOTSEV	2.1.d	ENV	JRC	n/a	CNECT GROW	EEA - European Environment Agency UNEP - United Nations Environment Programme (UNEP)	09/02/2017 30/06/2018	INS-PC	D5	IoT prototype based on AirSensEUR	An IoT prototype based on AirSensEUR will be developed and deployed, following the findings from D4 of the WPK. As many of the components of AirSensEUR will be used. The IoT prototype will be accompanied by a quantification of the workload necessary for reusing each of the existing components outside the air quality domain.	18/05/2018	Technical systems
484 - INSPIRE JRC.B.6	6383 - INSPIRE-xEU INSPIRE beyond the EU		JRC.B.6 ALEXANDER ALEXANDROV KOTSEV	2.1.d	NEAR	JRC	n/a	CNECT ENV ESTAT REGIO	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) E&I countries - Enlargement & Integration - countries UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2018 31/12/2018	INS-E&IA	INSPIRExEU 001	Summary report on INSPIRE/SDI activities with E&I countries in 2018	The short summary report will provide an overview of all activities conducted in 2018.	31/12/2018	JRC technical reports
		Support JRC activities under the Data for Policy pillar through coordination of working groups: WG1 - Tools and methods for data analysis and visualisation WG2 - ICT infrastructure for data WG3 - specific issues for data										01	Data for policy roadmap	Production of a roadmap to address data for policy in liaison with ESTAT, CNECT, and DIGIT.	31/12/2018	Science-for-policy reports
												02	Tools and methods for data analysis and visualisation	Recommendations for tools and methods for data analysis and visualisation in the data for policy support context.	31/12/2018	JRC technical reports

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7599 - JRC-Data4Policy JRC.I.3	6521 - JRC-D4P JRC-Data4Policy		JRC.I.3 Charles MACMILLAN	2.1.d	JRC	JRC	n/a	CNECT DIGIT ESTAT		01/01/2018 31/12/2020	INS-RS	03	ICT for scientific data for policy	Definition of requirements and propose possible solutions for an actionable ICT ecosystem for scientific data for policy providing an environment for knowledge sharing and collaborative working while ensuring that the results of the data analysis are documented and reproducible.	31/12/2018	JRC technical reports	
												04	Activity report	The activity report will contain recommendations on IP in relation to data for policy and to policy for data.	01/06/2018	JRC technical reports	
												201801	Support to Regulation 515/97	Regulation (EU) 2015/1525 of 9/11/2015 improved the framework governing the mutual assistance in the area of customs, under Regulation 515/97. It advances the tools for detecting customs fraud and provides for the creation of centralized databases containing information on container movements and on goods entering, leaving and transiting the EU. By 2020 infrastructures for data acquisition and analysis should be in place. The preparation in OLAF and TAXUD is ongoing, but the existing analytical tools need to be scaled to the much larger volumes of data and adapted for addressing new complex pattern observed in import/export declarations. Data4policy project will work in synergy and complement SITAF-ST WKP 3365-AMT5 Phase 2 by studying the new patterns and methods for their detection. AMT5 Phase 2 will assess applicability of the new methods in operational contexts and produce statistics based on the new data for dissemination to MS Customs and relevant EC services.	15/12/2019	Scientific information systems and databases	
4942 - SMARTBUILD JRC.E.4	6802 - QATWALKS Quantum sensors and walks	The basis of many possible applications of quantum technology such as encryption, quantum sensors and quantum computing, relies on the phenomenon of quantum entanglement and superposition. Whereas this field has received much interest from national and EU programmes there is still a credibility gap between the claims of theoretical and experimental physics and the applicability to engineering or information technologies. One essential element towards the application and development phase is a more concerted technological interaction between physicists and engineers. The aim of this Underpinning Research is to reproduce two types of experiments on quantum processes, which have been validated and presented in the literature, and adapt them to accommodate signals from sensors used to measure engineering-related quantities such as deflections and strain. The procedure involved will pave the way for an examination of the practicalities, adaptation and feasibility of quantum technologies for prospective use in engineering applications. The activities can be taken as a spring-board for the development of a more applied approach to JRC's support to EU policy in this area. In particular this package addresses an important issue highlighted in the Commission's staff Working document that points out that to make, so-called, "quantum engineering" viable, it is not just about high-end science but that the skills-transfer from the high-end academic laboratories to an industrial context should also be addressed.	JRC.E.4 Constantin COUTSOMITROS	2.1.d	CNECT	JRC	n/a			01/01/2018 31/12/2019	INS-UR	1	Down-conversion Experiment for perturbed entangled signal and idler beams	The spontaneous down-conversion effect of passing laser light through a non-linear crystal generates entangled carrier and idler beams. Is it possible to use the idler channel to note the presence of mechanical perturbations (or spatial light modulator-SLM) applied to the signal channel? We first generate entangled photons by spontaneous parametric down-conversion. The signal beam will be disturbed by a mechanical perturbation; the magnitude and bandpass frequency of the disturbance and how to apply these to the optical set-up will constitute one of the major challenges of the project. The idler and signal beams will be observed using an EMCCD camera or avalanche single-photon detectors in Geiger mode, after which a correlation test (Bell test) will be conducted in order to assess if the level of entanglement remains significant.	15/12/2018	Technical systems	
												2	Validation of electro-optic modulation	A signal from a strain sensor modulates coherent laser-light to alter the initial conditions of a random walk on an optical lattice. Using the voltage from a piezo-polymer sensor (embedded within a suitable specimen) as the modulating signal for an Electro-Optic Modulator—EOM. The EOM will change the coherence level (either through phase or amplitude modulation). The conjecture is that an attenuated pulsed laser is modulated such that the polarized photons are made to follow a 2-dimensional walk on an optical matrix. A phase shift is introduced via the EOM which results in a stronger de-coherence of the quantum walk and so generates a probability distribution markedly different from that expected for a coherent walk on a grid. One pattern corresponds to, so-called, static disorder and another to fast fluctuations.	15/12/2019	Technical systems	
3. A resilient Energy Union with a forward-looking climate change policy																	
3.1.Climate action																	
3.1.1.Mitigation																	
3.1.1.a economic and climate modelling/assessments - design and implement domestic and international climate policies and strategies to keep global warming well below 2°C; maintain and further develop integrated set of models that cover relevant sectors and greenhouse gases in the EU and other relevant world regions for applications such as (i) socio-economic analysis of scenarios consistent with climate policy goals; (ii) development of in-house																	
143 - CCE JRC.C.6	1074 - Integrated-CCMA Integrated Multisectoral Climate Mitigation Policy Assessment	The work package focuses on the analysis of the economic effects onto the overall economic structure (both at EU and global levels) of climate-protecting policy measures (mitigation climate policy), taken within energy-intensive sectors. The emphasis is the analysis of the mitigation policy scenarios, using the multisectoral GEM-E3 model, according to the scenario design implemented in the models used for energy sectoral scenarios (POLES and POTENCIA). The tasks include the building up, testing, and validating the multi-sectoral, macroeconomic modelling tools to be used for such type of analyses, the large scale multisectoral GEM-E3 model and the new MaGE macroeconomic model. The models are also used for the analysis climate impact and adaptation (climate adaptation policy) and air pollution policies. The long-term working relationship with DG CLIMA has materialised in a substantial number of contributions to impact assessments and analysis addressing global and EU-wide economic impact of climate mitigation scenarios. In the last few years, a similar modelling support work has been made for DG ENV regarding the analysis of air quality policies (Clear Air Policy Package), as well as	JRC.C.6 Juan Carlos CISCAR MARTINEZ	3.1.1.a	CLIMA	JRC	Tom van Ierland, DG CLIMA	DEVCO ENER ENV		01/07/2013 31/12/2020	INS-RS	2	Progress report	Technical report describing the advances in the modelling as well as maintenance and data work carried out throughout the year in order to enhance the analytical capability of the unit, mainly related to mitigation climate policy and air quality. This 'container deliverable' also includes the contribution to the relevant Commission impact assessments and the related scientific publications.	31/12/2018	JRC technical reports	
142 - EU economic analysis JRC.C.6	5033 - CLIMA 2017 Support to the development of EU and international GHG mitigation	DG CLIMA makes extensive use of modelling capacity to prepare its policies. To assess the impact of climate change policies it applies economic models. There are many examples where quantitative analysis from the JRC has been used to prepare specific EU policy Communications. Following the conclusion of the Paris Agreement in 2015, the capacity of C.6 / ECCET to represent in a model the emissions pathways capable of meeting global temperature goals is of utmost importance. While the existing contributions of ECCET in this area are notable, it is vital to extend this capacity, in order to model in greater detail the characteristics of global and regional low-emission pathways in the period 2030-2100 including the effect of post-2030 climate policies on sectoral competitiveness in Europe and beyond. A key periodic deliverable is the Global Energy and Climate Outlook (GECO), jointly produced with WP	JRC.C.6 Hans Peter RUSS	3.1.1.a	CLIMA	CLIMA	MILES PERRY	ENER		01/11/2016 31/12/2019	CON-AA	D2	Interim Report	Report summarizing the research and analysis carried out under this AA	30/08/2018	Science-for-policy reports	
												D3	Analyses of global climate scenarios	The report describes and analyses the scenarios defined in cooperation with DG CLIMA. These scenario feed into the international negotiations.	31/12/2019	JRC contributions to policy documents	
142 - EU economic analysis JRC.C.6	5083 - PostCOP21 Global Mitigation Scenarios post COP21	This work package provides (a) analytical capability and quick-reaction support to the global emission abatement scenarios used by DG CLIMA in the UNFCCC negotiation rounds and (b) produces with tentative yearly periodicity the world energy analysis contribution to the Global Energy and Climate Outlook (GECO), the backbone document used by the EC on the grounds of the international mitigation policy initiatives. Some background work in order to have the modelling tools available (mainly POLES, and its interfaces with GEM-E3 and MAGE).	JRC.C.6 Hans Peter RUSS	3.1.1.a	CLIMA	JRC	Willem VAN IERLAND			01/01/2017 31/12/2020	INS-RS	Deliverable2	Progress Report 2018	Technical report describing the advances in the modelling as well as maintenance and data work carried out throughout the year in order to enhance the analytical capability of the unit.	31/12/2018	Science-for-policy reports	
142 - EU economic analysis JRC.C.6	6348 - CLIMA 2018 Support to the development of GHG mitigation strategies for the EU	DG CLIMA makes extensive use of modelling capacity to prepare its policies. To assess the impact of climate change policies it applies economic models. The JRC has been contributing to various impact assessments of climate policies under the framework of administrative arrangements (eg CLIMA 2015). This AA is a continuation of the long standing collaboration.	JRC.C.6 Hans Peter RUSS	3.1.1.a	CLIMA	CLIMA	n/a	ENER		01/01/2018 31/12/2019	CON-AA	R2	Final report	Technical report summarizing the policy analyses carried out under this administrative agreement as well as related and background information.	20/12/2019	Science-for-policy reports	
												r1	midterm report	Technical report describing the analyses carried out under this AA	14/12/2018	Science-for-policy reports	
3.1.1.b GHG and air pollutants emissions modelling - monitor, report and verify energy-related, agricultural and forestry (Land Use, Land-Use Change and Forestry, LULUCF) emissions to meet legal obligations at EU and international level; model and analyse how to integrate the assessment of these emissions into EU and international legislation; assess GHG emissions and mitigation options in agriculture; compile global emissions inventories which include																	
442 - AGFORCC JRC.D.5	985 - Agri4Climate GHG emissions, climate change impacts, mitigation and adaptation in agriculture	Within AGFORCC, Agri4Climate assesses the impacts of agriculture on climate change, and the impact of climate change on agriculture. Agri4Climate produces the EU greenhouse gas (GHG) emissions inventory for agriculture. The Common Agricultural Policy Regionalised Impact (CAPRI) and other models are used to evaluate mitigation and adaptation options for climate policy related to agriculture. Crop models and data are used to perform systematic analysis of agricultural crop yields and production under climate change conditions, including the evaluation of adaptation measures to avoid climate change impacts on agricultural production. The WP collaborates with the AgMIP global agricultural modelling project and other international efforts.	JRC.D.5 FRANCISCO DENTENER	3.1.1.b	CLIMA	JRC	Peter WEHRHEIM, DG CLIMA HoU A2; EDOARDO TURANO, DG CLIMA A3; Ignacio Seoane, DG AGRI, HoU H4	AGRI ENV	EEA - European Environment Agency MS EU - Member states EU UN FCCC - UN Framework Convention on Climate Change (UNFCCC)		01/01/2017 31/12/2019	INS-UR	201701	GHG inventory for agriculture.	Annual contribution to the European Union's GHG inventory, improvement of GHG accounting methodologies with CAPRI, and contribution to the International Nitrogen management system, for the agricultural sector in support of the JRC/CLIMA Memorandum of Understanding "Implementation of the current reporting and review requirements under the Kyoto protocol and the UNFCCC and preparation for fulfillment of future monitoring, reporting and verification (MRV) requirements". Delivered annually in July (inventory report) and December (review) (2017, 2018). Outputs: Contribution to the EU GHG inventory and scientific publications. Assisting the review.	27/07/2018	Science-for-policy reports
													201703	Research on agriculture - climate change modelling	Research on improving the modelling of climate change impacts on crops and adaptation options. Analysis of co-occurring stress factors for global crop yields and linking to economic indicators. Testing of modelling assumptions, improving consistent bias correction, including for ozone and nutrients. Contribute to AgMIP global modelling project. Systematic testing of the impact of adaptation options on crop yields.	23/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													20191	GHG inventory for Agriculture 2019	Annual contribution to the European Union's GHG inventory for the agricultural sector in support of the JRC/CLIMA Memorandum of Understanding "Implementation of the current reporting and review requirements under the Kyoto protocol and the UNFCCC and preparation for fulfillment of future monitoring, reporting and verification (MRV) requirements". Delivered annually in July (inventory report) and December (review) (2019). Outputs: Contribution to the EU GHG inventory. Assisting the review.	01/08/2019	Science-for-policy reports
													20193	Research on agriculture - climate change modelling	Research on improving the modelling of climate change impacts on crops and adaptation options. Analysis of co-occurring stress factors for global crop yields and linking to economic indicators. Testing of modelling assumptions, improving consistent bias correction, including for ozone and nutrients. Systematic testing of the impact of adaptation options on crop yields.	24/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
701 - NC-Forest JRC.D.1	1000 - IFORCE International Forest Resources and Carbon Emissions	In the context of the European Union's fight against global warming, IFORCE will continue to develop methods to benchmark the monitoring of forest resources and carbon emissions, with a focus on tropical regions and Europe. Assessments will be carried out to allow for an improved understanding of how forest resources can support the (often competing) demands for economic and ecological services, especially when confronted with increasing threats, such as climate change. IFORCE will further develop reference methods for the assessment of forest cover changes in tropical regions from Earth Observation data. IFORCE will continue to focus on forest degradation and look at forest regrowth issues with international and national institutional partners, such as UN-FAO and CIFOR, and national forest inventory or REDD services from a number of countries or regions including Brazil, Colombia, Central and Eastern Africa, and continental Southeast Asia. New analysis module will be developed to allow the estimation of carbon emissions from disturbances in tropical forests which are needed for the implementation of REDD+ activities in the framework of the UNFCCC Paris agreement. Such methods will support the execution of ReCaREDD (AA with DEVCO aimed at capacity building in partner countries) and the development and implementation of future services of the Copernicus programme.	JRC.D.1 Frederic ACHARD	3.1.1.b	CLIMA	JRC	Mr Peter WEHRHEIM, HoU CLIMA.A.2	DEVCO ENV GROW	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) COMIFAC - Commission des Forêts d'Afrique Centrale (COMIFAC) Forest commission of central africa EEA - European Environment Agency	01/01/2014 31/12/2018	INS-RS	201801	Information on tropical forest resources & Ad hoc scientific support to customer DGs	Easily accessible database of up-to-date information (measurements) on forest coverage, deforestation, forest degradation, historical trends and the impact of human activities on forests, at different geographical and time scales in the Tropics with related technical reports or scientific publications. Ad hoc scientific support to DG CLIMA through an MoU on the monitoring of carbon emissions from tropical deforestation in relation to REDD+, including participation in expert meetings. Ad hoc scientific support to DG GROW through an MoU with DG GROW on the European forest and global land mapping component of Copernicus services, including contributions to technical specifications or tender evaluations.	31/12/2018	Scientific information systems and databases
												201802	Methods to measure forest degradation & emissions	Scientific publications or technical reports related to the development of reference methods for the assessment of forest cover changes (with a focus on forest degradation and forest regrowth) and the estimation of carbon emissions and sinks from tropical forest' cover changes in tropical regions (focus on Brazil, Colombia, Eastern Africa, continental Southeast Asia) .	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
442 - AGFORCC JRC.D.5	3763 - LULUCF+ Land Use, Land Use Change, Forestry and Climate	Within the AGFORCC project's aim to support client DGs in understanding how forests mitigate and interact with climate change in the context of EU and international climate policies, the LULUCF+ WPK contributes to two JRC Key Orientations: (1) 3.1.1.a (Delivering GHG emissions reductions), through scientific and technical support to DG CLIMA and Member States (MSs) on the monitoring, reporting and verification of emissions/removals from the Land Use, Land-Use Change and Forestry (LULUCF) sector, and by supporting the integrated modelling of forest carbon dynamics at MS level. (2) 3.1.1.b (Earth system science), through the quantification of recent, current and future land-climate interactions, supporting the development of forward-looking climate policies based on comprehensive evidence; to this end, the project assesses how the climate influences the temporal trends of the land-carbon budget at continental and global scales, and the combined (biogeochemical and biophysical) impact of land-use change on climate.	JRC.D.1 Giacomo GRASSI	3.1.1.b	CLIMA	JRC	DG Climate Action, Unit A2 "Climate finance and deforestation" Peter Wehrheim	EEA - European Environment Agency IPCC - Intergovernmental Panel on Climate Change UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2017 31/12/2019	INS-RS	1	Support to monitoring and design of LULUCF policies 2018	a) LULUCF GHG inventory: fulfilment of the EU reporting obligations for the LULUCF sector, as part of the EU GHG Monitoring Mechanism (Regulation 525/2013), including check MS' GHG inventories, writing the LULUCF chapter of the EU National Inventory Report, participation in the UNFCCC expert review process and scientific publications on LULUCF and forest-and-climate issues b) Support DG CLIMA in the design and implementation of LULUCF-related policies: - at EU level: reports, datasets and presentations on the implementation of decision 529/2013 (including emissions from agriculture soils) and on the legislative proposal for including LULUCF in the EU's GHG targets for 2030. - at UNFCCC level: datasets (e.g. LULUCF in INDCs and the EDGAR database), reports and presentations.	30/12/2018	JRC contributions to policy documents	
											2	Assessment of land-based mitigation options (2018)	Assessment of land-based mitigation options based on the combination of the biogeochemical effects (exchange of greenhouse gases) and of biophysical effects (changes in albedo, evapotranspiration, etc.). Integration of experimental evidence and model simulations to provide a global quantification of mitigation potentials and to develop methodologies for the monitoring/reporting/verification (MRV) of the net climate effects of LULUCF.	30/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
											3	Support to monitoring and design of LULUCF policies 2019	a) LULUCF GHG inventory: fulfilment of the EU reporting obligations for the LULUCF sector, as part of the EU GHG Monitoring Mechanism (Regulation 525/2013), including check MS' GHG inventories, writing the LULUCF chapter of the EU National Inventory Report, participation in the UNFCCC expert review process and scientific publications on LULUCF and forest-and-climate issues b) Support DG CLIMA in the design and implementation of LULUCF-related policies: - at EU level: reports, datasets and presentations on the implementation of decision 529/2013 (including emissions from agriculture soils) and on the legislative proposal for including LULUCF in the EU's GHG targets for 2030. - at UNFCCC level: datasets (e.g. LULUCF in INDCs and the EDGAR database), reports and presentations.	30/12/2019	JRC contributions to policy documents	
											4	Assessment of land-based mitigation options (2019)	Assessment of land-based mitigation options based on the combination of the biogeochemical effects (exchange of greenhouse gases) and of biophysical effects (changes in albedo, evapotranspiration, etc.). Integration of experimental evidence and model simulations to provide a global quantification of mitigation potentials and to develop methodologies for the monitoring/reporting/verification (MRV) of the net climate effects of LULUCF.	30/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
442 - AGFORCC JRC.D.5	3887 - LULUCF EU-PA Support for including LULUCF in the 2030 EU framework and implementing the Paris Agreement	AA expected to start in November 2016, and last 30 months. Tasks: 1)Further improvement of the quality of GHG inventories, through the support of: (a) LULUCF-relevant data collection and processing work-streams, and (b) Implementation of Decision 529/2013. 2)Follow-up of the legislative proposal for including LULUCF in 2030 EU climate framework, through facilitating and supporting any technical discussions arising with relevant stakeholders, in particular in relation to the determination of forest reference levels for the period 2021-2025. 3)Supporting the definition of relevant technical processes under the Paris Agreement (i.e. related to countries' NDCs, to the framework for transparency of actions, and to the 2018 facilitative stock-take dialogue) and continuing analysis on the expected mitigation by LULUCF at global level, with a view to the long term goal of achieving "balanced" anthropogenic emissions and removals globally, post 2050.	JRC.D.1 Giacomo GRASSI	3.1.1.b	CLIMA	CLIMA	DG Climate Action, Head of Unit C3, Land Use and Finance for Innovation, Peter Wehrheim		01/11/2016 30/04/2019	CON-AA	1	Final report	Final report on the three tasks: (i) Improving quality LULUCF GHG inventory; (ii) Follow-up of the legislative proposal for including LULUCF in 2030 EU climate framework; (iii) Supporting the definition of relevant technical processes under the Paris Agreement.	30/04/2019	JRC contributions to policy documents	
4855 - GHG-MoVe JRC.C.5	4872 - BoTop Bottom-up emission inventories and Top-down monitoring with measurements and modelling	BoTop establishes greenhouse gas (GHG) emissions trends based on emission inventories, atmospheric flux & concentration measurements and their linkage based on inverse modelling. It relies on the JRC/EDGAR database for emission inventories of greenhouse gases and air pollutants consistently estimated for all world countries with international statistics and on the competences at the JRC/ABC-IS station in Ispra and the San Rossore station, both of the latter aiming at being part of the GHG monitoring network of the Integrated Carbon Observatory System - Research Infrastructure, established as a European Research Infrastructure Consortium (ICOS - ERIC). Inverse modelling with the JRC/TM5-4DVAR gives estimates of GHG emissions by combining top-down concentration measurements and the bottom-up measurements in the EDGAR database, in order to verify emissions reported under the Kyoto Protocol. This is also in line with the Copernicus Programme and of use for the Paris Agreement on GHG monitoring/verification. In addition the EDGAR database estimates also the air pollutant emissions for all world regions, which serves the UNECE Convention of Long-Range Transport of Air Pollution, the Gothenburg Protocol to abate acidification, eutrophication and ground-level ozone, the Stockholm Convention on Persistent Organic Pollutants and the Minamata Convention on Mercury. A special outcome of BoTop is the science for policy report on Methane, which demonstrates on the one hand the GHG verification under the Paris Agreement for DG CLIMA and on the other the hemispheric transport of air pollution under the Convention of Long-Range Transport of Air Pollution for DG ENV.	JRC.C.5 Carsten GRUENING	3.1.1.b	CLIMA	JRC	BERGMAN Hans (CLIMA.C.2), VAN IERLAND Willem (CLIMA.C.1), PINTY Bernard (GROW.I.2), ZUNKER Hugo (GROW.I.2), ENV.D.1	ENER ENV GROW	- United Nations Environment Programme- Switzerland ICOS - Integrated Carbon Observation System, European Infrastructure IEA - International Energy Agency UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2017 31/12/2019	INS-RS	201803	Independent datasets for monitoring GHGs	1) As monitoring stations of the Integrated Carbon Observatory System – Research Infrastructure (ICOS-RI) with an Atmospheric Station in Ispra and an Ecosystem Station in San Rossore, we deliver both Near-Real Time and annual fully QA/QC checked datasets making them accessible to international partners through the ICOS Carbon Portal. 2) As part of the EDGAR database, we release datasets on the JRC data-portal with full meta-data files as documentation and links to our website with full description. 3) We contribute to DGs CLIMA, ENV and GROW with independent data supply including inverse modelling datasets (e.g. used for the COPERNICUS-CAMS and for the fitness-for-purpose checks of the COPERNICUS-CS, testbed of gridmaps for ESA)	30/11/2018	Scientific information systems and databases
												201804	Recent Trends in Global CH4	An analysis of Methane trends with: 1) the bottom-up calculated CH4 emissions globally and discussion of the uncertainties in a broader perspective (based on EDGARv4.3.2 FT2017), 2) comparison with observed trends of atmospheric measurements, 3) zoom on some areas with emerging activities, and potential mitigation. This report is of direct interest to the policymakers of DG CLIMA and of DG ENV and will be presented at the Climate Change Committee Working Group 1 of DG CLIMA as well as the Task Force on Hemispheric Transport of Air Pollution.	31/07/2018	Science-for-policy reports
												201806	Comprehensive extension of the Bottom-Up inventories	Extension of EDGAR with with LULUCF dataset using satellite data (completion of the EDGAR-LULUCF dataset with CO2 from sources and sinks from land-use, land-use change and forestry)	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201903	Independent datasets for monitoring GHGs	1) As monitoring stations of the Integrated Carbon Observatory System – Research Infrastructure (ICOS-RI) with an Atmospheric Station in Ispra and an Ecosystem Station in San Rossore, we deliver both Near-Real Time and annual fully QA/QC checked datasets making them accessible to international partners through the ICOS Carbon Portal. 2) As part of the EDGAR database, we release datasets on the JRC data portal with full meta-data files as documentation and links to our website with full description. 3) We contribute to DG CLIMA, DG ENV and DG GROW with independent data supply including inverse modelling datasets (e.g. used for the COPERNICUS-CAMS and COPERNICUS-CS)	30/11/2019	Scientific information systems and databases
												201904	Trends in Global CO2 Emissions	1) Evaluation of the 2017-2018 CO2 emission trends with the 2019 CO2 report in the report series of JRC-PBL; 2) Evaluation of global budgets in preparation of the global stock-take of UNFCCC; 3) Extension of EDGAR time series to 2018 (current year -1) for CO2 and non-CO2 GHGs, and release of new data with documentation); Update of EDGAR using satellite data.	25/10/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												201905	Regional GHG estimates bottom-up & top down	1) Scientific analyses of regional greenhouse gas emissions and their trends with (a) EDGAR emission time series and grid maps, (b) GHG measurements at the ABC-IS and San Rossore monitoring stations, (c) inverse modelling of CH4 and N2O, 2) analyzing the consistency between EDGAR bottom-up emissions inventories (grid maps) and top-down emission estimates using atmospheric concentration measurements at the regional scale (North Italy).	30/09/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201906	Uncertainty assessment in Bottom-Up inventories	1) Uncertainty assessments of the emissions inventories and their trends and gridmaps; 2) Documentation of the EDGARv4.3.2 extension;	30/11/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4855 - GHG-MoVe JRC.C.5	4873 - VERIFY PLANNED: Towards a robust and comprehensive Greenhouse Gas Verification System	VERIFY aims to improve the ability to monitor and verify GHG emissions under an international climate agreement by significantly decreasing current uncertainties associated with greenhouse gas emission estimates. In support to EU climate policies GVS provides reliable information on GHG in Europe over appropriate spatial and temporal scales. The final goal is to facilitate the development of an operationalised GHG monitoring, reporting and independent verification system.	JRC.C.5 Peter BERGAMASCHI	3.1.1.b	GROW	RTD	B. Pinty (GROW) H. Zunker (GROW) H. Bergman (CLIMA) T. van Ierland (CLIMA)	CLIMA ENER ENV RTD	- EUROPEAN SPACE AGENCY IPCC - Intergovernmental Panel on Climate Change UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/12/2017 30/11/2021	CON-IA	201801	Bottom-up GHG fluxes	first version of input data sets for bottom-up GHG fluxes - first version of CH4 and N2O fluxes from anthropogenic sources from bottom-up models (in preparation of VERIFY deliverable D4.1) - soil property and soil erosion datasets - cropland management data - nitrogen deposition data	30/11/2018	Scientific information systems and databases
												201901	High resolution CH4 inverse modeling setup	1) Technical development of the inverse modeling system to cope with the high spatial resolution, 2) preparation of the input, 3) first simulations to check the setup. (in collaboration with external partner EMPA)	30/11/2019	Scientific information systems and databases
												201903	Bottom-up GHG fluxes	First CH4 and N2O fluxes from anthropogenic sources from bottom-up models (VERIFY D4.1)	30/11/2019	Scientific information systems and databases
												202001	Prototype of an international GHG monitoring and verification system	- Fact sheet of observation-based EU budget and inventory (VERIFY D6.1) - List of best practices to be used to improve inventories in EU countries (VERIFY D6.2) - Report (Fact sheet) on the observation-based GHG budgets and inventory to USA (VERIFY D6.3)	30/11/2020	Validated methods, Reference methods and measurements
												202002	Bottom-up GHG fluxes	Second CH4 and N2O fluxes from anthropogenic sources from bottom-up models (VERIFY D4.2)	30/11/2020	Scientific information systems and databases
												202101	Prototype of an international GHG monitoring and verification system	- Knowledge transfer workshop with US, China, Indonesia (VERIFY D6.6) - workshop illustrating the GHG verification internationally based on example outside Europe (VERIFY D6.7) - Online update of national emission inventory and observation-based GHG budget trends and NDC mitigation target (VERIFY D6.12)	30/11/2021	Validated methods, Reference methods and measurements
												202102	Bottom-up GHG fluxes	Third CH4 and N2O fluxes from anthropogenic sources from bottom-up models (VERIFY D4.3)	30/11/2021	Scientific information systems and databases
702 - NC-Soil JRC.D.3	5037 - S4CC Soil for climate change	Soil is a massive carbon sink, storing three times as much as the atmosphere (particularly in peatlands). While a detailed knowledge base on soil organic carbon (SOC) stocks and dynamics across the European Union is lacking, it is well understood that land use, management practices and degradation processes at a local level have a direct impact on carbon fluxes, thus reducing flexibility elsewhere for meeting carbon budget targets. This WP evaluates and models SOC dynamics for current land covers/uses driven by policies such as the CAP, the 2030 Climate & Energy framework, the outcomes of the Paris Agreement, the EU Soil Thematic Strategy, together with global initiatives such as the '4 pour mille', SDG targets and the UN Convention to Combat Desertification. Particular attention will be paid to assessing the status of EU and global SOC stocks and changes following land conversion, especially within cropland and grasslands, and to evaluate the effectiveness of potential mitigation measures. The scope of the WPK also has relevance to other Commission services – for example, loss of organic matter is a key issue addressed by the EU Soil Thematic Strategy, while	JRC.D.3 Arwyn JONES	3.1.1.b	CLIMA	JRC	Simon KAY	AGRI ENER ENV ESTAT	UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2017 30/12/2020	INS-RS	201801	Soil organic carbon interaction with land use and management	Land use and management interact with soil organic carbon stocks and affect e.g. CO2 removals or emissions. The work focuses on the effect of climatic variability, land conversion and agricultural practices on soil carbon stocks and GHG emissions. This deliverable will model and analyse SOC dynamics in relation to the 2030 Climate and Energy Strategy, GHG emissions under the UNFCCC, Kyoto Protocol Paris Agreement and in support of the "4pour1000" initiative and collaboration with partners such as INRA and FACEE.	31/12/2018	Science-for-policy reports
												201902	LUCAS SOIL for climate change	This deliverable will use the integration between LUCAS soil data and a biochemistry model to quantify C fluxes across agroecosystems. In particular, LUCAS data and proprieties changes (2009-2015 sampling) will be assimilated in a data-model framework, in order to assess both soil CO2 and N2O fluxes. In this way, the full climate mitigation capacity of different cropping systems and alternative mitigating practices will be evaluated.	31/10/2019	Science-for-policy reports
702 - NC-Soil JRC.D.3	5840 - CIRCASA Coordination of international research cooperation on soil carbon sequestration in agriculture	Soil is a massive carbon sink, storing three times as much as the atmosphere (particularly in peatlands). While a detailed knowledge base on soil organic carbon (SOC) stocks and dynamics across the European Union is lacking, it is well understood that land use, management practices and degradation processes at a local level have a direct impact on carbon fluxes, thus reducing flexibility elsewhere for meeting carbon budget targets. The WPK addresses the role of soil organic matter in the three-fold challenge of food and nutritional security, adaptation of food systems to climate change, and mitigation of human-induced emissions. It supports the fourth pillar of the climate agreement negotiated at COP21 (Lima-Paris Agenda), which investigates the feasibility of reaching a mean global carbon sequestration of 0.4% of agricultural soil C-stocks (4 per 1000 initiative). It aims at strengthening the international research community on agricultural soils to give support the development of a strategic research agenda on the role of soil carbon for climate change adaptation and mitigation and for demands of increased food production, in the context of the UN Sustainable	JRC.D.3 Luca MONTANARELLA	3.1.1.b	CLIMA	RTD	Simon KAY	AGRI ENER ENV ESTAT		01/01/2018 31/12/2020	CON-IA	202005	IRC Work Programme Report	International Research Consortium (IRC) Work Programme Report presenting recommendations for the set-up of an IRC on soil carbon sequestration in agriculture.	31/12/2020	JRC technical reports
241 - KM-EnU JRC.C.7	6510 - EGARP Emissions Database for Global Atmospheric Research and Policy making	The Emissions Database for Global Atmospheric Research (EDGAR) supports policy making in the area of energy with in-house independent datasets on emissions of energy-related activities, because the Energy Union is a priority of the Commission. In order to monitor the implementation of directives on emissions, the Commission needs to rely on up-to-date and reliable data and information. The EDGAR database develops emissions time-series and gridmaps of Greenhouse Gases, Air Pollutants, Particulate Matter, Hg and Persistent Organic Pollutants, which are consistently calculated for all world countries. As such the EDGAR database is a unique tool to assess emission trends and drivers with robust statistical methods, also at detailed sector-specific level (different types of industries). The final datasets are residing on the JRC Data portal, and documented with metadata files and papers, such that it is publicly available and promoted via the JRC. The framework and experience to compile emissions inventories is shared and compared within the internal emissions community of the Global Emissions Initiative (GEI). In addition, EDGAR is contributing to the IPCC Task Force Bureau, compiling a refinement of the guidelines for the GHG emission inventories. Moreover, EDGAR reaches out to developing regions with training support and knowledge databases to also visualize emissions hot spots. The EGARP WPK collaborates with the WPK Data EnU by developing links to the common platforms and tools for the collection, depository, access and use of data and information related to energy. It will make existing data, information available to the respective users which may range from JRC experts, the international scientific community and to policy makers.	JRC.C.5 Marilena MUNTEAN	3.1.1.b	CLIMA	JRC	n/a	DEVCO ENER ENV GROW RTD	- EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS - European Space Research and Technology Centre EMEP - European Monitoring and Evaluation Programme UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/01/2018 31/12/2020	INS-RS	2018d1	Update and extension of the EDGAR database	1) Extension of the EDGAR database with temporal profiles at hourly resolution; 2) Update of the EDGAR database with new spatial population density proxy data using the JRC human settlements map; 3) Extension of the EDGAR/EOLO platform with a routine for a fast-track update of the greenhouse gas time-series; 4) update of the F-gas emissions	31/10/2018	Scientific information systems and databases
												2018s2	User engagement and EDGAR service to other applications	1) Contribution to the updates of the Raw Materials Scoreboard: WPK Raw Materials - support to the European Innovation Partnership on Raw Materials (4303) and of the Raw Materials Information System (3818). 2) Contribution to the carbon intensity maps of the Energy Union data and to the carbon capture and storage maps (WPK 3869); 3) Contribution to the Connectivity WPK (WPK 3577) with EDGAR data for the identified regions (Danube) and the ARCTIC project	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2019d1	Data repository of the EDGAR database with continuous update	1) Extension of the EDGAR database with probability functions on the temporal profiles; 2) Extension of the EDGAR database with new uncertainty grid-maps accounting for the uncertainty of the spatial distribution; 3) Extension of the EDGAR/EOLO platform with a routine for a fast-track update of the air pollutant time-series; 4) Extension of the database with the emissions of Persistent Organic Pollutants	30/11/2019	Scientific information systems and databases
												2019s2	Documentation of the inventory compilation and trend analysis	1) Contribution to counterfactual analysis of climate and fuel efficiency policies using robust statistics (vector-auto-regression in collaboration with 1.1); 2) Contribution to the 2019 Refinement of the IPCC GHG emission inventory guidelines.	30/11/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
3.1.1.c vehicle emissions - provide technical support to the 2018 mobility packages for implementing and developing policy measures to decarbonise the transport sector; specifically, support the further development of the CO2 certification procedures for light and heavy-duty vehicles, including effective market surveillance mechanisms such as in-service conformity testing; analyse real-world fuel consumption and CO2 emissions of light- and heavy-duty road																
209 - LoCarMo JRC.C.4	3182 - ECOCHAMPS European Competitiveness in Commercial Hybrid and Automotive Powertrains	The overall objective of the ECOCHAMPS project is to develop the knowhow, intellectual property rights and technical capabilities to adequately and cost-effectively achieve efficient, compact, low weight and robust hybrid powertrains for light and heavy duty road vehicles. The role of the JRC is to supervise the work and monitoring the progress of the vehicle manufacturers involved in the project to develop new and more efficient powertrain systems	JRC.C.4 Giorgio MARTINI	3.1.1.c	CLIMA	RTD	Christophe PAVRET DE LA ROCHEFORDIERE	GROW	Manufacturers Association CLEPA - European Association of Automotive Suppliers EUCAR - European Council for Automotive R&D (EUCAR)	01/05/2015 30/04/2018	CON-IA	3	Final report of the project	The report will summarize the main technical outcomes resulting from the activities carried out in the project	27/04/2018	JRC technical reports
209 - LoCarMo JRC.C.4	3325 - Smart Mobility Innovation Analysis and Tools	The "Smart Mobility Technology Innovation Analysis and Tools" WPK covers tools, assessments and scenario analyses that will be instrumental for conceiving future CO2 transport policy initiatives and their implementation. Activities carried out in this WPK mainly cover: 1) Future architectures of hybrid/electrified vehicles and their impact on fuel consumption and CO2 emissions, 2) Characterization of the "gap" between type-approval and in-use fuel consumption and CO2 emissions and identification of possible strategies to deal with it (see for example: First Scientific Opinion of the SAM HLG (Nov. 2016): "Closing the gap"), 3) Identify role of additional GHG pollutants (e.g. N2O and CH4) and build policy recommendations considering whether or not they should be included in future policies concerning CO2 from vehicles, 4) Maintain the on-line Green-Driving Tool (<a 437="" 557="" 978="" 988"="" data-label="Page-Footer" href="https://green-</td> <td>JRC.C.4 BIAGIO CIUFFO</td> <td>3.1.1.c</td> <td>CLIMA</td> <td>JRC</td> <td>Edoardo Turano</td> <td>EPSC GROW MOVE</td> <td></td> <td>01/01/2016 31/12/2020</td> <td>INS-RS</td> <td>5</td> <td>Decarbonising goods road transport</td> <td>Report on scenarios of goods road transport decarbonisation in support to appropriate CO2 reduction targets.</td> <td>31/12/2018</td> <td>Science-for-policy reports</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>8</td> <td>Updated Green Driving Tool</td> <td>Revamped Green Driving Tool with higher accuracy, improved user interface and mobile app.</td> <td>31/12/2018</td> <td>Scientific information systems and databases</td> </tr> </tbody> </table> </div> <div data-bbox=">Page 46 of 119Page 46 of 119Page 46 of 119Page 46 of 119														

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
		driving.jrc.ec.europa.eu) using state-of-the-art vehicle simulation models but sufficiently communicative to raise awareness among citizens on the different factors affecting fuel consumption and CO2. 5) Linking fleet impact models (DIONE) to a simplified source receptor model (SHERPA) to assess air quality impacts of transport activities on the environment.										9	Real life CO2 impacts of electrified vehicles	Report analysing on road CO2 reduction from electrified vehicles.	30/12/2019	Science-for-policy reports	
209 - LoCarMo JRC.C.4	3471 - CO2 SUPPORT Supporting DG CLIMA in policy development and implementation of CO2 from	With this Work-Package, the JRC provides support to DG CLIMA for the implementation and development of policy measures addressing short and long term objectives on CO2 emissions from the road transport.	JRC.C.4 GEORGIOS FONTARAS	3.1.1.c	CLIMA	CLIMA	Cosmin Codrea, Susanna Lindvall	ENV GROW	ACEA - European Automobile Manufacturers Association CLEPA - European Association of Automotive Suppliers	01/08/2015 31/07/2018	CON-AA	3	Administrative Arrangement Final Report	Final report on the work carried out on to support DG Clima in the framwork of the AA 2015-2018	20/07/2018	Science-for-policy reports	
209 - LoCarMo JRC.C.4	6432 - CO2En E&I Training on the European tools to regulate CO2 from Road Transport	During the last 10 years the JRC has been supporting DG CLIMA in the conception, formulation and implementation of EU policies concerning the reduction of CO2 emissions from road transport. The support has involved several activities ranging from the development of software tools and models, to providing technical and statistical support, to performing physical vehicle tests, to assisting in the management of on-going studies and reviewing communications and reports. More in particular the JRC is responsible for: i) the implementation of the "Eco-Innovation" Scheme (set by EU Regulations 443/2009 and 510/2011), b) the development and management of the vehicle simulator VECTO that will be used, as of 2018, for the certification of CO2 emissions from Heavy Duty Vehicles (HDVs) in Europe, c) the development and management of CO2MPAS, that will be used, as of September 2017, in the certification of CO2 emissions from Light-Duty Vehicles (LDVs), and d) the development and management of Green Driving, a web-portal that allows drivers to select the most fuel/energy efficient technology for their vehicle and to improve their driving behaviour to save fuel. The tools developed by the JRC serve the political objective of the European Commission but their use is not limited to the implementation of European Legislations. The JRC intends to give the maximum visibility to the developed tools in order for them to be used for other legislative purposes. For example, the present WPk aims at supporting the Governance of the Energy Union by supporting the assessment and review of the projections on CO2 reductions due to the introduction of alternative fuels/more efficient vehicles. It also provides benchmarking evidence at EU level to track performance, progress and potential benefits with respect to the uptake of energy-efficient fuel production and powertrain configurations organised per technology. The precise scope of the activities will be defined in close collaboration with ENER and CLIMA, as well as other relevant DGs. The activities in this Wpk will draw from the JRC's substantial knowledge on the assessment of the CO2 reduction potential of new vehicle technologies and the associated costs. JRC has developed different software solutions for modelling the fuel consumption and CO2 emissions from Light and	JRC.C.4 BIAGIO CIUFFO	3.1.1.c	CLIMA	JRC	n/a	ENV GROW	ACEA - European Automobile Manufacturers Association CLEPA - European Association of Automotive Suppliers EUCAR - European Council for Automotive R&D (EUCAR)	01/01/2018 31/12/2018	INS-E&IA	1	E&I Workshop on the EU tools to regulate CO2 emissions from transport	The two-day workshop has the objectives to update participants on the new policy direction of the European Commission concerning the reduction of CO2 emissions from road transport and to present in details the tools developed by the JRC on this subject. We expect to receive feedback on the use of the tool and on possible additional applications they may have in other contexts. The Target audience is composed by researchers in automotive/energy/mechanical/electric engineering and by employees of Transport/Industry Ministries from the E&I countries. The two-day workshop will be structured in frontal lessons and practicum sessions	31/10/2018	Training	
7670 - GOV-EU JRC.C.7	6563 - TRA-DECA Transport decarbonisation	The aim of this WP is to assess the environmental sustainability, technological development and costs of GHG savings for a range of biofuels, other renewable fuels and bioenergy pathways expected to be relevant in the post-2020 timeframe. The assessment will be carried out following an attributional life-cycle analysis perspective, expanded to include non-energy uses of the biomass, land use, economic and technological performances. The work package contributes to the horizontal activity "BIOECONOMY" (WP2300). Using the results of the modelling framework set in that context, this WP will provide an environmental impact assessment of complex and large scale policy scenarios. It also contributes to the assessment of technology implementation in the framework of existing Administrative Agreements (NER300 and Low Carbon Energy Observatory), and the implementation of the Integrated SET-Plan. This WP supports the development of new policy for sustainable bioenergy and revision of existing legislation (RED-recast).	JRC.C.4 Laura LONZA	3.1.1.c	ENER	JRC	n/a	CLIMA MOVE		01/01/2018 31/12/2019	INS-RS	1	Energy efficiency in transport	Support to the preparation of the Assessment Framework in the field of transport decarbonisation and energy efficiency in transport	31/12/2018	JRC contributions to policy documents	
3.1.1.d alternative fuels for transport - assess the environmental sustainability, technological development and costs of bioenergy and biofuels and associated savings on GHG and pollutant emissions, including 'well-to-wheel' analyses and support for alternative fuels legislation; support the Commission's work on alternative fuels for aviation.																	
195 - ALFI JRC.C.4	678 - SUS-AL Sustainability of alternative fuels and bioenergy	The aim of this WP is to assess the environmental sustainability, technological development and costs of GHG savings for a range of biofuels, other renewable fuels and bioenergy pathways expected to be relevant in the post-2020 timeframe. The assessment will be carried out following an attributional life-cycle analysis perspective, expanded to include non-energy uses of the biomass, land use, economic and technological performances. The work package contributes to the horizontal activity "BIOECONOMY" (WP2300). Using the results of the modelling framework set in that context, this WP will provide an environmental impact assessment of complex and large scale policy scenarios. It also contributes to the assessment of technology implementation in the framework of existing Administrative Agreements (NER300 and Low Carbon Energy Observatory), and the implementation of the Integrated SET-Plan. This WP supports the development of new policy for sustainable bioenergy and revision of existing legislation (RED-recast).	JRC.C.4 Laura LONZA	3.1.1.d	ENER	JRC	Sarah Sheridan (CLIMA C1); Ariane De Dominicis(SG D3); Bernd Kuepker (ENER C1); Ruta Baltause (ENER C1); Viviane Andre (ENV F4); RTD G3; Maria Georgiadou and Thomas Schlecker	CLIMA ENV MOVE RTD			01/01/2018 31/12/2019	INS-RS	1	Environmental sustainability	Environmental Sustainability and climate impacts of advanced biofuels and bioenergy. Assessment of environmental and climate impacts (through attributional LCA analysis) of the use of woody biomass, industrial, agricultural/ food residues and algae for energy, materials (bio-chemicals etc.) and food/feed purposes. The study includes assessment of technological development and assessment of availabilities, likely/realistic energy use pathways, and indirect effects of usage.	31/12/2018	JRC contributions to policy documents
												2	Novel low-carbon transport fuels	Evaluation of opportunities for low-carbon fuel production integrated in existing industrial processes and pathways. The report also describes methodologies for the calculation of their life-cycle GHG emissions. A list of these fuels and their default GHG emissions calculated by JRC C.4 (and delivered to DG CLIMA) is likely to be included in the recast of the Renewable Energy Directive which will enter into force in 2021.	31/12/2018	Science-for-policy reports	
												4	Scientific publications on biofuels and bioenergy	Scientific publications on the topics of: - The role of LCA in bioenergy policies - Costs of GHG savings of biofuels and bioenergy	20/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												5	Environmental impact assessment of European bioeconomy	The work takes stock of the results obtained from the modelling effort in the framework of the BIOMASS project of the JRC. Various techno-economic models within JRC are coupled to obtain an integrated framework that will be used to assess the environmental impacts of several policy scenarios.	20/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												6	GHG emissions from biofuels and bioenergy pathways	Updates of calculation of default GHG emissions from biofuels and bioenergy pathways included in Commission's proposal COM(2016)767 on the promotion of the use of energy from renewable sources (RED-recast). As requested by DG ENERGY, the update is necessary to reflect scientific and technical progresses, new data availability, consultation with stakeholders, outcomes of on-going decision process for the approval of the new RED-recast, to enter into force in 2021. This work is in partly covered by Administrative Agreement with DG ENER (WPXXX).	31/12/2019	Science-for-policy reports	
												7	LCA of alternative fuels	To provide ad-hoc support to DG CLIMA in particular on the following topics of relevance for the Fuel quality Directive (FQD) and for the update of the Renewable energy Directive (RED-recast): - LCA of fuels, in particular CCU fuels and low-carbon H2. - support for the update of GHG intensity of electricity in different Member States for consistency of reporting of electricity supplied to transport in different MS and as input for production of CCU fuels and green hydrogen - support for the update of the fuel baseline taking into account the reports that will come in as of 2018 - contribution to the definition of methodology for the calculation of GHG emissions for waste based fossil fuels and renewable fuels of non-biological origin in the new RED-recast Directive (contribution of relevance also for DG ENER).	30/06/2019	JRC contributions to policy documents	
195 - ALFI JRC.C.4	3560 - WTW Well-to-Wheels (WTW) Analysis for Reference Vehicles and European Fleet	WTW assesses the energy and greenhouse gas (GHG) balance for the fuels/energy carriers suitable for road transport powertrains, comprising and integrating the fuel production pathway (Well-to-Tank, WTT) and the powertrain configuration and efficiency (Tank-to-Wheels, TTW). It consists of: - Cost analysis with a view to estimate the cost of substituting conventional fossil fuels (as baseline) with an alternative. TTW costs are based on a price differential based on techno-economic analysis - Life-cycle assessment on materials cycles is performed for selected pathways (specifically: electromobility) - Analysis of heavy-duty vehicles is included - Scenario analysis and associated impacts on regulatory mandates for the uptake of alternative fuels in the transportation sector at time horizon [2020 and] 2030 - Assessment of supply projections of fuel alternatives at European and global scales WP 3560 is deployed jointly with EUCAR and CONCAWE, consulting stakeholders' associations as relevant.	JRC.C.4 Laura LONZA	3.1.1.d	CLIMA	JRC	Alexandre PAQUOT (CLIMA.C.4); Daniela ROSCA (MOVE.C.1); Keir FITCH (MOVE.C.2); Liam BRESLIN (RTD.C.2)	ENER GROW MOVE RTD	ANL - Argonne National Laboratory CONCAWE - Conservation of Clean Air and Water in Europe EUCAR - European Council for Automotive R&D (EUCAR)	01/01/2018 31/12/2019	INS-RS	1	Well-to-Wheels (WTW) V5	WTW V5 integrates: (i) Well-to-Tank (primary energy transformation to fuel production), and (ii) Tank-to-Wheels analysis (in-use fuel efficiency/GHG emissions) for each fuel/energy carrier-vehicle combinations. The overall impact of fuel and vehicle choices can be assessed only by considering the entire pathway. WTW V5 also assesses energy efficiency/GHG reduction potential of using non-fossil energy sources in (iii) non-road modes, and (iv) non-transportation sectors.	30/06/2018	Science-for-policy reports	
												2	Well-to-Tank (WTT) V5 - COST	Analysis to estimate the cost of substituting conventional fossil fuels with an alternative. The first step is to define a baseline for conventional gasoline and diesel fuel and other fossil fuel. Crude oil price is the primary input, determining the general level of energy prices. The cost assessment is made at two time horizons: 2015 and 2025 via scenario analysis	30/06/2018	Science-for-policy reports	
												3	Well-to-Wheels (WTW) V5 - LCA	LCA approach applied to selected pathways (e.g. electro-mobility pathways) accounting for the energy efficiency and GHG emissions of relevant materials cycles. This activity is carried out in close collaboration with US ANL GREET.	30/06/2018	Science-for-policy reports	
												4	Well-to-Wheels (WTW) EU-US	Comparative analysis of WTW reference exercises in Europe and US. The joint work will result into (i) draft report by 31/12/2016, (ii) final report by 30/06/2017	31/07/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												5	Fleet&Fuels (F&F) 2020 Revision+2030 New Scenarios	Assess the impact of recent (2015) EU regulatory developments have the potential of changing important aspects of the RED and FQD and the resulting market responses. (31/12/2016) EU regulatory framework and 2030 targets: provision of robust scientific impact assessment of conventional and alternative transportation fuel demand and supply scenarios. (30/06/2018) Road transport demand and supply is primarily considered; other transport modes are also assessed.	30/06/2018	Science-for-policy reports
												6	EU Electricity Mix	Discussion on data and calculation of EU electricity mix	31/05/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
195 - ALFI JRC.C.4	6316 - DEF-VALUES 3 GHG savings of biofuels and bioenergy	This workpackage provides technical assistance to DG ENER on the implementation of the relevant provisions of the Directive 2009/28/EU on the promotion of renewable energy from renewable energy sources, particularly as regards the requirements regarding the greenhouse gas emissions of biofuels and bioliquids. Moreover, it will also provide support to the development of the new legislative framework for the new Renewable Energy Directive (RED-recast) following the adoption of the Commission's legislative proposal COM(2016)767, which contains proposal for greenhouse gas emission criteria for liquid, gaseous and solid fuels from biomass, and will support negotiations of the RED-recast in area of bioenergy sustainability.	JRC.C.4 Laura LONZA	3.1.1.d	ENER	ENER	n/a	CLIMA		01/10/2017 31/03/2019	CON-AA	1	GHG emissions report	Final report detailing input data and methodologies used for the calculation of GHG emissions from biofuels and bioenergy pathways	31/03/2018	Science-for-policy reports
3.1.1.e support the operations of climate innovation funds - support the operation of the knowledge-sharing facility of the NER 300 funding programme and the management of NER 300-related communication activities and help to design and implement its successor, the Innovation Fund.																
												4	Report on RK submissions 2018	The report outlines the key lessons learnt from the assessment, and a reasoned recommendation and supporting evidence for each project considering the knowledge sharing requirements of the NER300 Decision.	27/04/2018	Science-for-policy reports
												5	Annual report 2018	Annual report consolidating: a) all L2 relevant knowledge; b) aggregated/anonymised L1 information; c) project fiches. In addition to providing a picture of the year in question, these reports shall also trace over time key tendencies and the evolution of projects and relevant knowledge gained	27/09/2018	Science-for-policy reports
												6	Report on publications & outreach activities 2018	Report summarising all public dissemination and outreach activities (presentations, meetings, events, webpostings)	28/12/2018	Science-for-policy reports
												7	Report on RK submissions 2019	The report outlines the key lessons learnt from the assessment, and a reasoned recommendation and supporting evidence for each project considering the knowledge sharing requirements	27/04/2019	Science-for-policy reports
												8	Annual report 2019	Annual report consolidating: a) all L2 relevant knowledge; b) aggregated/anonymised L1 information; c) project fiches. In addition to providing a picture of the year in question, these reports shall also trace over time key tendencies and the evolution of projects and relevant knowledge gained	27/09/2019	Science-for-policy reports
												9	Report on publications & outreach activities 2019	Report summarising all public dissemination and outreach activities (presentations, meetings, events, webpostings)	28/12/2019	Science-for-policy reports
3.1.2. Adaptation																
3.1.2.a to support the review and update of the EU adaptation strategy and to meet the objectives of the Sendai framework for disaster risk reduction and the sustainable development goals, assess the economic and non-economic impact of climate change, vulnerability, resilience, and options for adapting in the EU and globally. In collaboration with the knowledge centres on disaster risk management, on migration and demography, and on territorial																
222 - DRMKC JRC.E.1	3808 - SUCCAST Support to Climate Change Adaptation Strategy	The Paris Agreement (COP21) calls for keeping global warming well below 2C and putting more efforts into adaptation. One of the three priorities of the EU Strategy on adaptation to climate change is to promote better informed decision-making by addressing existing gaps in the knowledge on climate change impacts and adaptation. In 2017, the DG for Climate Action will report on the Adaptation Strategy adopted in 2013, aiming to put in place a reinforced Strategy in 2018. In view of the post-Paris challenges and EU milestones, the ADAPTATION Project aims to increase the knowledge base on climate risk assessment, adaptation, vulnerability and resilience. To this end the project will: •Support the revision and development of a reinforced Adaptation strategy •by generating single and multi-hazard risk scenarios – comprising social, economic and environmental impacts – in view of global change; •by appraising adaptation strategies for increasing the resilience of European societies to extreme weather and climate events. •Support EU policies on disaster risk reduction •by integrating disaster risk reduction/management and climate change adaptation to ensure synergy and full coordination with the disaster risk management policies that the EU and the Member States are developing.	JRC.E.1 Paulo BARBOSA FERREIRA	3.1.2.a	CLIMA	JRC	BEATRIZ YORDI AGUIRRE	DEVCO ECHO ENV REGIO	EEA - European Environment Agency EEAS - European External Action Service IPCC - Intergovernmental Panel on Climate Change UN FCCC - UN Framework Convention on Climate Change (UN-FCCC) UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR)	01/01/2016 31/12/2019	INS-RS	201804	Assessing risks of multiple climate hazards and evaluation of adaptation options	The work involves assessing the risks of multiple climate hazards for different regions of the world. This involves the following specific activities: - evaluation of dynamics in multiple climate hazards in view of climate change at global scale and for specific regions (e.g., Europe, Africa); - development of global and regional exposure layers for global hazard impact analysis; - appraising present and future vulnerability of society to different climate hazards; - integrating hazard, exposure and vulnerability information to generate risk scenarios across different regions of the globe; - develop scenarios of adaptation by taking stock of the latest information in literature on the cost and effectiveness of different strategies and translate this information to derive indicative costs and benefits of adaptation.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
442 - AGFORCC JRC.D.5	4208 - C2ESAM Concurrent Climate Extremes and Shocks on global Agricultural Markets	The exploratory project (EP) C2ESAM investigates concurrent climate extremes that can occur over the most important areas of agricultural production of the world and their effects on global agricultural markets. The EP develops new approaches to characterise the spatio-temporal evolution of concurrent global climate extremes to analyse the impacts of these rare and extreme phenomena on the global agricultural markets in terms of consumption, production, trade patterns and resilience of the key (in terms of agricultural production) regions of the world. It applies a multi-model approach to estimate crop yields and a global partial agro-economic equilibrium model (Aglink-COSIMO), run stochastically, to estimate the economic impacts. Finally, C2ESAM analyses the available observations and the CMIP5 climate model simulations to assess how these extremes will change under different climate scenarios.	JRC.D.5 ANDREA TORETI	3.1.2.a	CLIMA	JRC	Peter WEHRHEIM, DG CLIMA HoU A2; Pierluigi LONDERO, DG AGRI HoU E2	AGRI DEVCO ENV TRADE	AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) EEA - European Environment Agency OECD - Organisation for Economic Co-operation and Development (OECD) UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	01/04/2016 31/03/2018	INS-ER	3	Induced shocks on the global agricultural markets	Definition of a set of key experiments with different policy strategies to assess the impacts of concurrent extremes on global agricultural markets. Development of new strategies in stochastic agro-economic modelling. Assessment of production, consumption, trade patterns in key agricultural regions of the world under extreme conditions with the partial equilibrium model Aglink-COSIMO. Analysis of the identified shocks and potential implications for stability, food security and trade agreements.	28/02/2018	Science-for-policy reports
												4	Final report and booklet for policymakers	Scientific summary of the main results of the project, highlights and open issues. Summary for policymakers of the main findings of the project.	30/06/2018	Science-for-policy reports
143 - CCE JRC.C.6	4982 - PESETA 4 Projection of biophysical and economic climate impacts in the EU based on a bottom-up analysis (PESETA 4)	Climate impacts are expected to affect Europe, requiring the design of the appropriate adaptation policies to reduce those impacts. The main purpose of this activity is to support DG CLIMA in the analysis of impacts and adaptation in the context of the review of the European Adaptation Strategy - foreseen for end 2018 - , and following the previous JRC PESETA studies (PESETA, GAP-PESETA, PESETA II and PESETA III). PESETA 4 will produce policy-relevant scenarios on biophysical and economic impacts in Europe for different levels of global warming and including other drivers of change such as land use dynamics. This study further aims to provide quantitative information on the costs and effectiveness of different adaptation options to minimize biophysical consequences and direct impacts to safeguard and secure the functioning of society. Sectors and impacts considered include on agriculture, energy, transport infrastructure, forest fires, river floods, coastal areas, water, human health, droughts and habitat suitability. Specific attention will be on the territorial distribution of future climate impacts and adaptation needs, experience and capacity across the EU. The new AA PESETA	JRC.C.6 Juan Carlos CISCAR MARTINEZ	3.1.2.a	CLIMA	CLIMA	BEATRIZ YORDI AGUIRRE	AGRI DEVCO ECHO ENV REGIO	EEA - European Environment Agency IPCC - Intergovernmental Panel on Climate Change UN FCCC - UN Framework Convention on Climate Change (UN-FCCC) UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR)	01/09/2017 28/02/2019	CON-AA	D1	Sectorial impacts and adaptation options (for the different project tasks)	Coherent scenarios of risks for different sectors and appraisal of adaptation options across Europe. It includes the biophysical impact analysis and the economic assessment.	30/12/2018	Science-for-policy reports
												D2	Final report	Synthesis of all the project results	30/12/2018	Science-for-policy reports
143 - CCE JRC.C.6	5035 - CC Impact Adaptation Climatic Change Economic Impact and Adaptation Assessment	This work package addresses the economic analysis of climate change biophysical and social impacts, providing a harmonised approach to quantify them in terms of vulnerability, value at stake, social groups at risk, damaging mechanisms and assessment of adaptation options. It is geared towards the policy priorities of DG CLIMA on adaptation, and builds on the knowledge and expertise existing inside other Commission services and/or external consultants on each specific damaging mechanism. The main mission is to quantify and integrate with a comparable economic metrics the different impacts in order to present an harmonised view on the relative importance of the different impact at stake, taking into consideration timing, discounting, and other uncertainties. Adaptation	JRC.C.6 Juan Carlos CISCAR MARTINEZ	3.1.2.a	CLIMA	JRC	n/a			01/01/2017 30/12/2020	INS-RS	2	Progress Report 2018	Technical report describing the advances in the modelling as well as maintenance and data work carried out throughout the year in order to enhance the analytical capability of the unit, mainly related to climate impact and adaptation modelling. This 'container deliverable' also includes the related scientific publications.	31/12/2018	JRC technical reports
442 - AGFORCC JRC.D.5	6062 - MedGOLD MedGOLD- Turning climate-related information into added value for traditional Mediterranean Grape, Olive and Durum wheat food systems.	MED-GOLD will demonstrate the proof-of-concept for climate services in the agriculture sector by developing case studies for three hallmarks of the Mediterranean food system: grapes, olives and durum wheat. Agriculture is primarily climate-driven and hence highly vulnerable to climate variability and change. Evidence suggests that the Mediterranean region is under immediate threat of shifting climate patterns and the associated ecological, economic and social effects. Developing a capacity to turn the increasingly big climate-related data into tailored climate services that can inform decision-making in agriculture, is therefore a priority both in Europe and worldwide. The long-term goal of this project is to make European agriculture and food systems more competitive, resilient, and efficient in the face of climate change, by using climate services to minimize climate-driven risks/costs and seize opportunities for added-value.	JRC.D.5 ANDREA TORETI	3.1.2.a	AGRI CLIMA	RTD	n/a	DEVCO SANTE		01/01/2018 31/12/2021	CON-IA	D1	Assessment of sector-specific needs and system analysis	Key vulnerabilities, information needs and critical decisions to be taken by wheat producers will be evaluated. The existing agronomic and agro-climatic modelling systems will be analysed to identify opportunities and knowledge/process gaps.	31/12/2018	JRC technical reports
												D2	Wheat-tool development	A first prototype of agro-climatic tool for the durum-wheat sector will be developed. Several approaches will be evaluated from model-based to hybrid systems. The time scales will range from seasonal to decadal and the spatial focus will be the Euro-Mediterranean region. Reproducibility and usability will be key factors in this phase.	30/11/2019	Scientific information systems and databases

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
442 - AGFORCC JRC.D.5	6742 - forest@risk Climate-driven risks and adaptation measures for European forests.	The forest@risk project contributes to the Exploratory Research (ER) Programme. European forests provide a set of fundamental services that contribute to climate mitigation and human well-being. On the other hand, forests are vulnerable systems because the long life-span of trees limits the possibility of a rapid adaptation to drastic environmental changes. Climate-driven hazards on forests, such as drought, wildfire and insect outbreaks, are expected to rise drastically in view of global warming. As a result, key forest services, such as carbon sequestration and supply of wood products, could be seriously affected in the near future. Despite the relevance and urgency of the	JRC.D.1 Alessandro CESCATTI	3.1.2.a	JRC	JRC	n/a	CLIMA ENV GROW		01/01/2018 31/12/2019	INS-ER	01	Final report of the project	The final technical report will summarize all the scientific result of forest@risk and provide a summary of the scientific papers originated from the project. A mid-term technical report will be produced at the end of year 1.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-E) or Social Science Citation Index (SSCI)
3.1.3. Climate science, research and observations																
3.1.3.a. advance our understanding of how climate change interacts with other parts of the Earth's system; in particular the vulnerability of the Arctic region to climate change and translate the findings into specific strategies for mitigation, adaptation and sustainable developments.																
4856 - ARCTIC JRC.C.5	6140 - IMOBAR Impact of Observations in the Arctic	The project will assess societal and economic benefits and co-benefits of enhancing Arctic observation systems and compare them with investment and management costs. By collecting information from past and existing EU projects and international stakeholder initiatives the benefits of existing observational systems will be evaluated for a number of Societal Benefit Areas, and future needs will be assessed. The project will deliver an evaluation of the long-term benefits of sustained investment in Arctic observations in support of regional and global decision making. This business case for further development of Arctic observations, will be presented at the 2nd Arctic Science Ministerial Meeting to be hosted by the EU in September 2018.	JRC.C.5 SRDAN DOBRICIC	3.1.3.a	RTD	RTD	n/a	CLIMA EEAS ENV MARE	AACA - Adaptation Actions for a Changing Arctic AMAP - Arctic Monitoring and Assessment Programme EEAS - European External Action Service IGAC - International Global Atmospheric Chemistry (IGAC) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UN FCCC - UN Framework	01/07/2017 31/07/2018	CON-AA	1	Impact analysis of Arctic observation systems	Matrices of Arctic observational data streams, systems and societal benefit areas from the precursor workshop report (see also deliverable 2) will be used to prioritise a quantitative evaluation of the costs and benefits of Arctic observational systems. The analysis will adapt the qualitative methodology proposed by the STPI. Due to resource and time constraints, those observations most likely to generate tangible benefits will be identified and prioritised.	01/03/2018	External study reports
												2	Impact of Arctic observational systems	The peer-reviewed report on the costs and benefits of Arctic observations integrates deliverable 1 with the consensus based mapping of key Arctic change variables for ice, land, ocean and atmospheric processes to an SBA based value tree framework. This mapping report is the outcome of a 2-day workshop organised with DG RTD by the end of Month 6, bringing together experts on observations, Arctic stakeholders including the FP/EEAS funded "EU Arctic Policy Assessment (EUAPA)", and users.	31/07/2018	Science-for-policy reports
4856 - ARCTIC JRC.C.5	6304 - ECO-ARCTIC Climate impacts and sustainable provision of ecosystem services in the Arctic	ECO-ARCTIC focuses jointly on the priority areas "Climate Change and Safeguarding the Arctic Environment" and "Sustainable development in and around the Arctic" of the joint communication "An integrated European Union policy for the Arctic". On one side the work package investigates the impacts of climate change on fragile and temperature sensitive elements of the Arctic, like the biosphere and the permafrost. Special attention is paid to potential feedbacks of ongoing changes to the climate systems as driven for instance by variations in the ecosystem greenhouse gas budget and in surface albedo. In parallel, ECO-ARCTIC investigates the ongoing and future challenges for the sustainable provision of ecosystem services in the Arctic and boreal regions exposed to accelerated warming. In this context the work-package will provide an assessment of the climate risks and related vulnerability of natural resources and primary productivity in both terrestrial and marine biomes under alternative climate scenarios. Moreover, under the remit of the panel Scientific Experts on Fish Stocks in the Central Arctic Ocean (FISCAO), and in line with the joint communication "An integrated European Union policy for the Arctic" the JRC will, as EU-Delegate, contribute to the setting of a scientific framework for the management of future fisheries in the Central Arctic Ocean and advise DG MARE on that matter.	JRC.D.1 Alessandro CESCATTI	3.1.3.a	CLIMA	JRC	n/a	ENV MARE REGIO RTD	EEAS - European External Action Service	01/01/2018 31/12/2019	INS-RS	1	Impacts of the accelerated warming of the Arctic on terrestrial ecosystems: sensitivities and risks	Assessment of recent and future impacts of the rapid warming on the provision of ecosystem services in the Arctic and Boreal regions, under a business-as-usual and a climate stabilization scenario consistent with the targets of the Paris Agreement. Key ecosystem services, like climate mitigation and biomass production, will be assessed with a combination of Earth observations and land-climate modelling. Special attention will be paid to ecosystem processes that may ultimately generate positive feedback in the climate system and therefore further accelerate the local and global warming. For this scope temporal variations in surface albedo driven by the variation in vegetation and snow cover will be quantified. In addition, the net impact of the warming on the greenhouse gas budget will be evaluated by estimating the net exchange of both CO2 and CH4 from the thawing permafrost and by the enhanced net primary production of vegetation.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												2	Arctic marine productivity from plankton to fish: tools and first estimates	Marine biological productivity at three trophic levels will be taken into consideration, analysed and documented: 1) satellite-based primary production by phytoplankton ; 2) satellite-based estimate of secondary production by zooplankton (dynamics of productive fronts) 3) for fisheries the JRC will continue its participation as EU-delegate in the meetings of Scientific Experts on Fish Stocks in the Central Arctic Ocean (FISCAO) and advise DG MARE on the setting of a scientific framework for management of future fisheries in the Central Arctic Ocean.	15/12/2018	JRC technical reports
												3	Impacts of the accelerated warming of the Arctic on terrestrial ecosystems: a comprehensive assessment	Assessment of recent and future impacts of the rapid warming on the provision of ecosystem services in the Arctic and Boreal regions, under a business-as-usual and a climate stabilization scenario consistent with the targets of the Paris Agreement. Key ecosystem services, like climate mitigation and biomass production, will be assessed with a combination of Earth observations and land-climate modelling. Special attention will be paid to ecosystem processes that may ultimately generate positive feedback in the climate system and therefore further accelerate the local and global warming. For this scope temporal variations in surface albedo driven by the variation in vegetation and snow cover will be quantified. In addition, the net impact of the warming on the greenhouse gas budget will be evaluated by estimating the net exchange of both CO2 and CH4 from the thawing permafrost and by the enhanced net primary production of vegetation.	15/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												4	Deliverable Title: Arctic marine productivity from plankton to fish: an assessment.	Marine biological productivity at three trophic levels will be taken into consideration, analysed and documented: 1) satellite-based primary production by phytoplankton ; 2) satellite-based estimate of secondary production by zooplankton (dynamics of productive fronts) 3) for fisheries the JRC will continue its participation as EU-delegate in the meetings of Scientific Experts on Fish Stocks in the Central Arctic Ocean (FISCAO) and advise DG MARE on the setting of a scientific framework for management of future fisheries in the Central Arctic Ocean.	15/12/2019	JRC technical reports
3.2. Energy																
3.2.a energy-climate-economy modelling and the Energy Union governance - develop, validate, and run models for a climate-energy-economy system (including POTEnCIA model), including the development and maintenance of necessary databases or other available energy models for the Commission; carry out relevant techno-economic analysis, in particular mapping the latest evidence on techno-economic costs for energy supply, demand and storage																
167 - EST JRC.C.1	3288 - PMSM Power market and storage modelling	The objective of this WP is to carry out studies on the systemic role of energy storage and the coupling of different energy carriers. In particular the WP analyses the issues discussed in SWD(2017) 61 "Energy storage – the role of electricity", the possible role, and the economics of centralised and decentralised electricity storage, power to gas, power to heat and sector coupling technologies within a future decarbonised power system with high shares of renewable energy. The deliverables of the WP will be based on the application of the in-house models Dispa-SET and SPIRIT. These will be complemented with targeted model developments and additional models where necessary making use of datasets developed within WP 3869. This work package will work in collaboration with WP 518- ESSI on sector coupling and system integration in identifying the cases and for data input. The Dispa-SET and SPIRIT models are developed internally in order to (i) bridge existing gaps in the set of tools available at the JRC, (ii) increase the flexibility and readiness of the JRC to anticipate policy needs, (iii) increase the transparency on the methods used (with the goal of producing fully open-source models), (iv) enhance significantly the internal know-how of the JRC by reducing the dependency from external consultants and proprietary software (reducing also administrative burdens related to procurement and contractual needs). The geographical scope of the models is Europe (EU + neighbouring countries).	JRC.C.7 ANDREAS ZUCKER	3.2.a	ENER	JRC	Kostis SAKELLARIS (ENER.A.4), Matti SUPPONEN (ENER.B.2), Jean-Marie BEMTGEN (ENER.C.2), Arnaud MERCIER (ECFIN.DDG2.B.4), Gwennael JOLIFF-BOTREL (RTD G.1)	ECFIN RTD	SET-Plan Com - SET-Plan Community	01/01/2016 31/12/2019	INS-RS	201801	Role of energy storage in the energy system 2018	Case studies on of the impact of storage technologies and competing options on the flexibility of the power system. The case studies will assess the impact of specific storage/sector coupling technologies on the electricity system and markets. In particular, they will address ongoing issues as highlighted by the Clean Energy for all European Package, COM(2016) 860 as e.g. the integration of prosumers in to the market, the role of heat storage in relation with the energy efficiency goals or the need for conversion of electricity to other energy carriers for high RES-E systems. Moreover, they will address the impact of possible new market designs on the diffusion of new storage technology. The case studies will make use of the SPIRIT and Dispa-SET models, including possible extensions and complimentary models.	31/12/2018	Science-for-policy reports
												201901	Role of energy storage in the energy system 2019	Case studies on of the impact of storage technologies and competing options on the flexibility of the power system. The case studies will assess the impact of specific storage/sector coupling technologies on the electricity system and markets. In particular, they will address ongoing issues as highlighted by the Clean Energy for all European Package, COM(2016) 860 as e.g. the integration of prosumers in to the market, the role of heat storage in relation with the energy efficiency goals or the need for conversion of electricity to other energy carriers for high RES-E systems. Moreover, they will address the impact of possible new market designs on the diffusion of new storage technology. The case studies will make use of the SPIRIT and Dispa-SET models, including possible extensions and complimentary models.	31/12/2019	Science-for-policy reports
241 - KM-EnJ JRC.C.7	3869 - Data-EnJ Data for the Energy Union	This WPK is designed so that the Unit "Knowledge for the Energy Union" will be facilitated to deliver its mission and ambition as described in its endorsed concept note. It will essentially manage the collection and preparation of data-sets with direct relevance to the Energy Union for reference, analytical and modelling purposes as well as dissemination. The data-sets will be unique in the sense that cannot be found in other non-commercial sources as well as specifically tailored to meet the demand for such data by analysts and modellers. The WPK will cover databases from all Dir. C units, thus building the internal knowledge landscape of the Directorate. Databases will be created by the WPK itself but also jointly with other WPKs led by other JRC Units. The WPK will map existing databases and information systems in the Directorate and therefore be the source of inputs in the JRC MIDAS, the Data4Policy initiative and the open data and knowledge management policies of the Commission. The WPK will facilitate the use of the data various levels (Unit, Directorate, JRC, Commission, general public as it may be appropriate) fostering thus openness and transparency and accordingly striving for a knowledge-exchange infrastructure. The data will be used 1) directly by policy makers in other DGs and 2) indirectly since data is also processed and analysed by the JRC or policy DGs to produce insights and knowledge which, are in turn made available to the policy maker (notably in modelling exercises). The WPK will carry out a user survey amongst policy makers concerned with the Energy Union to identify their current and future data needs in cooperation with the Competence Centre on Modelling and other in-house entities such as the Energy Monitoring Observation System (EMOS). A gap analysis will also be performed to identify the data needs and priorities thereof; these gaps will be addressed by new in-house activities. The WPK will also develop common platforms and tools for the collection, access, dissemination and use of data and information related to energy. It will make existing data, information available to the respective users which may range from JRC experts to policy makers. Open Science will be the guiding principle, meaning that the aim is to make as much data and information available as possible.	JRC.C.7 ANDREAS UHLEIN	3.2.a	ENER	JRC	Magdalena Andreea STRACHINESCU OLTEANU (ENER C2), ABREU MARQUES Paula (ENER C1), VELKOVA Maria (CLIMA C4), Piotr TULEJ (RTD G3)	CLIMA ENER GROW MARE RTD	SET-Plan Com - SET-Plan Community	01/01/2017 31/12/2019	INS-RS	050	Collection and management of data for the Energy Union	The WPK will collect and manage data necessary for the implementation of the Energy Union strategy. Existing Dir. C databases will be maintained and updated. New ones will be created in collaboration with all Dir. C units involved in data acquisition and use. Datasets will be made accessible through a knowledge sharing platform. Datasets that will be available include: 1) investments, patents, trade & jobs to underpin the Research, Innovation and Competitiveness dimension of the Energy Union; 2) wind & solar power time series (EMHIREs) for the integration of RES in the energy system; 3) JRC power plant database; 4) the energy technology reference indicators (ETRI); 5) Materials for energy Information System with information on raw materials; 6) European CO2 storage Atlas; 7) energy use in energy intensive industry; 8) installations & market shares of renewables; 9) the IDEES database on national energy information, and 10) on power & gas grids, systems and markets. The data collected and prepared by the WPK will be used at various levels (unit, Directorate, JRC, Commission, general public). The data is used directly by policy makers in policy DGs and also processed and analysed by the JRC to produce insights and knowledge which is then made available to the policy maker. The WPK will create a network of users and data developers/managers to facilitate the continuous interaction between these communities ensuring that needed data are always available by the JRC. In first instance, a user survey will be carried out amongst policy makers concerned with the Energy Union to identify their current and future data needs. A gap analysis will be performed to map the data available and the data that needs to be produced or otherwise acquired by the JRC in order to cover the data needs of the Commission. An action plan will be developed and will be regularly updated and reviewed.	31/10/2018	Scientific information systems and databases
												051	User engagement and gap analysis	The WPK will create a network of users and data developers/managers to facilitate the continuous interaction between these communities ensuring that needed data are always available by the JRC. In first instance, a user survey will be carried out amongst policy makers concerned with the Energy Union to identify their current and future data needs. A gap analysis will be performed to map the data available and the data that needs to be produced or otherwise acquired by the JRC in order to cover the data needs of the Commission. An action plan will be developed and will be regularly updated and reviewed.	31/12/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		Furthermore, the WPK will contribute to the development of the one stop shop for scientific knowledge (Lead JRC.H.2).										052	Data repository and user interface	Development of a common platform or warehouse for data collection, depository and access. The platform will host and provide access to all Dir.C databases for the implementation of the Energy Union strategy and will accommodate the various levels of access needed (ENER, Dir. C, JRC, Commission, the general public).	31/12/2019	Scientific information systems and databases
142 - EU economic analysis JRC.C.6	5034 - EEP European energy policy economic assessment	The European Commission DG ENER and DG CLIMA make extensive use of energy-economy modelling capacity to prepare and analyse energy policies and investigate their ex-post or ex-ante impacts. Several units within DG ENER, DG CLIMA and other Commission services have deployed modelling tools to develop the empirical base evidence underpinning policy proposals, strategies, and impact assessments.	JRC.C.6 Hans Peter RUSS	3.2.a	ENER	JRC	Stefaan VERGOTE	CLIMA		01/01/2017 30/12/2020	INS-RS					
7670 - GOV-EU JRC.C.7	6350 - EnergyScenarios 2018 Economic Analyses of Energy Scenarios 2018	DG ENER makes extensive use of energy-economy modelling capacity to prepare and analyse energy policies and investigate their ex-post or ex-ante impacts. Several units within DG ENER and other Commission services have deployed modelling tools to develop the empirical base evidence underpinning policy proposals, strategies, and impact assessments. The JRC Directorate C - Energy, Transport & Climate has accumulated over the years a considerable experience in the development, maintenance and exploitation of economic/energy models that can project energy consumption and GHG emissions, covering in detailed manner all final energy consumption sectors as well as energy supply on a regional and global scale. These tools include on the one side the POTENCIA model to analyse the impact of policies on the European energy sector, and on the other the POLES model with its focus on global energy markets.	JRC.C.6 Hans Peter RUSS	3.2.a	ENER	ENER	n/a	CLIMA MOVE		01/01/2018 31/12/2019	CON-AA	d1	intermediate report	Report describing work done as well as the work envisaged until end of contract. Description of the scenarios and analysis carried out with the modelling tool. Summary of the corresponding findings.	10/12/2018	Science-for-policy reports
												d2	final report	summary of work carried out under the AA. Description of the scenarios and analysis carried out with the modelling tool. Summary of the findings and recommendations derived from the analysis.	09/12/2019	Science-for-policy reports
142 - EU economic analysis JRC.C.6	6351 - METIS METIS support	The objective of this WP is to support DG ENER (as requested in Ares(2017)1295428 and confirmed by Ares(2017)1823612) in the development, testing, validation, maintenance, and application of the METIS model, and its related data needs, during the completion of the METIS project and beyond. In particular this WP, in close cooperation with other ongoing activities (3869 - data for the Energy Union, 3288 - power markets and storage, 3487 - heating and cooling, and projects 142 and 324) will: i) develop and calibrate new contexts (combination of different power generation mixes, network configurations, and weather scenarios for specific years), in order to carry out analyses as requested by ENER for the electricity, gas, and heating and cooling sectors, ii) combine METIS with long-term energy system models available at the JRC (POTENCIA) iii) channel any other support requested by ENER as in the previous PMSM WP, providing advice and feedback to ENER on any deliverable submitted by the METIS consortium.	JRC.C.7 ANDREAS ZUCKER	3.2.a	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	201801	Development of a context representing the current European power, gas and heating and cooling systems	Development, testing, calibration, and validation of a new context (combination of different power generation mixes, network configurations, and weather scenarios) representing the current European power, gas and heating and cooling systems, in close cooperation with other ongoing WPs (3869 - data for the Energy Union, 3288 - power markets and storage, 3487 - heating and cooling, and project 324).	31/12/2018	Scientific information systems and databases
												201802	Development of the link POTENCIA-METIS	Development, testing, calibration, and validation of the linkage between METIS and the long-term energy system model POTENCIA.	31/12/2018	Scientific information systems and databases
												201902	Support to DG ENER	Development of specific analyses requested by ENER (according to Ares(2017)1295428) using the models and contexts built up in the previous deliverables.	31/12/2019	Science-for-policy reports
7670 - GOV-EU JRC.C.7	6540 - GOV-COORD Coordination of JRC support to the Energy Union Governance	The aim of the WPK is to provide effective coordination to existing and new JRC activities contributing to the Governance of the Energy Union. In particular, the WPK will plan and oversee the execution of the supporting JRC activities, carried out by several Units across Directorate C and beyond, as described in the other WPKs of this project; will ensure that the outcome complies with the requirements of the Governance by setting and implementing the necessary quality controls; and will facilitate the communication between the JRC and the other Commission services involved in the Governance structure. Finally, the WPK will ensure the proper Commission-internal communication of the JRC findings, and potential dissemination of the results in coordination with the policy DGs, in particular DG ENER and DG CLIMA. Overall, this WPK will facilitate the timely and high-quality contribution of the JRC to the Commission's assessment of integrated national plans and thus will contribute to the efficient and effective implementation of the Commission commitments, stemming from the Regulation on the Energy Union Governance.	JRC.C.7 Evangelos TZIMAS	3.2.a	ENER	JRC	n/a	CLIMA MOVE		01/01/2018 31/12/2019	INS-RS	1	Review and analysis in support to the assessment of the draft national climate and energy action plans	The report will highlight the key findings from the JRC analysis of the draft national climate and energy action plans and will provide inputs to recommendations that are to be formulated by the Commission services for the preparation of the final national energy and climate plans.	30/06/2019	JRC contributions to policy documents
3.2.b energy security - carry out security assessments of the EU energy supply system, and safety, risk and techno-economic analyses for certain energy sources, taking into account the resilience of the supply system to the adverse impacts of climate change. This work covers security of supply, transmission and distribution of gas and of electricity, as well as the safety of offshore oil and gas operations, including tools for accident reporting and capacity																
429 - SEC-GAS JRC.C.3	487 - EU Gas Gas Transmission Network Modeling	Develop a hydraulic model for the EU Gas Transmission Network (EUGas) to analyse normal operation of the network at EU and at regional level (set of neighbouring MS), but also the effect of gas crises, including the resilience of the network (network flexibility & emergency planning), as well as reliability aspects. EUGas shares data with two other ancillary dedicated mass-balance models: ProGasNet (risk, reliability and vulnerability analysis) and GEMFLOW (study of gas crises at EU level). The models developed in this WP are used and will be used in support of the development of the Energy Union and its Roadmap. More specifically they have already been used during 2015 and 2016 in support of the implementation of Regulation 994/2010 on security of gas supply, in support of the Impact Assessment on the and the Liquefied Natural Gas (LNG) and Storage Strategy and of the European Programme for Critical Infrastructure Protection (support to Directive 2008/114/EC). A part of this WP is also dedicated to study the Liquefied Natural Gas (LNG) Supply chain and the role of Gas Storage in energy security. Both, LNG and gas storage have been identified as key elements to cope with gas crises. A deep understanding of both may help improving the strategy to keep them in the market and enhancing their contribution to security of supply. Gas quality issues are also addressed in EUGas, specifically studying the different gas quality (calorific value, different chemical composition, Wobbe index) in different countries and how this can become a threat to joint effective reaction of EU MS to specific gas crises. Close collaboration will be established with other units and directorates, particularly with C7 regarding the objectives and the activities of this work package are:	JRC.C.3 Ricardo BOLADO LAVIN	3.2.b	ENER	JRC	Stefan MOSER	CLIMA COMP DEVCO EEAS ENV GROW HOME NEAR	Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2014 31/12/2020	INS-RS	10	Gas quality bands in the EU (progress report)	After all the data collection done during 2017 among different gas Distribution System Operators working in different regions of the EU and the subsequent data analysis performed to see the variability of gas quality (paying much attention to the Wobbe index and to other parameters not yet or insufficiently established in EN16726:2016), this progress report will summarise advancements achieved during 2018. This work will be eventually used to provide recommendations to CEN/TC 234 for the future revision of EN 16726:2016.	18/12/2018	Science-for-policy reports
												7	Study of new natural gas applications	The recent decrease by roughly 20% in EU gas demand between 2010 peak year and 2014 provide room for allocating gas to other areas of demand. This, together with more restrictive environmental regulations in maritime traffic and ports may foster the gasification of the merchant fleet. A study will be developed about technology needs, possible bottlenecks and other related problems and opportunities concerning the gasification of the merchant fleet.	01/12/2018	Science-for-policy reports
												9	Methodological advancements in Risk assessments for gas systems	JRC C.3 has been developing methodology for performing Risk Assessments (RA) of gas systems (at national and regional level) during a number of years. The methodology has been progressively enriched and improved thanks to the development of several RAs (Romania, Bulgaria and Greece; Baltic States and Finland, and Ukraine), this deliverable contains a consolidated methodology for performing Risk Assessments of regional gas systems (regional in the sense of several countries), fully in line with the Regulation of gas Security of Supply recently agreed by EP, EC and European Council, repealing Regulation 994/2010.	18/12/2019	Science-for-policy reports
301 - HyRis JRC.C.3	489 - SAFE-OIL Safety of Offshore Oil and Gas Operations	1. the identification of risk factors in areas of offshore activity and in particular in the Nordic Seas and in deep-water exploration and production. 2. the review of existing risk assessment methodologies for offshore oil and gas installations used in the EU with focus on the Nordic Seas and on deep-water exploration and production. 3. the proposal and the comparison of alternative metrics for the presentation of risks and for supporting risk reduction/risk acceptance decisions. This work-package supports the project's objectives as it determines the requirements that have to be met by hydrocarbon production industries in terms of health and safety. Risk factors and methodologies for risk assessment will be identified and reviewed with focus on harsh environments, and lessons learnt from analyses of accident data in the Nordic Seas will be reviewed in collaboration with Unit E2. This activity will also feed in the JRC Arctic project. The JRC will sign a Memorandum of Understanding with the Italian Ministry of Economic Development (the Italian competent authority) to collaborate on the development of metrics for the presentation of Unconventional hydrocarbons are a potential resource contributing to EU energy supply security and economic growth. The Work Package will address energy security, technological, economic and policy aspects, including stakeholder engagement. The first focus will be on shale gas. Activities focus on complementing and providing support to the Member States, including management and dissemination of the technical and scientific knowledge collected.	JRC.C.3 Stefano TARANTOLA	3.2.b	ENER	JRC	Stefan Moser, HoU, ENER-B.4; Joerg Koehli, ENER-B.4	ENV GROW MARE	- Health and Safety Executive - NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY - National Centre for Scientific Research Demokritos - POLITECNICO DI TORINO - Health and Safety Laboratory - UK	01/01/2016 31/12/2018	INS-RS	1	Risk Factors and Risk Assessment Methods in Offshore Operations in the Arctic	Publication of a peer-reviewed article on lessons learnt from an analysis of offshore accidents in the Nordic Seas	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e)
												6	Development of a Guide to Equipment, Methods and Procedures for the Prevention of Risks, the Emergency Response and the Mitigation of the Consequences of Accidents	The report will be a compendium for regulators without a specific background in risk and safety assessment describing the state-of-the-art of the safety-related equipment, methods, procedures and projects available nowadays for the prevention of risks, the emergency response and the mitigation of the consequences of accidents.	31/12/2018	JRC technical reports
												20	Resources and State of the Art on Research on Methane Hydrate	This report will review and analyse research advances in the field of methane hydrates exploitation and, when feasible, will collect information on estimated resources	30/06/2019	Science-for-policy reports
												22	Extension of the EUOGA resource assessment on all unconventional hydrocarbons	Apart from shale gas, where the resources have been estimated during 2016/17 the EUOGA resource assessment will de facto be extended to all unconventional hydrocarbons to include Tight Gas resources and update the Coal Bed Methane (CBM) and This report attempts to estimate and analyse the resources in order to include them in the UH datportal	31/05/2019	Scientific information systems and databases
												D15	An overview of hydraulic fracturing update 2018	This report presents an update of the studies carried out in 2013 and 2015, reviewing hydraulic fracturing and alternative fracturing technologies. For each identified technique, an overview is given. The technique is then briefly explained, and its rationale (reasons for use) is identified. Potential advantages and disadvantages are identified, and some considerations on costs are given. Finally, the status of the technique (for instance, commercially applied, being developed, concept, etc.) is given for its application to shale gas production.	28/02/2019	Science-for-policy reports
												D16	Technological advances in hydraulic fracturing	The production of shale gas is rapidly developing and achieving significant technological and economic efficiency gains all along the production chain: faster and cheaper drilling, longer lateral wells, more efficient fracturing and more fracturing stages leading to higher initial production rates and higher estimated ultimate recovery per well, more wells per pad, more efficient water and waste water management. This report attempts to review and analyse such advances.	31/01/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
301 - HyRIs JRC.C.3	490 - UH Unconventional Hydrocarbons		JRC.C.3 Ulrik VON ESTORFF	3.2.b	ENER	JRC	Ame ERIKSSON	ENV RTD	- International Association of Oil and Gas Producers EGS - Eurogeosurveys EP - European Parliament MS EU - Member states EU	01/01/2016 31/12/2019	INS-RS	D19	Investment analysis of unconventional hydrocarbon	"The uncertainty around the future commercial availability of unconventional hydrocarbon resources come from different aspects: on one side it goes on the UH resource assessment together with data on production potential, decline curve, maximum extraction rate; the volatility of the level of gas price strongly affects the business case of UH project extraction; social acceptance, finally, represent an additional source of uncertainty around the success of the project development. This study aims at including these aspects into an investment analysis for a selected Coal Bed Methane projects in Europe. We assess the profitability of investments in unconventional hydrocarbon resource development projects in selected European countries. We follow the traditional analytical framework already applied in previous works on investment analysis of shale gas projects (Weijermars 2013.) by including the calculation of the Net Present Value, Internal Rate of Return (IRR), the Benefit-Cost ratio (BCR) and the Unit Cost. Each of those financial indicators gives valuable information on the profitability of the investments (NPV), its minimum return rate beyond which the project shows negative profits (IRR) and profitability indicators that assess the financial resources used in the project compared to the benefits (BCR and UC). The uncertainty around the future commercial availability of unconventional hydrocarbon resources come from different aspects: on one side it goes on the UH resource assessment together with data on production potential, decline curve, maximum extraction rate; the volatility of the level of gas price strongly affects the business case of UH project extraction; social acceptance, finally, represent an additional source of uncertainty around the success of the project development. This study aims at including these aspects into an investment analysis for a selected Coal Bed Methane projects in Europe. We assess the profitability of investments in unconventional hydrocarbon resource development projects in selected European countries. We follow the traditional analytical framework already applied in previous works on investment analysis of shale gas projects (Weijermars 2013.) by including the calculation of the Net Present Value, Internal Rate of Return (IRR), the Benefit-Cost ratio (BCR) and the Unit Cost. Each of those financial indicators gives valuable information on the profitability of the investments (NPV), its minimum return rate beyond which the project shows negative profits (IRR) and profitability indicators that assess the financial resources used in the project compared to the benefits (BCR and UC)."	31/03/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												D25	Non-target analysis of additives in hydraulic fracturing waters	Technical report describing the experimental findings of proof of concept campaign on selected exploratory UHC sites	31/08/2018	JRC technical reports	
271 - EMSI JRC.C.3	2749 - INTERCON Intercontinental Electricity Infrastructures	Starting from the Energy Union's ambition for a stronger EU role in global energy markets, the central objective of this WPK is to assess the potential for interconnecting the EU electricity transmission infrastructure with remote electricity systems. Generation and transmission systems located in North America, North Africa, Asia and distant offshore areas will be considered. Integration of large-scale renewable energy sources will be the key issue. A selection of possible megaprojects and associated markets will be examined, in line with the objectives of the EMSI Project. Herein also geographical, climate and geopolitical aspects will be addressed. A potential interconnection with China will be studied in depth, as concrete plans for this link are under discussion. Several routes will be assessed. The resulting mega-infrastructure will be modelled. Evaluation techniques will include techno-economic assessment, cost benefit analysis and geographical and geopolitical studies. The outcome of this WPK will offer useful information to policy DGs (SG-SRSS, DEVCO, ENER) to evaluate and anticipate to - proposed or potential - intercontinental electricity projects and resulting markets. The knowledge and competences obtained will be also useful for the further development of assessment methodologies of Projects of Common Interest, and relevant for Energy Diplomacy.	JRC.C.3 Philip MINNEBO	3.2.b	ENER	JRC	Ms Catharina SIKOW-MAGNY	DEVCO EEAS SG		01/01/2017 31/12/2018	INS-UR	D2	An EU - China electricity interconnection: benefits for the EU society.	The report will focus on the potential benefits for the EU from an electricity transmission interconnection with part of the Chinese grid (including large-scale renewable energy sources). Real options theory and traditional cost-benefit analysis will be applied. A basic welfare analysis will be performed.	31/07/2018	Science-for-policy reports	
												D3	Techno-economic models of an EU-Chinese power grid.	The article will present the results of techno-economic models (in Plexos software) of the supergrid including the EU and (part of) the Chinese transmission networks and the interconnecting line. Several connecting routes will be modelled. Selected electricity systems located along these routes will be included in the models.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
271 - EMSI JRC.C.3	3476 - PSMA Power systems and markets analysis	This Work Package aims to support the implementation of the Energy Union Roadmap's Actions on "Infrastructure" (interconnection developments), "Electricity" (security of supply measures), "Industrial competitiveness" and "Cross-cutting measures" by: - providing data, analysis and intelligence on future transmission systems and electricity Projects of Common Interest. - developing scenarios and assessing merits and options for the development of transmission systems and electricity highways in Europe and beyond. - building and integrating advanced steady state and dynamic models of the power system, with special focus on the interfaces/interactions between inter-continental (super) grids, the Baltic system, the North Seas offshore grids for wind, electricity transmission & distribution systems and gas & power networks. The power system evolution requires a drastic change also in the methodologies to assess power system operation: new quantitative models are needed to evaluate system performance considering system operation constraints and requirements. The objective within this Work Package is to develop a whole system approach to identify how the different system's domains and sub-systems can contribute to accommodating large quantities of variable generation.	JRC.C.3 SILVIA VITIELLO	3.2.b	ENER	JRC	Matti Supponen (ENER.B.2), Beatrice Coda (ENER.B.1)	SG		01/01/2016 31/12/2019	INS-RS	3	Scientific publications	Scientific output production/dissemination	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												4	Regional analyses in Central-South Europe	Power system regional market and security analyses in Central-South Europe, with special focus on the regions in and/or bordering with the Mediterranean area. The regional assessment will also consider market integration and energy security challenges linked to the implementation of the EU's climate policies and initiatives.	30/05/2018	Science-for-policy reports	
												6	Nuclear Fusion in the Internal Energy Market	The Science for Policy report will present the results of coupling two models, Electricity System Europe and European Times Model. Generation from nuclear fusion will be integrated into the models, so to see the possible results in terms of prices, stability and adequacy of the European energy system in 2050.	30/11/2018	Science-for-policy reports	
241 - KM-EnU JRC.C.7	4520 - UH Database Development and maintenance of the European unconventional hydrocarbons database	The purpose of the work to be carried out under this Arrangement is to perform the development and maintenance of the European unconventional hydrocarbons database (hereafter referred to as UH database) and to integrate it into the European Unconventional Hydrocarbons Portal (hereafter referred to as Open ECHO) with the scope of providing support to DG ENV. The main goal of the Arrangement is to create an interactive data repository, to be called UH database, supported by a set of visualisation tools. The UH database will be populated with data from exploration, demonstration and production unconventional hydrocarbon wells in the European Union Member States.	JRC.C.3 Ulrik VON ESTORFF	3.2.b	ENV	ENV	Christian WIMMER	ENER RTD	- International Association of Oil and Gas Producers IEA - International Energy Agency MS EU - Member states EU	01/01/2017 31/12/2020	CON-AA	2	Delivery of the online UH database	A technical system released online with public access, with report including a discussion of the comparability criteria, the method for performing database updates (manually and automatically)	31/12/2018	Technical systems	
429 - SEC-GAS JRC.C.3	4620 - SASOS Societal appreciation of security of energy supplies	The purpose of this work package (WPK) is to provide support to DG ENER's activities on assessing how much value European society attaches to security of energy supplies. One of the main objectives of European energy infrastructure policy is to contribute to smart, sustainable and inclusive growth, by developing modern and high-performing trans-European networks which take into account expected future flows, thus benefiting the entire internal energy market in terms of improving competitiveness on the global market and economic, social and territorial cohesion, in a period when the energy sector is undergoing major changes and faces new challenges which have a major impact on preserving the existing high level of supply standards. Hence, a deeper understanding on the society's appreciation of security of supply is essential. This understanding will be obtained by conducting specialised consumer surveys. This WPK contributes to better design the indicators contributing to the Security of Supply dimension considered in the Regulation 347/2013 on the selection of Projects of Common Interest (PCIs) and to the implementation of the Energy Union Roadmap initiatives.	JRC.C.3 TILEMAHOS EFTHIMIADIS	3.2.b	ENER	ENER	Adam SZOLYAK	COMP ECFIN ENV FISMA SG			18/05/2016 14/06/2018	CON-AA	46204	Conduction of surveys: other entities	The surveys (large) industrial users of energy, and on Distribution System Operators and energy retailers and consumer organisations, will be conducted in at least three Member States, each one being in a different level of energy security (in relative terms). These surveys will be conducted via telephone, face-to-face, and/or web interviews. This task will be sub-contracted to local specialised companies.	15/02/2018	External study reports
													46205	Analyse, summarise and report the findings and conclusions including monetization of security of supply in view of the policy priorities	Report analysing the results and reporting the findings and conclusions including monetization of security of supply in view of the policy priorities.	30/05/2018	Science-for-policy reports
													46206	Workshop to present results	A workshop will be organised in Brussels to present the methodology, survey results, and the relevant analysis. Invitations for presentations will be extended to DG ENER and DG JRC staff, external experts, and the contractors.	10/06/2018	JRC technical reports
301 - HyRIs JRC.C.3	5019 - VICOS Virtual Centre of Offshore Safety Expertise	The purpose of this Work-package is to provide DG ENER with Technical Assistance and Scientific Support to the implementation of Directive 2013/30/EU on Safety of Offshore Oil and Gas Installations This work-package supports the project's objectives as it determines the requirements that have to be met by hydrocarbon production industries in terms of health and safety. The work-package will develop a fully operational version of the 'Virtual' Centre of Offshore Safety Expertise (VICOS). VICOS will coordinate the provision of additional resources to Member States competent authorities. The expertise on ICT tools available in the team and the knowledge on the functioning of the competent authorities will be central to the implementation of VICOS and for the organization of both workshops and trainings for competent authorities. This work is essential because it provides assistance to competent authorities in optimizing their regulatory work pursuant the Offshore Safety Directive. This WPK will definitely terminate on February 22nd 2019. By then, Member States's competent authorities shall have implemented the Directive and shall have reached enough capacity to be	JRC.C.3 Stefano TARANTOLA	3.2.b	ENER	ENER	Stefan MOSER				01/01/2017 22/02/2019	CON-AA	4	Technical Secretariat of the EUOAG	This is an ongoing activity for which the JRC has received mandate from the Commission. The JRC takes care of organising the meetings of authorities and plenary sessions with industry and their associations. Publish the minutes of the meetings. Disseminate official information to the competent authorities of the Member States. This deliverable will summarize JRC's support until December 2018 and the support provided in the handover of the activity to DG ENER.	22/02/2019	JRC technical reports
													6	Update of SyRIO software	The SyRIO software version 1.0 is operational since December 2016. We expect many feedbacks from the Competent authorities and by operators. On the basis of these feedbacks the JRC will upgrade SyRIO to comply with the authorities' requests. This will be the last production of the code by JRC, and no further support will be provided.	22/02/2019	Scientific information systems and databases
													7	Update of SPIROS software	The SPIROS 1.0 is available since May 2017. We expect many feedbacks from the Competent authorities and the Commission. On the basis of these feedbacks the JRC will have to upgrade SPIROS to comply with users' requests.	28/02/2018	Scientific information systems and databases
													8	Supporting Member States in the preparation of external emergency response plans	The JRC will examine the relevant literature in external emergency response plans and will prepare an assessment of the level of capacity and readiness of the Member States with regards to their external action plans, regional plans, identification of main challenges and follow-up recommendations.	22/02/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		autonomous.										9	Training course on a topic to be identified	The main objective of this task is to provide Member States access to knowledge, tools and expertise to increase their own capacity – and to support them in building the necessary expertise to properly carry out their regulatory functions, as required by Directive 2013/30/EU.	22/02/2019	Training
429 - SEC-GAS JRC.C.3	5740 - PCI 2017 Support the identification of relevant projects of PCIs	The purpose of this work package is to support DG ENER's activities on the identification and evaluation of Projects of Common Interest in the European Energy Infrastructure, notably in the categories of electricity, natural gas, and smart grids. This action is related to the provisions of the Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure and the work of the regional energy infrastructure working groups, which is calling for the adoption of electricity transmission and storage and gas Projects of Common Interest across the Union necessary to implement the energy infrastructure priority corridors and areas, as set in Annex I Regulation (EU) 347/2013	JRC.C.3 TILEMAHOS EFTHIMIADIS	3.2.b	ENER	ENER	Renato STELLA	CLIMA COMP DEVCO ECFIN ENV SG	ACER - European Agency for the Cooperation of Energy Regulators (ACER) ETSO-E - European Network of Transmission System Operators	01/01/2017 31/12/2018	CON-AA	5740D6	Report on ENTSO-E methodology	Report by the Directorate on alignment of the JRC assessment framework to the ENTSO-E methodology with regards to the evaluation of Smart Grid PCI candidates for the PCI list 2019.	31/12/2018	Science-for-policy reports
241 - KM-EnU JRC.C.7	6041 - EURENA European Energy Atlas	This WP proposes the establishment of a European Energy Atlas (EURENA). After reviewing possible viable frames of reference for designing this first of a kind Atlas, the European Unconventional Hydrocarbons Portal which is already developed and hosted by DG JRC is a feasible candidate. The structure of this portal is modular and wrapped around a versatile open source geographical information system that can accommodate the rich content of EURENA and it will interactively give access to information using either spatial location or big data visualisation. EURENA will benefit of an environment which is designed to be compliant with INSPIRE and other EC digital data standards (e.g. Cybersecurity, GIS). EURENA will represent a dissemination and analysis tool with the following main features: • Information provider and knowledge sharing platform that allows its users to access syncretic energy information in a comparable and straightforward manner. • Interactive tool that allows users to increase their knowledge about secure, sustainable, and competitive energy in Europe using a bundled set of visualisation and analysis applications carried out on the website interdependent content. In a nutshell, the EURENA content will incorporate scientific and technical reports, databases The scope of this Administrative Arrangement between JRC and SRSS is to provide technical support on the objective set by the EC to assist the Cypriot authorities with the preparation and implementation of growth-enhancing administrative and structural reforms in the energy sector. The outputs and deliverables will be used by the Cypriot authorities for: • The achievement of the objectives related to the Energy Union strategy • The promotion of a competitive electricity market based on open access and non-discriminatory use of national infrastructure • The fulfilment of their obligations under the EU Regulation 347/2013 on trans-European energy infrastructure. JRC's work will contribute to the aforementioned objectives by: • Evaluating some aspects of the on-going energy and climate plans, and in particular to the Dimensions "Energy Security" and "Internal Energy Market". Of specific interest, among others, are resilience against interrupted supply of gas or electricity, key infrastructure projects other than PCIs, the electricity system adequacy and flexibility, and the regulatory framework for storage, Demand Response, and Distributed Energy Sources. • Developing a methodology for evaluating the network charges and needed adjustments in the future support schemes (i.e. net-metering, net-billing, self-consumption) • Reviewing good practices for the fulfilment of obligations under the Regulation (EU) 347/2013 on the trans-European energy infrastructure The work will include a combination of critical review of best practices, consolidation of existing studies and new modelling activities for the electricity and possibly the gas sector. Building on the knowledge and experience gained through this WPK, the JRC will develop expertise on the implementation of the 1st (energy security) and 2nd dimension (internal energy market) of the Energy Union. Building on the knowledge and experience gained, the JRC can develop an activity of wider geographical scope in support of the implementation of the 1st (energy security) and 2nd dimension (internal energy market) of the Energy Union. Moreover, examples and lessons learnt of wider replicability can be developed. The work will be limited to support on topics where there will be no conflict of interest with JRC's role in support of the Commission services responsible for the "Governance of the Energy Union". Hence, JRC will not take part in the production of Energy Union plans, targets, or scenarios.	JRC.C.3 Ulrik VON ESTORFF	3.2.b	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	1	Technical development of the EURENA structure	A technical system will be designed for the visualization of resources, installations and other related information of the European energy portfolio. This system will be based on the existing structure of the unconventional hydrocarbons atlas, which had been developed during 2016 and 2017.	30/09/2019	Scientific information systems and databases
												2	A collection of available information on energy resources and infrastructure in the EU	In order to populate the European energy atlas, quantitative information on the energy resources and infrastructure (locations, networks, pipelines, etc.) available in the EU will be collected, from indigenous production to imports and exports. The main energy types described will be nuclear, renewables, coal and hydrocarbons.	31/07/2019	JRC technical reports
7670 - GOV-EU JRC.C.7	6354 - CESDS Cyprus Electricity System Development Support	The scope of this Administrative Arrangement between JRC and SRSS is to provide technical support on the objective set by the EC to assist the Cypriot authorities with the preparation and implementation of growth-enhancing administrative and structural reforms in the energy sector. The outputs and deliverables will be used by the Cypriot authorities for: • The achievement of the objectives related to the Energy Union strategy • The promotion of a competitive electricity market based on open access and non-discriminatory use of national infrastructure • The fulfilment of their obligations under the EU Regulation 347/2013 on trans-European energy infrastructure. JRC's work will contribute to the aforementioned objectives by: • Evaluating some aspects of the on-going energy and climate plans, and in particular to the Dimensions "Energy Security" and "Internal Energy Market". Of specific interest, among others, are resilience against interrupted supply of gas or electricity, key infrastructure projects other than PCIs, the electricity system adequacy and flexibility, and the regulatory framework for storage, Demand Response, and Distributed Energy Sources. • Developing a methodology for evaluating the network charges and needed adjustments in the future support schemes (i.e. net-metering, net-billing, self-consumption) • Reviewing good practices for the fulfilment of obligations under the Regulation (EU) 347/2013 on the trans-European energy infrastructure The work will include a combination of critical review of best practices, consolidation of existing studies and new modelling activities for the electricity and possibly the gas sector. Building on the knowledge and experience gained through this WPK, the JRC will develop expertise on the implementation of the 1st (energy security) and 2nd dimension (internal energy market) of the Energy Union. Building on the knowledge and experience gained, the JRC can develop an activity of wider geographical scope in support of the implementation of the 1st (energy security) and 2nd dimension (internal energy market) of the Energy Union. Moreover, examples and lessons learnt of wider replicability can be developed. The work will be limited to support on topics where there will be no conflict of interest with JRC's role in support of the Commission services responsible for the "Governance of the Energy Union". Hence, JRC will not take part in the production of Energy Union plans, targets, or scenarios.	JRC.C.3 STAMATIOS CHONDROGIANNIS	3.2.b	SG	SG	n/a	ENER		15/01/2018 15/01/2019	CON-AA	D11	Recommendations related to the Dimensions "Energy Security" and "Internal Energy Market" of the integrated energy and climate plan	Analysis and recommendations related to the Dimensions "Energy Security" and "Internal Energy Market" of the integrated energy and climate plan.	15/01/2019	JRC technical reports
												D12up	Report of Training on Energy Modelling Tools	This comprehensive report will summarise the training activities offered by JRC to the Cypriot Authorities on Energy Modelling Tools. It will include: - final training programme; - training material (presentations, lecture handouts, etc.) in printed and/or electronic form and evaluation material (evaluation forms filled in by training participants) in original and/or electronic/scanned form; - assessment of participant evaluations	15/12/2018	Training
												D21	Setting the primary objectives of network pricing for support schemes and provide a critique of the principal approaches	This report has as aim to: 1. Assess the current status of network charges, support schemes (self-generation, net-metering, pilot project on demand response pricing) and relevant CERA's decisions. 2. Set the primary objectives of network pricing in a competitive environment including an assessment on the meaning and importance of each of the objectives as well as their interaction. 3. Provide a critique of the principal approaches that could be applied to electricity network pricing highlighting their strengths and shortcomings in the context of satisfying the key network pricing objectives.	15/04/2018	Science-for-policy reports
												D22	Propose a detailed methodology for determining the use of network charges	This report will contain proposal of a detailed methodology for determining the use of network charges, explaining how the proposed methodology satisfies the primary objectives of network pricing and taking into account that the network charges should avoid cross subsidization and distortion of electricity prices to consumers that are not participating in the support schemes.	15/05/2018	Science-for-policy reports
												D23	Propose adjustments required in the potential future support schemes	This report will: 1. Propose adjustments required in the potential future support schemes (i.e. net-metering, net-billing and self-consumption) taking into account the objectives of network pricing and the proposed methodology in D22 for determining network charges. 2. Discuss and suggest practical implementation of such methodology.	15/06/2018	Science-for-policy reports
												D24	Prototype Tool to calculate the real network charges	This deliverable will provide a commonly available user-friendly prototype tool to calculate the real network charges in accordance with the proposed methodology in D22. With the employment of the tool the real network charges will be identified.	15/07/2018	Scientific information systems and databases
												D25	Report on training on the implementation of methodology and use of the proposed tool	This comprehensive report will reflect the training activities on the prototype tool developed in D24. It will include: - final training programme; - training material (presentations, lecture handouts, etc.) in printed and/or electronic form and evaluation material (evaluation forms filled in by training participants) in original and/or electronic/scanned form; - assessment of participant evaluations	15/08/2018	Training
												D31	Good practices regarding the evaluation of investment in energy infrastructure projects	With reference to CERA's Decision dated 8 September 2015 on 'Methodology and Criteria for the evaluation of investment in electricity and gas infrastructure projects' and taking into account provisions of Regulation (EU) No 347/2013 and especially article 13 on 'incentives', JRC will identify, analyse and report on good practices NRAs on the issue, and provide suggestions for improvements of the above mentioned CERA's decision.	15/03/2018	Science-for-policy reports
												D33	Identification of good practices for CERA on the cross-border cost allocation process for PCI projects	This report will identify good practices for NRAs of the cross-border cost allocation process for PCI projects in order to facilitate treatment of the investment requests for both electricity and gas infrastructure categories. Apart from the good practices of other NRAs the Recommendation No5/2015 of the Agency for the Cooperation of Energy Regulators (ACER) of 18 December 2015 on 'Good practices for the treatment of the investment requests, including cross-border cost allocation request, for electricity and gas projects of common interest' will be taken into account for the preparation of the report	15/06/2018	Science-for-policy reports
7596 - Resilience4EU JRC.B.1	6369 - CEI-Resilience Critical Energy Infrastructure Resilience	Resilience of critical energy infrastructure is among the key elements of modern society. Resilience is explicitly mentioned in the Energy Union strategy; a resilient infrastructure is the backbone of the Energy Union. The development of a systematic resilience modelling methodology to assess critical energy infrastructure resilience is needed to identify, evaluate and justify new infrastructure projects both at national or regional levels. This is in particular important not only from technical perspective, like transmission network bottlenecks, but also in the light of new threats of this century: cyber-attacks, terrorism or climate change induced natural hazards.	JRC.C.3 Vytils KOPUSTINSKAS	3.2.b	HOME	JRC	n/a	EEAS ENER		01/01/2018 31/12/2019	INS-RS	1	Probabilistic methodology to assess resilience of critical energy infrastructure	The report will describe probabilistic approach to assess resilience of critical energy infrastructure. Infrastructure resilience is still an emerging concept, but of growing importance. The probabilistic measures will be used to assess resilience by combining risk assessment and reliability analysis methods. The main focus of the report will be on gas transmission networks and power transmission grids. The report will cover extensive literature overview of this topic as recently increasing number of publications is observed. The proposed methodology will be applied on a selected EU infrastructure. The report will conclude with both outcomes of the reference study and future directions of potential research work.	30/11/2018	Science-for-policy reports
												2	Development of indicator framework for critical energy infrastructure	The indicator analysis is a proven tool to evaluate complex systems when models are too complicated or difficult to apply due to interactions and many uncertain parameters. The report will present development process of indicator framework to assess resilience of critical energy infrastructure, including targets of the Energy Union, aspects like diversification of sources of supply, distributed generation capacity, cross-border interconnections, natural hazards, cyber-attacks and others. Although it is never possible to assess all aspects only by indicators, they actually give a simple and fast way to have a first look at the system resilience properties. The indicators developed in the report will be applied for the selected regions of the EU. The main focus of the report will be on gas transmission networks and power transmission grids. Historical data will be used to build and test the set of indicators, and results will be demonstrated on a selected EU region.	12/12/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
429 - SEC-GAS JRC.C.3	6384 - RSGS III Support to the new Regulation on Security of Gas Supply repealing Regulation 994/2010	Regulation 994/2010 on Security of Gas Supply has been in force since October 2010. This regulation has contributed improving the level of security of gas supply in the EU, as reported by some scientific and technical papers. In 2014 a process was started to amend it in order to improve it, being the new dispute between GAZPROM and Ukrainian authorities and commercial entities and the subsequent Stress Tests exercises the triggering event. In early May 2017 EC, EP and the Council of the EU have reached a final agreement on the text of the new Regulation. JRC's support to the implementation of this new Regulation will most likely consist of four components: 1) technical assistance to the review of regional Risk Assessments and Plans (preventive action plan and emergency plan) submitted by the corresponding MS, 2) scientific support concerning specific topics systematically poorly addressed by MS in the past (most remarkably the correct estimation of 1-in-20-year daily demand and the correct assessment of the interaction gas-electricity), 3) ad-hoc support to analyse the situation of specific MS, Energy Community contracting parties and gas suppliers, particularly in situations of gas crises, and 4) provide guidance and best practices about the implementation of the new Regulation on Security of Gas Supply. This Work Package aims to support the implementation of the "Clean Energy for all Europeans legislative proposal" regarding the risk preparedness regulation by: - providing data, analysis and intelligence on the best use of interconnectors including at moments of tight conditions. - contrasting techno-economic options (involving interconnectors, storage and demand response) for balancing the future power system. - analyse methodologies to better assess the system under these topics: short-term adequacy and crisis scenario identification. - Definition of stress-tests	JRC.C.3 Ricardo BOLADO LAVIN	3.2.b	ENER	ENER	n/a	EAS HOME NEAR RTD SG		01/10/2017 30/09/2020	CON-AA	2	Methodological guidance to correctly estimate some aspects of gas demand	MS have systematically, with few exceptions) used very simple methods, full of weaknesses and not well justified assumptions, to estimate different gas demands needed to implement the Regulation (1-in-20-year daily peak demand, 1-in-20-year week demand, etc.). This target of this deliverable is to develop sound methods to estimate this demand and make it available to the Gas Coordination Group and DG ENER in order to improve the quality of the Risk assessments and the plans.	29/06/2018	Science-for-policy reports
												4	Guidance and case study on how to address the interaction gas - electricity in regional risk assessments	After all the experience acquired during the last years in the area of the interaction between gas and electricity transmission networks, JRC will deliver a document with clear indications about how to address this interaction in a risk assessment and the adequate simulation tools to address it. A case study with clear and comprehensive applications will also be in this report	31/10/2018	Science-for-policy reports
271 - EMSI JRC.C.3	6551 - Crosos Risk Preparedness in the electricity sector. Cross-border security of supply	This Work Package aims to support the implementation of the "Clean Energy for all Europeans legislative proposal" regarding the risk preparedness regulation by: - providing data, analysis and intelligence on the best use of interconnectors including at moments of tight conditions. - contrasting techno-economic options (involving interconnectors, storage and demand response) for balancing the future power system. - analyse methodologies to better assess the system under these topics: short-term adequacy and crisis scenario identification. - Definition of stress-tests	JRC.C.3 MARTA PONCELA BLANCO	3.2.b	ENER	ENER	n/a	COMP	ENTSO-E - European Network of Transmission System Operators	01/01/2018 31/12/2019	CON-AA	1	Methodology for short term adequacy assessments	The risk preparedness regulation establishes that ENTSO-E must propose a methodology for short-term adequacy (seasonal, week-ahead and intraday) to be performed by ENTSO-E (in the case of seasonal) and by the regional operational centres in the case of the week ahead and intraday assessments. This report will review the current practices in Europe and other countries (US, if it is relevant), as well as scientific literature to propose the basic elements that the ENTSO-E methodology should contain. The report will contain a review of the current ENTSO-E methodology for short term adequacy	30/06/2018	Science-for-policy reports
												2	Methodology for identifying electricity crisis scenarios at a regional level	The risk preparedness regulation establishes that ENTSO-E must propose a methodology for identifying electricity crisis scenarios at a regional level. This scenario identification methodology shall cover very different relevant topics as rare and extreme natural hazards, hazards going beyond N-1 and malicious attacks. The report will review the current practices in Europe and other countries as well as US if it is relevant.	30/06/2019	Science-for-policy reports
3.2.c Internal energy market - assess the development of energy infrastructure and energy markets in the EU, including design of the retail market, new deal for energy consumers and protection of vulnerable consumers, short-medium and long-term storage of renewable energy, integration of LNG and gas storage, super power grids, smart power grids (including interoperability and smart-metering), flexibility requirements and gas networks, and the new																
429 - SEC-GAS JRC.C.3	488 - MAEIP Market Analysis for Energy Infrastructure Projects	This work package (WP) develops a framework of different techno-economic models (e.g. global TIMES model TIAM & JRC EU-TIMES) to analyse the multidimensional aspects of energy security, such as access to energy sources or shocks to the energy system (e.g. abrupt supply changes). It will assist decision making taking into account synergies and trade-offs between energy security and EU policy goals, especially with short to mid-term implications. This WP coordinates the horizontal activities in the area of Security of Supply, including GIS and data gathering and processing (e.g. infrastructure projects, national and cross-border). This WP contributes to the implementation of the Energy Union Roadmap initiatives, especially to the generation of the 3rd and 4th lists of Projects of common interest (PCIs) and the Infrastructure Forum. Close cooperation is foreseen with other units and directorates, particularly with B1 and C7 regarding data sharing, with I1 regarding sensitivity analysis (mostly particular application and case studies) and indicators, and with C7 regarding data sharing and definition of common scenarios to analyse. The scientific output will be maximised, publishing in well-known peer reviewed journals key research results.	JRC.C.3 Anca COSTESCU	3.2.c	ENER	JRC	SIKOW-MAGNY Catharina (ENER), SZOLYAK Adam, ERMACORA Florian (ENER B3)	CLIMA COMP DEVCO ECFIN ENV FISMA SG	Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2016 30/12/2019	INS-RS	3	Study on international oil and gas markets	Report on the inter-links between European and international oil markets with emphasis on security of supply (e.g. disruption scenarios). Furthermore, the inter-relations between oil and gas markets will be explored with an emphasis on security of supply. Results from the analysis conducted within the WPk will be presented in a scientific paper. In particular, issues regarding the European security of energy supply from the oil-gas nexus will be presented. The paper will be a 2.1.1 Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI).	04/12/2018	Science-for-policy reports
												5	Economic impact of missing gas	In the framework of the new Regulation on Security of Gas Supply, we study the economic impact of missing gas in terms of price of replacement fuels and/or value of lost service. Comparisons will be made with the cost/benefit analysis of new infrastructure to be built.	17/09/2019	Science-for-policy reports
244 - CSPI JRC.E.3	3440 - PSES Cyber-security and Privacy in the Energy Sector	This WP aims at supporting the Energy Union Package (COM (2015) 80 FINAL) and the DSM package (COM(2015) 192): (1)Analysing technological means to facilitate the energy transition through smart grids and smart home applications, under a cyber-security and privacy perspective (2)Studying the application of the virtual-currency and distributed ledger paradigms to create a seamless internal energy market that benefits citizens The WP will support the Smart-Metering Data Protection Impact Assessment recommendation (2014/724/EU) and the Best Available Technique process (2012/148/EU): (1) Providing technical advice to DG-ENER on the testing phase of the DPIA testing phase (2) Chairing the follow-up of the Best Available Techniques process The WP will support the shaping the coming Energy Cyber Security Strategy through the participation to the Energy Cyber-security Expert platform and its follow-up The WP will support DG-ENER and ACER in the definition of the Energy Network Code for Cyber-Security through: (1) The participation in the editorial team of the EG2 and EG1 of the EC Smart-Grid Task Force (2) Expanding the experimental and research activities in the Energy Cyber-Security Domain	JRC.E.3 Igor NAI FOVINO	3.2.c	ENER	JRC	Manuel Sánchez-Jiménez	CNECT GROW	ACER - European Agency for the Cooperation of Energy Regulators (ACER)	01/01/2016 13/12/2019	INS-RS	3	Smart-House Cyber-Security and Privacy	This deliverable will investigate on the "last mile" issues related to the interactions between smart-home devices, smart-metering systems and smart-grids under cyber-security, privacy and safety perspective. To achieve this goal the G.6 IoT platform will be integrated together with the Energy Interoperability laboratory to conduct on-field network and interoperability analysis. The results will be used to provide support to energy package policies and standardisation efforts.	14/12/2018	JRC technical reports
												344004	Energy Cyber-Security Strategy and Network Code	This deliverable is intended to provide support to the establishment of the Energy Cyber-Security Strategy (JRC is already contributing as member of the editorial team of the EG1 and EG2 EC Energy Smart-Grid Task Force) and to pave the way to the preparation of the Energy Network code on Cyber-security, together with DG-ENER and ACER. The activity will foresee mainly the participation to the related working groups, and the drafting of technical reports supporting the development of the two policy initiatives.	13/12/2019	JRC contributions to policy documents
												4	DLT in micro Generation: Energy Market and Cyber-Security	This deliverable, based on the results of what produced in 2017, will further explore the use of distributed ledgers in energy prosumer architectures while investigating in parallel on cyber-security issues related to the new energy market architecture. The results will support both the definition of the coming European Energy Network Code for cyber-security and the Energy Market design policy package.	14/12/2018	JRC technical reports
												5	Scientific publications	The results of the scientific activities developed in the others deliverables, will be published in peer-reviewed journals	14/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												6	Research Results in Energy cyber-security	This workpackage is a balanced mixture of research, technical development and policy support. Scope of this deliverable is that of aggregating all the research results in publications in peer-reviewed journals and conferences	14/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
208 - INTEROP-STORE JRC.C.4	3478 - SGI Smart Grid Interoperability	This work package aims to support the implementation of the Energy Union Roadmap's Actions on "Infrastructure" (interconnection developments), "Electricity" (security of supply measures), "Industrial competitiveness" and "Cross-cutting measures", and the Smart Specialization Strategy (S3) in the field of smart grids, by - developing an experimental platform and methodologies for testing the interoperability of smart grids, in line with the work of the European Standardization bodies - providing data, analysis and capabilities on smart grid interoperability. - mapping competencies, infrastructure and facilities of smart grid laboratories at EU level and beyond - analysing the role of ICT standardisation in enabling smart grid interoperability, grid management and distribution automation - studying the role of cybersecurity in the protection of critical infrastructure and in ensuring security of supply in smart grids - running the JRC-Ispira branch of a network of laboratories, with specific focus on smart grids and electric vehicle interoperability, in order to scientifically support the development of European energy and electricity policies in that area.	JRC.C.3 Evangelos KOTSAKIS	3.2.c	ENER	JRC	Manuel Sanchez Jimenez (ENER B.3)	CNECT GROW REGIO	CENELEC - European Committee for Electrotechnical Standardization (CENELEC)	01/01/2016 30/12/2019	INS-UR	01	Smart grid labs inventory	This deliverable aims at expanding the mapping exercise of competencies, infrastructure and facilities of smart grid laboratories developed at EU level and beyond.	31/12/2018	JRC technical reports
												4	Electric Vehicle (EV) charging and Smart Grid power quality	Electric vehicles (EVs) penetration brings a compelling potential to reduce greenhouse gas emission. However, fast charging stations could create non-linear distortions that may cause failure of electrical equipment and compromise the power quality of Low Voltage (LV) grids. Multiple charging stations bear potential concern regarding power quality of the power systems feeding them. This work focuses on measurement and quantitative worst-case estimation of the impact of multiple charging stations on the quality of the power grid in terms of distortions, harmonics, voltage levels, etc. The output of this research will underpin the fact basis for standardisation, testing methods, and for policy makers to set the right legislative and regulatory framework for deploying fast chargers in the future.	30/12/2018	JRC technical reports
												6	Interoperability between Electric Vehicle (EV), Advanced Metering Infrastructure (AMI) and Supervisory Control System (e.g. SCADA)	One of the main objectives of the Smart Grid lab is to assess technological implementations according to proposed standards, use cases and processes in conjunction with applicable reference architectures. Towards this end, this work focuses on the inter-operations between EVs, their charging equipment (EVSEs) and an integrated system of smart meters, communications networks, and back-end data management systems that enable two-way communication and ultimately two-way energy flow between utilities and customers (V1G and V2G). The output of this work will underpin policy making through counselling regulatory and legislative measures in this field and help industrial innovation regarding the modernization of the electricity grid and exploiting economies of scale through harmonisations.	30/12/2019	JRC technical reports
271 - EMSI JRC.C.3	3480 - EDSC Emerging Distribution Systems and Consumers	This work package aims to address the key challenges of the "Clean Energy for all Europeans" legislative proposals for what concerns the role of consumer/prosumer in the emerging electricity systems, mainly with regard to the new design of the retail markets. More specifically, the WP focuses on: - monitoring smart grid developments in Europe with special focus on active consumers, demand side management, vulnerable consumers, energy poverty, energy communities, retail market dynamics and emergent distribution system architectures (micro grids); - modelling (agent based) of energy consumer's choices, considering energy contracts and services (or employing social-technical simulation tools (i.e. agent based) to analyse the interaction between smart grid infrastructure (smart grid technologies + electricity network), consumer (demand side management, prosumers, vulnerable consumers) and other market stakeholders; - conducting independent performance assessment and cost-benefit analyses of smart grid projects in	JRC.C.3 Anna Maria MENGOLINI	3.2.c	ENER	JRC	Manuel Sanchez Jimenez, DG ENER.B.3	CNECT GROW JUST REGIO		01/01/2016 31/12/2019	INS-RS	7	Prosumer performances through agent-based models	Peer-review paper on Consumer/prosumer performances through agent-based modelling	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												8	Energy poverty and vulnerable consumers	Perspectives on energy poverty and vulnerable consumers based on evidence from smart grid projects and analysis of data from current consumer studies (e.g.: DG JUST studies on residential prosumers and billing information);	30/11/2018	Science-for-policy reports

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		Europe focusing on scalability & replicability studies, energy communities and knowledge sharing & communication actions.										9	Smart cities and communities - evidence from SG projects	Overview of the smart cities and communities context through the analysis of the smart grid projects in the JRC database in order to gain insight and support decision making with regard to novel solutions, new market designs, business models, stakeholders, etc.	30/11/2018	Science-for-policy reports	
208 - INTEROP-STORE JRC.C.4	3481 - SGSHI Smart Grid and Smart Home Interoperability	This work package aims to support the implementation of the Energy Union Roadmap's Actions on "Electricity" (Market design), "Retail" (New deal for consumers), "Industrial competitiveness" and "Cross-cutting measures" by - providing data, analysis and intelligence on smart grid and smart home interoperability. - developing and interlinking load simulation tools and agent-based models to capture the behaviour of electricity consumers. - assessing performances and interfaces of the smart grid cyber and physical layers. - running the JRC-Petten branch of a network of laboratories, with specific focus on smart home integration and distributed energy resources, in order to scientifically support the development of European energy and electricity policies in that area.	JRC.C.3 Thomas SELDIS	3.2.c	ENER	JRC	AILIO Eero (ENER B.3); CRAYE Matthieu (ENER A.3)	CLIMA CNECT DEVCO ENV GROW HOME			01/01/2016 30/12/2019	INS-UR	01	Demand response test case	Development of a laboratory test bed to simulate Demand Response use cases based on price, load or peak load shifting stimulus. F03's real time simulation systems and Advanced Metering Infrastructure will also be integrated in the test bed to allow the assessment of interoperability aspects. The test bed will be based on scenarios of the CEN-CENELEC-ETSI working group and recognised European and international standards.	01/12/2018	JRC contributions to standards
													02	Load simulation demonstrator	In the future households will also become producers of electric energy e.g. by photovoltaic and therefore feed in electric energy at low-voltage level into the distribution grid. To study these effects in advance simulation can be used. These simulations require combined modelling of the grid together with the detailed modelling of the loads and sources within the grid. This will be done by combining real time simulation capabilities (Opal-RT) with a load simulator (resLoadSIM).	01/12/2018	Technical systems
													03	Consumer behaviour test case	Development of a laboratory test bed for the integration of consumer/prosumer performances through agent-based modelling in the assessment of demand response related use cases. The test bed will be based on scenarios of the CEN-CENELEC-ETSI working group and recognised European and international standards.	01/12/2018	JRC contributions to standards
													04	Neighbourhood load simulator	In the future households will also become producers of electric energy e.g. by photovoltaic and therefore feed in electric energy at low-voltage level into the distribution grid. To study these effects in advance simulation can be used. These simulations require combined modelling of the grid together with the detailed modelling of the loads and sources within the grid. This will be done by combining real time simulation capabilities (Opal-RT) with a load simulator (resLoadSIM).	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													05	Integration of models and study of impact of prosumers/consumers behavior on retail markets	Retail electricity markets and the impact of consumer/prosumer load will be studied through the creation of a test system. Different models will be integrated under the smart grid/smart home laboratory test bed including local generation and storage, local energy, end-user services, DSO and retailers functions and considering the impact of demand response programmes and consumer behaviour.	01/12/2018	Technical systems
													06	Interoperability assessment lab	Finalization of the design, construction and implementation of a Smart Grid Interoperability laboratory in Petten. The facility will count with a Smart Home laboratory, micro-grid, including PV and battery storage infrastructure, a real time simulation system and hardware in the loop testing capabilities. It will serve to assess interoperability aspects of the integration of smart home and retail market in smart grids with a focus on the consumers/prosumers active role in the new energy market.	01/12/2018	Technical systems
													08	Real time simulation platform	Development of a geographically-distributed real-time simulation platform by interconnecting the systems in Petten (OPAL) and Ispra (RTDS) using the Intersite link or the Geant network for data exchange. It includes the development of the specific hardware and software interfaces that will allow the execution of distributed models using both systems in synchronization. A technical report describing the concept, methodology, technical aspects and use cases will be produced.	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													09	Smart Grid Interoperability assessment methodology	Technical report describing the methodology to be used in the laboratory to carry out the interoperability tests, including a technical description of the integration of the different test beds and laboratories (Petten, Ispra and EPIC) and the creation of the Use Cases, the Basic Application profiles and the Basic Application Interoperability profiles templates and respective repositories. An automated way to create the Test Cases is going to be herein developed. Test Cases will be created automatically based on the BAIOP and saved in the repository to be used in the laboratory for the experimental part. Different examples in the areas of the work package will be also presented. The methodology will be developed specifically for the laboratory based on the CEN/CENELEC/ETSI reference architecture. This will include the implementation of the methodology with selected Use Cases	01/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													10	Implementation of the Smart Grid Interoperability Methodology	Implementation requires: 1. Creation / Selection of Use Cases: selection of Actors, description of functions and creation of architectures (on the different layers of the SGAM). UC should be based on the available test beds of the laboratories. 2. Creation of Basic Application profiles (BAP): includes the in depth analysis of relevant SG standards and protocols. Include the dominant standards (EN 61850, EN60870-series, IEC 62746 series etc) which should be closely related to the equipment of the laboratories. 3. Creation of Basic Application Interoperability profiles: closely related to the previous one and it is the creation of the experimental specifications for each BAP and the respective test cases The three tasks imply a recurrent activity which will result in the creation of files to be uploaded in the relevant repositories. Experimental design and sensitivity analysis will follow based on the methodology, resulting in identifying gaps in the standards and ranges.	01/12/2018	JRC technical reports
													11	Analysis of the prosumers/consumers behavior and smart home operation in different Member States	Use the smart home lab to test scenarios for different typical households for the different MS. Verify the interoperability of appliances (and smart meters) for these scenarios and assess the impact of applying the same demand response (DR) cases to different households and with different retail market context (the last two depending on the MS). Example (not to be put in the document): a DR case of energy consumption shifting from morning to midday, will have different benefits (or not) for a home in Germany with PV in the winter to a similar home in Portugal, where climate, consumer behaviour and market context are different.	01/12/2018	JRC technical reports
													12	Analysis of energy management system for batteries	Develop energy management system for controlling battery charging/ discharging processes in a real time (with minimum time step of 1 min). The energy management system comprises real time input data updates (e.g. residual demand and price forecast in the local electricity grid), communication with the battery system, and management algorithm (obtained from existing literatures). The battery equipped with energy management system in intended to be applied in various Smart Grid activities like load shifting, voltage control etc.	01/12/2018	Technical systems
													429 - SEC-GAS JRC.C.3	3520 - AFEIP Assessment Framework of Energy Infrastructure Projects	Energy infrastructure projects will be deployed in the coming years as a key contributor to the achievement of the Energy Union. These projects will have to be evaluated with regards to the different dimensions considered in the Energy Union Strategy and the related policies. There is a need to develop a methodological approach to assess project proposals from the techno-economic viewpoint, including methodologies for cross-border cost allocations (CBCA), and decision-making procedures for European and international energy infrastructure projects. This approach will be based on the use of the right models fed by reliable data, which will allow a fair comparison among alternative projects. This WP contributes to the Energy Union Roadmap, especially to the generation of the 4th list of Projects of Common Interest (PCIs) and the Infrastructure Forum. In particular, an extended pan-European survey of society's willingness-to-pay for the security of energy supply will be conducted, for identifying the infrastructure needs from the citizens' point of view. Furthermore, the interrelationships between the major energy players (corporations) will be identified. In all deliverables, methodological approaches will be developed, which can also be used for other priorities of the Energy Union.	JRC.C.3 TILEMAHOS EFTHIMIADIS	3.2.c
7	Governance of int. energy infrastructure projects	This report will provide insights and best practices for the governance and decision making processes of international energy infrastructure projects.	28/09/2019	Science-for-policy reports													
8	Energy - corporate Networks	This study will indicate the major energy players in the EU and will clarify the challenging questions of "How are they linked and who controls? "	15/11/2019	Science-for-policy reports													
429 - SEC-GAS	5082 - GMF	A liquid, well diversified, hub-based gas market is considered as a key contributor to Energy Security. The delay in the implementation of the third package has been identified by different stakeholders as the most important contributor to not achieving such a good quality market in the EU and neighbouring countries. Proposals for a Gas Target Model (GTM) for the EU have been developed and updated along the last years by ACER and by the Florence School of Regulation. The GTM must be accompanied by the adequate operational Network Codes that facilitate its implementation, and by the adequate creation of market regions with their Virtual Trading points and associated IT platforms. Two points not to forget are the evolution of the demand and of the prices, in the EU and in the rest of the world; Interaction Regulation / market dynamics.	JRC.C.3	3.2.c	ENER	JRC	Sofia MOSEF	COMP DEVCO			01/01/2017	INS-DC	D3	Analysis of gas demand and prices in EU	The deliverable will include the identification and selection of data sources regarding gas demand and gas prices in the EU and produce statistical analyses of various types. It will include a review of structure of the demand, a study of available models to analyse demand and prices and a study of relations with other markets (electricity, oil, other regions).	21/12/2018	Science-for-policy reports
													D4	Monitoring the implementation of the Third Energy Package	Analysis of the state of implementation in specific Member States of the Third Energy Package.	20/12/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
JRC.C.3	Gas Market Framework	The aim of the work package is to get an accurate understanding of the functioning of the EU gas market, which involves three major areas of work • Review the state of implementation of the Third Energy Package regarding gas in the EU, including definition of market areas, present and expected, market players, present and expected situation of Network codes implementation. Follow up of progress in the coming years, identifying possible deficiencies in the implementation. • Review of the different types of contracts and hub design in the gas market. Review of gas price	Anca COSTESCU					ECFIN GROW		31/12/2020		D5	An analysis of the energy wholesale and retail market	This study will provide relevant information on energy markets, e.g. such as wholesale, retail, energy prices, licences and regulatory aspects. For complementing the ongoing efforts not only day-ahead market but also intraday and balancing markets in each MS. Also the market of the derivatives (financial market) will be analysed. Additionally also more targeted markets will be analysed (statistics, maps, indicators) in the field of energy security, market access and liquidity, competition, investment analysis, flexibility of the power system, market design, generation and resource adequacy, infrastructure and related issues. This is a very large deliverable, which could contain up to 4 reports.	31/12/2019	Science-for-policy reports
271 - EMSI JRC.C.3	5094 - GEMD Greek Electricity and Gas Markets Design	The purpose of this Administrative Arrangement between JRC and SRSS is to provide support on issues related to Electricity Market reforms in Greece. The scope of this project is to help the Greek Energy Regulator to implement significant reforms in the Greek electricity market with the aim of adapting the latter to the EU target model. More specifically, the support activities cover the following areas and topics: Codes and Manuals, Compliance of Codes to the Target Model, Proposals on market power mitigation measures, Validation of IT systems adopted or developed by the System and Market Operator, Structure of the Dry-Run Period for market arrangement, Establishment of a Clearing House and a Credit House, Auction-based Capacity Mechanism, Framework for Demand Response.	JRC.C.3 TILEMAHOS EFTHIMIADIS	3.2.c	SG	SG	KASPAR RICHTER	ENER		14/12/2016 14/12/2019	CON-AA	65	Assessment of the auction results	Assessment of the auction results, to be conducted immediately after the auction.	05/06/2018	JRC technical reports
												71	Estimation of the VOLL	Estimation of the VOLL in the Greek electricity market, as an indication of an appropriate price cap. The study could involve a mixture of techniques, such as surveys, stated preference choice experiments or a value at risk approach, so as to infer the willingness to accept payments for an outage and the willingness to pay to avoid an outage, across categories of consumers (domestic, SME, industrial and commercial consumers).	01/02/2018	Science-for-policy reports
												81	Greek gas target model	This deliverable will provide technical support to the Greek authorities regarding the convergence of the national gas market structure and regulatory framework, to the European gas 'Target Model'.	13/12/2019	Science-for-policy reports
568 - WEFE Nexus JRC.D.2	6320 - WEFE - Energy WEFE - Water and Energy Analyses	The objective of this WP is to assess the water-energy nexus in a low carbon energy system, making use of expertise, models and scenarios already available at the EC (such as the JRC models Dispa-SET and LISFLOOD, or ENER's EU Energy Reference Scenario), in order to i) identify water/energy management and production strategies that result in overall benefits to the economy and society at broad, with a more balanced water demand and availability, especially in water-stressed areas, and ii) provide modelling-based estimations of the baseline conditions and interactions of water quantity, water quality, and energy production. The deliverables resulting from this WP will contribute to i) understanding the impacts and of water resources on the operation of the energy system, and vice versa, ii) the spatial analysis and projection of water and energy requirements of agricultural and urban areas in different regions, as well as iii) producing insights for a better management of water and energy resources. This work is needed for supporting the impact assessments and communications related to the Energy Union Actions, and data analysis and intelligence. The project is also relevant in the frame of the ongoing collaboration with DoE/TEC WG on Technology. The geographical scope of the models is Europe (EU + neighbouring countries) and Africa.	JRC.C.7 Ignacio HIDALGO GONZALEZ	3.2.c	ENER	JRC	n/a	AGRI CLIMA DEVCO ENER ENV ESTAT NEAR REGIO RTD	ICPDR - International Commission for the Protection for the Danube River EEA - European Environment Agency IEA - International Energy Agency SET-Plan - Strategic Energy Technology Plan (SET Plan) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE US DoE - US Department of Energy (DOE)	01/01/2018 31/12/2020	INS-RS	201801	Analysis of the potential of the water system as a source of flexibility for the European power system	Study of the water infrastructure as a source of flexibility for the power system, based on a mapping of the energy needs from the water sector (including pumping, transport, distribution, collection, treatment, and desalination services), quantifying the: i) energy storage potential of the water supply and distribution network, ii) potential of the water treatment plants and desalination plants to integrate peaks of renewable energy production. Initially focused on selected European urban regions, the results will be generalized into broader policy recommendations with special attention to the renovation of water infrastructure to cope with increased climate and energy production variability. They will support the main WEFE reports on the "Potential for water infrastructure to enable electricity system flexibility in Europe" and "A spatial baseline analysis and projection of water and energy requirements of agricultural and urban areas in the Mediterranean region".	31/12/2018	JRC technical reports
												201802	Development and application of models for analysing the interactions between the water and power sectors	Case studies based on the methodologies developed during the WATERFLEX exploratory project (Water Resources Providing Flexibility to the European Power System) analysing (with the Dispa-SET and LISFLOOD models) the implications of water resource availability on power system economics and operations, as well as the impacts of power production on the water systems under different scenarios, in Europe and the Mediterranean. This WP includes potential model developments. It will also address the harmonisation of hydromorphological assessment in ecological status/potential classification for the prioritization of rivers for conservation and management of hydropower and infrastructures barriers in Europe through the WFD Common Implementation Strategy (CIS) task group on Hydromorphology. These developments will contribute to the main WEFE report on the "Potential for water infrastructure to enable electricity system flexibility in Europe".	31/12/2018	Scientific information systems and databases
												201901	The role of renewables in addressing water demands of the African energy sector	Analysis of the feasibility of renewable energy production at different scales in Africa, including and estimation of water demand from the African energy sector (primary energy supply and transformation) with publicly available scenarios and projections (e.g. JRC's Global Energy and Climate Outlook, IEA's World Energy Outlook, or DOE's International Energy Outlook). Grid-connected or off-grid solutions will be assessed taking into account the economic aspect. The deliverable will explore the potential role of renewables for improved water availability and access to affordable, reliable, sustainable and modern energy for all. Integrated energy and water (e.g. access, irrigation) analysis will support policy formulation, implementation and monitoring. This deliverable will contribute to the main WEFE report "Fairness in access to resources: addressing trade-offs in water, energy, food and ecosystem security in Africa".	01/07/2019	JRC technical reports
												201903	EMHIRE-Hydro	Development and dissemination of the EMHIRE (European Meteorological derived high resolution renewable energy source generation time series) hydro dataset, for water-energy modelling in Europe, in particular supporting METIS-based (ENER's power system model) analyses.	31/12/2019	Scientific information systems and databases
271 - EMSI JRC.C.3	6353 - ERMWI Electricity Retail Markets and Wholesale Interfaces	Electricity Retail Markets and Wholesale Interfaces deals with the relationships among transmission and distribution of electricity, and wholesale and retail markets. It is a cross-disciplinary WPK that will provide insights both from a technical and from an economic standpoint to support the provisions for reinforcement of EU retail markets, as included in the "Clean Energy for all Europeans" package.	JRC.C.3 SILVIA VITIELLO	3.2.c	ENER	JRC	n/a	COMP		01/01/2018 31/12/2018	INS-RS	3	Econometric analysis of wholesale prices and retail markets relationship	This deliverable consists in a scientific article investigating the relations among wholesale market prices and retail market prices. It will be developed in cooperation with Unit I.1	30/06/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												4	Distribution Systems Operators (DSO) Observatory -2018 Update	The Distribution Systems Operators (DSO) will be updated, by also including, among others, relevant dimensions for the interactions between distribution and transmission system operators. This report will be accompanied by a summary of the highlights for easy consultation by policy makers and industry (with special visualization and consultation tools).	31/10/2018	Science-for-policy reports
												6	Reference Distribution Network Development	Assessment of policy options linked to distributed generation penetration, demand response integration via representative distribution network models.	28/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
340 - FINSTAR JRC.B.1	6405 - DEMA2 Detection of Energy Markets Abuses 2	In the context of the Energy Market Union priority, DEMA-2 will develop quantitative analyses in support to DG ENER ongoing and foreseen initiatives associated to the wholesale energy market integrity and transparency project (ACER-REMIT project), whose primary objective is to deter market manipulations. The work is the continuation of DEMA and it will be developed in collaboration with Unit I3 and ACER will provide data. Selected experts in the field of energy market would also contribute. DEMA analyses carried out during 2017, were mostly exploratory activities based on a limited set of data due to technical impediments in accessing ACER data. As the ACER-REMIT project progresses and more and better quality data would be available, DEMA-2 would provide new methodological tools for: (1) the definition of statistical patterns relevant to the detection of market distortions; (2) the definition and computation of variability indices of energy prices; (3) implementation of the procedures as in (1) and (2).	JRC.B.1 Andrea PAGANO	3.2.c	ENER	ENER	n/a		ACER - European Agency for the Cooperation of Energy Regulators (ACER)	15/12/2017 15/12/2019	CON-AA	MoDoMA	MODELS FOR THE DETECTION OF MARKET ABUSES	The deliverable will provide a definition of statistical patterns relevant to the detection of market distortions and conduct an evaluation of possible methodological gaps with respect to ACER needs. Implementation of new routines for detecting anomalies and/or market abuses. The main goal is to provide sound statistical procedures and to integrate them with the software used by ACER.	15/12/2019	JRC technical reports
												WhEMIT	WHOLESALE ENERGY MARKET INTEGRITY AND TRANSPARENCY	The deliverable explores the impact that transparency might have on potential energy market manipulation, in view of making ACER's commercially non sensitive trade database available for scientific purposes. Main goal is implementing new routines for computing market concentration and variability indices for prices and volumes.	15/12/2018	JRC technical reports
3.2.d energy efficiency and local climate and energy action - support the implementation of EU energy efficiency legislation, including on energy performance of buildings and on efficient heating & cooling; provide technical support for the development of the legislative framework for after 2020; analyse the development and deployment of energy efficiency technologies; assess technology innovation in energy-intensive industries; support the Covenant of																
		The objective of this WPK is to assess the role of technology innovation and the policy options for the reduction of energy consumption of end-use products. The WPK focuses in particular on supporting EU sustainable product policies, in particular the Eco-design and Energy Labelling and indirectly the Circular Economy. These are key EU energy efficiency policies in the third pillar of the Energy Union, i.e. the moderation of the energy demand. These policies are expected to deliver by 2020 half of the EU energy efficiency target. The WPK analyses the current energy consumption of key products in different sectors and the technical and economic energy efficiency potential. The WPK will develop advanced methodologies and indicators to measure energy savings resulting from energy efficiency policies. Finally the WPK investigates innovative policies, financing and business models for the adoption of high efficient equipment and systems through energy saving companies (ESCOs). Special emphasis will be placed on Information and Communication Technologies (ICT), motors and drives, smart and connected appliances, and lighting. In ICT the research is focused on technologies to reduce the fast growing energy consumption associated to the internet and cloud computing. In particular it covers broadband equipment and data centres, including servers, storage and networking equipment. The work on data centres is not yet covered by the Eco-design measure and therefore of particular importance due to the uniqueness of this research at European level. Of particular importance are the further development of the European Codes of Conduct for energy efficiency in ICT as a unique research implemented in collaboration with major industry stakeholders and research										1	5 revised European Codes of Conduct for Energy Efficiency in the ICT	Information and Communication Technology (ICT) is the fastest growing electricity load due to internet (e.g. social media, e-shopping, etc.), the mobile communication (e.g. 5G) and cloud computing. The European Codes of Conduct are pre-normative and pre-regulatory European initiative managed by the JRC in collaboration with research institutes, academia and industry to improve energy efficiency in ICT. Currently there are 5 European Codes of Conduct for: Broadband Equipment, External Power Supplies, Digital TV Services, Data Centres and UPS. Due to fast technological development under this deliverable the technical specifications (e.g. power consumption levels and types of equipments) will be revised in agreement with stakeholders. The deliverables are Technical Reports (one for each Code of Conduct), including best practices examples.	31/10/2018	JRC technical reports
												2	Methodology to assess effectiveness of the energy saving policies since 1990	Peer reviewed articles based on research on new and innovative methods to assess energy savings resulting from energy efficiency policies. These methods are based on econometric modelling (e.g. panel model, data envelop analysis, etc.). Focus of the research is on EU products policy achievements (e.g. Eco-design, the Energy Label, the Energy Efficiency Directive, etc.). Part of the research activity is to assemble the database of EU and MSs energy efficiency policies since 1990. The research will also compare the results of the modelling with other more traditional methods to evaluate policy induced energy savings such as decomposition analysis, randomized control trial (RCT), longitudinal study, etc.	28/09/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

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326 - EE JRC.C.2	607 - EEinPr Energy Efficiency in Products	centres. The WPK contributes to the development of international (IEC) and European standards (CEN/Cenelec) on energy efficiency measurement methods. The WPK will assess social practices related the energy consumption in products. This WPK makes public the findings in JRC reports, including the Status Report on Energy Efficiency, and peer-review publications. The data collected in this WPK will feed into the Energy Efficiency Platform (E3P), thus contributing to its success. This work is needed because no other public or private institution is able to carry it out in an independent manner. Stakeholders, including key manufacturers, stress the important role of the JRC in energy efficiency in products.	JRC.C.2 PAOLO BERTOLDI	3.2.d	ENER	JRC	NUIJ Robert (ENER.C.3)	CLIMA CNECT ENV GROW JUST	- European Telecommunication Network Operators' Association CEN - European Committee for Standardization CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EDCA - European Data Center Association ETSI - European Telecommunications Standards Institute (ETSI) IEA - International Energy Agency IEC - International Electrotechnical Commission ISO - International Organization for Standardization (ISO) ITU - International Telecommunication Union	01/01/2014 31/12/2019	INS-RS	3	Impact of Internet of Things (IoT) on Energy Efficiency	The Internet of things (IoT) is the inter-networking of physical devices, products, appliances (also referred to as "connected devices" and "smart devices"), buildings, and other items embedded with electronics, software, sensors, actuators, and network connectivity which enable these objects to collect and exchange data. IoT is predicted to have an important impact on energy efficiency of products and systems, allowing to optimise energy consumption with the exchange of data and feedbacks from control units. The report investigate the latest developments on IoT in relation to energy efficiency in products, showing exemplary applications and innovative solutions, together with market and technology developments. Also the additional consumption due to communication devices and sensors will be investigated. Policies that	31/03/2019	Science-for-policy reports
												4	Sustainable social practices with focus on products and systems for the food preparation	A large amount of energy and water is used by citizens and business for the food preparation and consumption. This deliverable analyses possible energy and water savings associated with the reorganization of social practices related to food production and consumption. Traditional sustainable energy policies are designed by addressing in isolation and within sectorial boundaries the challenge of reducing energy inputs needed for technologies and services responsible for food preparation and consumption. This deliverable aims to identify the limitation of this "traditional" approach and to show how, by focusing on changing social practices (e.g. related to food production, distribution and consumption, or more generally related to comfort, cleanliness and convenience), allows facing this challenge in a systemic way, which very effectively complements traditional policy approaches. Some new sustainable energy policy options based on Sustainable social practices will be identified.	28/02/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-E) or Social Science Citation Index (SSCI)
												5	Latest Demand Response Market Developments	Article 15.8 of the Energy Efficiency Directive (EED) requests Member States to open their energy markets to Demand Response. At the end of 2016 many national energy markets in Member States were still close to demand response participation or just starting to open, by preparing the technical rules by the TSO and the regulatory framework. By building on the JRC Demand Response survey of 2016, under this deliverable and new market survey and status will be prepared as input to the assessment of the EED and the overall competitiveness of the electricity market.	31/03/2019	Science-for-policy reports
												6	Appliance Energy Consumption and Stock Model	Energy consumption data collection for individual equipment/appliance (lighting, electric motors, white goods, ICT, etc.) based on equipment/appliance sales and the installed stock data. The data is collected from market sales data available and literature search. Additional information will be collected through analysis of in-situ energy consumption monitoring campaigns. This deliverables includes the creation of a stock model to assess the impact of EU product policies.	31/07/2019	Science-for-policy reports
												7	Market Assessment of Energy Service Companies	The deliverable will present a detailed analysis of the current market of Energy Service Companies (ESCOs) in the EU Member States and other countries. The market assessment includes the analysis of the barriers and drivers for the development of the national ESCO markets, as well indicators (e.g. number of projects, level of investments, sector covered, etc.) on the developments of each national market. The report will particularly focus on Energy Performance Contracting. An expert workshop will be organised to collect information on market developments and best practices.	30/06/2018	Science-for-policy reports
												8	Status Report on Energy Efficiency	The Energy Consumption and Energy Efficiency Report is produced every two years to summarise the status of energy consumption and energy efficiency trends in EU-28, in the four main energy consuming sectors: residential, tertiary, transport. The analysis includes also consumption drivers such as economic activity, population, heating/cooling demand, household and building characteristics and energy prices. It is based on a simple econometric model and decomposition analysis using Eurostat data.	31/07/2018	Science-for-policy reports
326 - EE JRC.C.2	748 - EFIS Energy efficiency in industry and energy supply	The objective of this WPK is to assess the role of technology innovation including large scale deployment of technology best practices in the reduction of energy consumption and greenhouse gas emissions in the European energy-intensive industries and its impact on the industrial competitiveness. This is achieved by analysing the evolution of the industry up to 2050 in different scenarios. The analyses are carried out in detailed bottom-up models at facility level and with a European coverage. Especial emphasis will be put on the pulp and paper industry and in the dissemination of previous results of (from the chemical industry). The close follow-up of the technology innovation trends in the industry serves to assess the role of energy efficiency as a contribution to the moderation of the energy demand (third pillar of the Energy Union) and contributes to the analysis of the role of price formation of the ETS in the uptake of low carbon and energy efficient technologies, that is an component of the fourth pillar of the Energy Union. Moreover, identifying missed cost-effective investments supports the design of policies aimed to overcome the barriers that precluded those investments; this is identified as the way forward in the 2016's state of the Energy Union package. The objectives of the Energy Efficiency project regarding the energy-intensive industries are fully taken up by this WPK. This WPK makes public the findings in JRC reports and peer-review publications. The datasets resulting from this work will be disseminated as open source/open data. This work is needed because no other public or private institution is able to carry it out in an independent fashion. Different stakeholders stress how much their sectors have historically improved, removing credibility to the role of prospective innovations, and moulding the boundary conditions to favour their interests. The JRC bases its estimates on independent assumptions and sources and uses the energy system trends established by the different Commission's services as boundary conditions. Hence the JRC acts independently of any commercial interest in support to the European industrial policy, ensuring as well the needed transparency of the assumptions, hypotheses and data.	JRC.C.7 JOSE ANTONIO MOYA RIVERA	3.2.d	ENER	JRC	HODSON Paul (ENER.C.3)	CLIMA GROW	SET-Plan Com - SET-Plan Community	01/01/2016 31/12/2019	INS-RS	1801	Scenarios for the pulp and paper industry	Report analysing the role of technology innovation to reduce greenhouse gas emissions and energy consumption in the pulp and paper industry up to 2050. The model will follow a bottom-up approach at facility level. The report will also release the content of a database with the information at facility level about the pulp and paper industry in the EU. This database contains the initial estimation of the feedstock and energy consumption as well as GHG emissions. This deliverable will serve to feed policy developments impacting the competitiveness of the EU Forest-based Industries.	31/07/2018	Science-for-policy reports
												1803	Lessons learned from bottom-up models of energy-intensive industries	Study gathering common findings from previous JRC's analyses about energy-intensive industries. It will analyse how barriers limit the improvements offered by potential innovative technologies and it will discuss how the uptake of technology innovations is included in bottom-up models. It will also assess the potential effect of identified energy-efficiency measures on production costs; this last aspect will provide a valuable input to the biennial cost and prices report from the Commission.	31/08/2018	Science-for-policy reports
												1901	Technology progress in the cement industry	Report about the technology progress made by the cement industry in last 15 years; and its implications for EU policies	31/12/2019	Science-for-policy reports
												1902	Update of Energy Efficiency, GHG emissions, and production costs prospective scenarios for European energy-intensive industries	This report will update the models, data and scenarios of the five energy-intensive industries already analysed by the JRC. It will include an explicit assessment of the evolution of the production costs in the sectors modelled.	31/12/2019	Science-for-policy reports
271 - EMSI JRC.C.3	2270 - HRE2050 Heat Roadmap Europe 2050	This WP is the contribution of the JRC to the H2020 project "Heat Roadmap Europe 2050" (HRE2050, CSA 695989), which aims at developing model-based sustainable heating and cooling strategies for 14 MS of the EU.	JRC.C.7 Ignacio HIDALGO GONZALEZ	3.2.d	ENER	ENER	Kostis Sakellaris (ENER.A.4), Eva HOOS (ENER.C.3)	RTD	SET-Plan Com - SET-Plan Community	01/03/2016 28/02/2019	CON-IA	2	Evaluation of EU heating and cooling scenarios	Methodology report comparing the scenarios between the annual JRC-EU-TIMES and the hourly EnergyPLAN tools.	31/07/2018	Science-for-policy reports
271 - EMSI JRC.C.3	3487 - H&C markets Heating and cooling markets	The activities in this WPK will support the development of efficient heating and cooling (H&C) markets and solutions in the EU. The WPK aims at: (i) identifying market mechanisms able to stimulate the development of efficient district H&C markets, (ii) developing knowledge about integrated energy systems, i.e. how H&C systems can efficiently interact with electricity grids, and (iii) support policy design in the heating and cooling domain. The outputs will enhance the understanding of how the functioning of H&C markets and policies in the EU can be improved, and how H&C systems can profit from interacting with the electricity grids and vice versa.	JRC.C.7 Johan CARLSSON	3.2.d	ENER	JRC	Paul Hodson ENER-C3 and Eva Hoos ENER-C3			01/01/2016 31/12/2018	INS-RS	1	Study of interaction of heating & cooling systems with electrical grid	Study of the interactions between heating & cooling systems and the electricity grid and in particular identification of solutions that can provide benefits to both systems (e.g. using surplus electricity to generate heat, stability of electric networks, heat storage when electricity prices are low or negative etc.). This deliverable is part of series, the previous treated the supply side and this one focuses on the demand side, e.g. load profiles, energy efficiency measures, prosumers, demand response, electrification of the heat supply. The aim is to provide policy insights and recommendations to support the implementation of the Heating and Cooling Strategy as well as the Clean Energy Package.	30/11/2018	Science-for-policy reports
241 - KM-EnU JRC.C.7	3549 - E3P - development Development of the European Energy Efficiency Platform	This work package aims at developing, updating and maintaining the European Energy Efficiency Platform (E3P). The E3P serves as the Commission on-line platform foreseen by the Energy Efficiency Directive Article 25, facilitating the practical implementation of the Directive at national, regional and local levels, with data collection and analysis. The E3P also supports the exchange of experiences on practices, benchmarking, networking activities, as well as innovative practices. The E3P addresses as well the need expressed in the Roadmap for the Energy Union strategy for data, analysis and intelligence for the Energy Union, by pooling and making easily accessible all relevant knowledge in the Commission and Member States. The E3P serves as well the JRC needs for the collection of (expert) crowd-sourced data, including from non-conventional data sources. These data and their analysis will complement the information obtained from usual data providers, with more local and more frequent data for an overall improvement of the monitoring of energy efficiency policies and initiatives. The work package will deliver updated releases of the E3P. The first release includes basic functionalities for building and exchanging knowledge through collaborative content writing (wikipedia-like articles) and for group collaboration. The second and third releases focus on the development of the Data Hub tool for the exchange and share of datasets. The fourth release implements a peer-review procedure for the validation of all E3P content. All updates will also take into account users' feedback.	JRC.C.2 ISABELLA MASCHIO	3.2.d	ENER	JRC	Paul HODSON (HoU, ENER C)	CLIMA ENV GROW RTD	SET-Plan Com - SET-Plan Community	01/01/2016 31/12/2019	INS-UR	10	4th release of E3P	The fourth release of the E3P will strengthen and improve the existing features for the exchange and share of data and knowledge among the energy efficiency community (Data Hub, wikEE, Community) and it will deploy a peer-reviewed procedure for the validation of all the E3P content. This feature will ensure that E3P becomes an autonomous community-driven platform.	30/09/2018	Scientific information systems and databases
												11		In its 5th release the E3P website will deploy a new theme in line with the new EC Internet Publisher Guidelines (IPG, expected to be published in 2018). The website interface will also be improved for better navigation, based on users' experience and feedback.	30/09/2019	Scientific information systems and databases
												9	Report on possibility to tap E3P to energy efficiency internet resources	The deliverable will provide an analysis of the relevant data, information and knowledge providers active in the energy efficiency domain and it will investigate the possible options to make websites interoperable in order to allow E3P users to easily access a wider knowledge.	30/06/2018	JRC technical reports
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	4922 - THE IDEA Thermal Envelope for an innovative Dynamic Efficient Approach	The WPK is based on recent and successful exploratory research results (E4Buildings). Moreover, a patent related to an innovative process is a spin off of E4Buildings. The WPK will focus on cladding systems with a high amount of Thermal Energy Storage Aggregates (TESAs). The use of TESAs will increase thermal inertia of the material thanks to the presence of particular Phase Change Materials (PCMs) currently considered as waste product of several industrial processes, like bio-based PCM products that promise to be successful, both for economic and environmental reasons. The WPK will consider the upscaling procedure to produce large amount of TESAs focusing not only on technical and practical aspects but also performing a full LCA. The considered cladding solutions will be suitable for new and existing buildings. Particular attention will be paid on different retrofitting applications that will significantly impact the European building stock. Evaluation techniques of the retrofitting performance will be developed to quantify the improvements obtained with the studied solutions. The analysed cladding systems could be then introduced as "demo application" inside the JRC for a portion of a new building and for retrofitting of an existing one. The use of installation, in combination with an expert JRC shall provide DG ENER with technical assistance, analysis and input to support the implementation of Article 14 of Directive 2012/27/EU on energy efficiency. The JRC should also contribute to the development of related policies for the strengthening of the EU energy efficiency	JRC.E.4 Paolo NEGRO	3.2.d	ENER	JRC	Robertus Wilhelmus NUIJ	ENER ENV REGIO	- Building Research Institute CEMBUREAU - European Cement Association TBE - Tiles and Bricks of Europe (TBE)	01/01/2017 31/12/2019	INS-UR	2	Assessment of innovative solutions for retrofitting of buildings	The developed assessing procedures, methodologies and devices for measuring the energy efficiency of dynamic insulation will be presented and discussed. The technical aspects of construction and monitoring will be presented aiming at to share knowledge on operational procedures to be adopted in order to maximize the benefits of these new solutions.	20/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												3	Guidelines for the use of Thermal Energy Storage Aggregates in retrofitting applications	The guidelines for the design of the studied solutions and technical specifications for the performance evaluation of the retrofitting solutions will be based on the experience collected during the installation of the "demo application" in the JRC/Ispra, and on the analysis of the data recorded through the ad-hoc smart monitoring equipment. Moreover, the technical aspects related to best operational procedures to be adopted in order to maximize the benefits of these new solutions will be detailed in a form of guidance for practical application.	20/12/2019	JRC technical reports
	6342 - EFUCP-ent											2	Update of methodology for Art 14 of EED	Update of the methodology for the Comprehensive assessment of efficient heating and cooling potentials in the context of art 14 of Directive 2012/27/EU on energy efficiency (EED), to take stock of the experience gained through the review of the 28 national comprehensive assessments carried out	30/04/2019	Science-for-policy reports

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7670 - GOV-EU JRC.C.7	Energy efficiency heating and cooling potential - extension	framework on heating, cooling and electricity supply.	JRC.C.7 Johan CARLSSON	3.2.d	ENER	ENER	n/a	REGIO		12/08/2017 05/05/2019	CON-AA	3	Updated synthesis report	An updated synthesis report containing an evaluation of all national notifications received taking into account the resubmissions.	30/10/2018	Science-for-policy reports
												4	Preparation of reporting template	JRC will prepare a reporting template to be used by Member States when sending the notification of the Comprehensive Assessments. This will improve the coherence of the information reported by Member States and enhance the comparability.	30/06/2018	Science-for-policy reports
271 - EMSI JRC.C.3	6313 - S3PE H&C Smart specialisation energy heating and cooling	The objective of this AA is to support the effective uptake of the cohesion funds for those regions with particular interests in the thematic area of sustainable heating and cooling. To do so, knowledge sharing will be promoted and dedicated information will be tailored to facilitate decision-making of regions in the H/C field. The work plan is based on the cooperation with regions that are interested in receiving specific support from the Commission in this topic. The S3 Platform will act as a facilitator for regions and countries in the uptake and incorporation of the smart specialisation concept and methodology in their research and innovation strategies. The WPK will also support to R&I strategies for Smart Specialisation in the heating and cooling sector.	JRC.C.7 Johan CARLSSON	3.2.d	ENER	ENER	n/a	REGIO		01/07/2017 30/06/2018	CON-AA	1	Support development of regional H&C priority plans.	Two workshops will be organised to provide best practices, present technology solutions, and offer practical support. The workshops will facilitate mutual learning, best practice exchange and the creation of the partnership. A report with general recommendations about heating and cooling priorities for each region will be provided.	31/05/2018	Science-for-policy reports
												2	Internal report with policy recommendations	Internal report with policy recommendations to DG ENER how the uptake of regional funds can be improved in the future.	30/06/2018	Science-for-policy reports
337 - CoM JRC.C.2	6362 - CoM EU/Global Covenant of Mayors EU & Global	The main objective of this WPK is to provide technical and scientific support to the Covenant of Mayors Initiative in the EU and in the regions supported by FPI, in the Covenant pillars (mitigation, adaptation to climate change and secure, sustainable and affordable access to energy) keeping in mind the different experiences and conditions encountered by towns and cities in the different regions. The WPK allows assessing the contribution of the local and regional authorities to the achievement of EU Energy Policy's goals and collecting information and data on the type of measures adopted and their geographical distribution. One key task (in collaboration with the technical Global Covenant expert working group on data) will be the setting of the methodologies for emission inventories, data reporting and sustainable energy and climate planning for the Global and Regional initiatives development. The purpose of this task is to ensure the overall methodological consistency and robustness of the Covenant initiative world-wide. Other key tasks include the continuous overall assessment based on submitted SEACAPs; the analysis of policies and measures adopted by the cities; the financial instruments used to allow the transition to low-carbon and resilient cities; and the assessment of the planned/achieved energy savings and adaptation by policy. These tasks will result in the release of a yearly publication summarising the achievement of the Global Covenant. The JRC will also support DG ENER/ CLIMA and FPI in the adaptation of the Covenant to the new global framework by adjusting its tools accordingly, including a new and upgraded data handling architecture allowing the in house web applications (for the SECAPs and monitoring analysis) to share access to the Covenant data in a more optimized way. Moreover, the new system will allow JRC having instant direct access to the whole dataset, needed for the assessment and methodological purposes included in previous Finally, the JRC will continue operating a second-line technical helpdesk replying to cities' questions on SEACAP development and monitoring. The emergence of the Global Covenant requires that the technical helpdesk function co-run by the JRC is extended to support contractors implementing the global initiative. It is expected that the contractors' experts will need specific and regular training from the JRC on the Covenant methodology to allow them to operate the first-line helpdesks.	JRC.C.2 PAOLO BERTOLDI	3.2.d	ENER	ENER	n/a	CLIMA FPI		20/09/2017 19/09/2020	CON-AA	1	Covenant of Mayors methodological adaptation to Regions of the World.	For the new Global Covenant of Mayors (in the 5 regions supported by FPI), there is a need for adapting the CoM methodology to regions specific situations. The GCoM has already been launched in Latin America and the Caribbean, North America, China, Hong Kong, Indonesia, Vietnam, Singapore, Malaysia, South Korea, Japan and India. For these new geographical areas of the Covenant, methodology on mitigation, adaptation and access to energy needs to be developed. As main part of the supporting role to FPI on the global expansion of the Covenant of Mayors, the JRC will play a leading role (in collaboration with the technical Global Covenant expert working group on data) in setting the methodological basis for the Global and Regional initiatives development. The purpose of this deliverable is to ensure the overall methodological consistency and robustness of the Covenant initiative world-wide.	30/11/2018	JRC technical reports
												2	Annual Covenant of Mayors overall assessment	In the frame of the Covenant initiative a significant variety of measures are implemented by participating cities. The main objective of this deliverable is to allow the Commission services and other stakeholder to have the latest overview of the results achieved by cities in terms of CO2 emission reductions, energy savings, local clean energy production, access to energy and adaptation. The report will also offer an insight into the type of measures, frequency and geographical distribution, in order to have a practical and field-tested feedback at local level of policies, by focusing on the analysis of policies and measures of the most important sectors, on the financial instruments to allow the transition to low-carbon and resilient cities and on the planned/achieved energy savings and adaptation by policies. The report is based on the submitted SEAP/SECAPs/adaptation plans and data in the monitoring templates.	31/10/2018	Science-for-policy reports
												3	New architecture of the Covenant of Mayors data system	The objective of this deliverable is to implement a new data architecture allowing the in house web applications (for the SECAP and monitoring analysis) to share access to the Covenant data provided by cities in a more optimized way. The system will also allow archiving regularly (twice/year) frozen database versions of the CoM database(s), in which original figures remain available for comparison with later versions. Moreover, the new system will allow the JRC to have instant direct access to the whole dataset, needed for the assessment and methodological purposes included in previous. This will be achieved with the implementation of a master/slave solution hosted by JRC.	30/09/2018	Scientific information systems and databases
												4	Training of contractors running regional first-line helpdesks	A Covenant helpdesk has always been a central point of the Covenant initiative, as it links the request for assistance coming from signatory cities and other Covenant stakeholders with the provision of technical assistance services. The emergence of the Global Covenant requires that the technical helpdesk function co-run by the JRC is extended to support contractors implementing the global initiative. There will be five (5) contractors responsible for various geographical parts of the Global Covenant of Mayors based in Brazil (for Latin America and the Caribbean), Mexico (for North America including Mexico), China (for China, South Korea and certain South-East Asian partners), Japan (for Japan) and India (for India). The contractors will run first-line helpdesks for signatories of the Covenant. It is expected that the contractors' experts will need specific and regular training from the JRC on the Covenant methodology to allow them to operate the first-line helpdesks.	30/12/2018	Training
												5	Assessment of SECAPs	The JRC will continue to validate the SECAPs submitted by cities in the EU covering both adaptation and mitigation	31/12/2018	JRC technical reports
271 - EMSI JRC.C.3	6386 - H&C in cities Heating and Cooling in Cities	This WPK investigates technology and market options to obtain more efficient and sustainable heating and cooling (h&c) systems in cities. The outputs aim at providing policy-makers with new insights and recommendations on future developments in the heating and cooling sector in cities, in line with existing Directives and strategies, e.g. the Clean Energy Package and Heating and Cooling Strategy (COM(2016)51). The work will also support the Digital Single Market by examining the expected transformation from implementing IT in the heating and cooling sector. More specifically the WPK will evaluate (i) cost-efficient implementation of low-carbon heating and cooling technologies in cities, including insulation, (ii) consequences from digitizing the heating and cooling sector, (iii) local market mechanisms able to support the introduction of sustainable heating and cooling technologies.	JRC.C.7 Johan CARLSSON	3.2.d	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	1	Optimising implementation of efficiency measures in H&C sector of cities	Report on cost-optimal implementation of energy efficiency measures in the heating and cooling sector of cities will be performed. It compares different building typologies in various climates by performing Cost-Benefit Analyses. For example district heating and cooling, efficient individual heating and cooling supply options (e.g. heat pumps), as well as different levels of insulation of buildings will be analysed. The study would allow providing policy guidance on an optimal set of cost-efficient measures to increase the energy efficiency and sustainability in the heating and cooling sector in cities.	30/06/2019	Science-for-policy reports
												2	Digitalisation of the heating and cooling sector	The study investigates how the digitalisation impacts the future heating and cooling sector. It will analyse the benefits, e.g. more optimal operation, momentaneous information about the performance of equipment, and the risks associated. The study will include both centralised, (e.g. district heating and cooling), and individual options, (e.g. heat pumps). Potential energy efficiency and green house gas emission reductions will be identified. The digitalisation will be studied both in the existing as well as in the future energy system. Privacy issues will be discussed too.	30/06/2019	Science-for-policy reports
7670 - GOV-EU JRC.C.7	6406 - TSSEED II Technical Scientific Support Energy Efficiency Directive II	The Energy Efficiency Directive is a key EU policy to reach the 2020 and 2030 energy and climate targets. It requires Member States (MSs) to adopt a number of specific policies, to prepare every 3 years a National Energy Efficiency Action Plan (NEEAP) and to report annually on the energy savings achieved thus allowing a strong monitoring of the progresses by the Commission. In the Winter Package of 2016 the Commission has proposed the extension of the EED to 2030. The Energy Performance in Buildings Directive requires strong implementation of policies in the buildings sector by MSs, for examples having all new buildings to be NZEBs by 2021. The present WPK is a new AA with DG ENER (continuing the work of the TSSEED AA to be concluded in December 2017) and it includes the JRC support to DG ENER for the effective implementation of the EED and EPBD by MSs and the monitoring of the MSs' progresses towards the 2020 and 2030 energy savings (e.g. assessment of MS targets and policies, as described in the NEEAP, the Building Renovation plans, the annual reports, etc.). The WPK includes the support for the future revisions of the EED and EPBD as well as the contribution to the major EU financial initiative for energy efficiency: the Smart Financing for Smart Buildings initiative.	JRC.C.2 PAOLO BERTOLDI	3.2.d	ENER	ENER	n/a	CLIMA		08/12/2017 31/12/2020	CON-AA	5	Application of Building Stock stimulation for some key Member states	By using the data already collected in the EU Building Observatory and other sources, a simulation tool will be developed to calculate the energy consumption of the national building stocks in EU over time including future projections. The methodology, model and results for a selected number of countries will be published as a JRC report.	30/09/2018	Science-for-policy reports
												6	Collection of indicators/data on indoor environmental quality related to buildings	This task will consolidate data on indoor environmental, thermal comfort, ventilation and health in a co-ordinated and systematic way with the aim to centralise large-scale national/regional datasets. The results of the work will be integrated in the EU Building Stock Observatory and used for policy analysis	31/10/2018	Science-for-policy reports
219 - Photovoltaic Energy JRC.C.2	6407 - PV Standard Standardization Activity on testing and/or calculation methods for solar photovoltaic panels	The aim of the work package is to develop and finalise a reference document in agreement with stakeholders detailing requirements of testing and/or calculation methods (either from already published standards, or from standards under developments or proposing transitional methods developed in this study) regarding the energy performance of solar photovoltaic panels and systems in a preparatory study to support the ECODSIGN work programme of DG GROW. Priority is given to the work on Silicon-based panels, with thin film technologies (CIS, CIGS, CdTe, aSi, etc.) in second order (according to the market penetration).	JRC.C.2 Ewan DUNLOP	3.2.d	GROW	GROW	n/a	ENER ENV		01/09/2017 31/01/2019	CON-AA					
		Today, ca. 75% of EU citizens live in urban areas, which globally account for up to 80% of energy consumption and GHG emissions. The WPK investigates the transition toward carbon neutrality at urban level, including the exploitation of carbon neutral energy generation with renewable energy sources (RES) at local level. The "Winter Package" highlights consumers at the heart of the energy transition. Consumers are individual citizens, households, non-commercial organisations, public entities and SMEs that actively participate in the energy market, either individually or through Sustainable Energy Communities (SECs). SECs are legal entities where citizens cooperate in energy efficiency and demand-side management services as well as the generation, distribution and storage of energy from RES. They aim to benefit all stakeholders and enable an open participation and democratic governance of the undertaking. Using RES and their potential as the least cost option for power and heat generation at community level provides the chance to eliminate energy poverty. With 40% of the final energy consumption and 36% of CO2 emissions in Europe, the building sector is the main target of energy efficiency (EE) policies. This WPK will evaluate the energy generation potential of decentralised RES and the management of										Del1	Ispra goes Smart – the energy transition towards a	This deliverable will present the scientific and technical support to the Ispra goes Smart initiative as a use case of the implementation of demand side and generation side measures aiming at reaching a decarbonised Ispra site.	30/06/2018	JRC technical reports
			Del2	The energy pathways towards decarbonised urban areas – part 1 (technical aspects)	The report will address the technical challenges behind the renovation of the European building stock. It will analyse the potential for integration of innovative technologies in the built environment and in particular it will provide the cost-optimal analysis of Nearly Zero Energy Buildings (NZEBS) in European Member States, presenting a novel approach to analyse cost-optimal choices of energy efficient measures and evaluating the feasibility of EU requirements in different European cities, by combining energy simulations and cost optimization.	30/11/2018	Science-for-policy reports									
			Del3	Analysis of the renewable energy generation potential in urban areas (part 1 - electricity).	This deliverable will develop and implement a methodology for the assessment of the potential for photovoltaic electricity generation in urban areas that will be applied to selected European urban areas.	30/11/2018	Science-for-policy reports									

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
326 - EE JRC.C.2	6438 - SelfCities Self-sustaining energy supply for cities	energy use in urban areas in an efficient and CO2 reducing way. The results combined with those from TSSEED will provide much needed evidence for effective EE in buildings policy. The WPK will explore pathways towards the decarbonisation of urban areas, and how to match reduced energy demand with local renewable energy production. The focus will be on technical solutions to reduce the energy consumption of the building stock, the potential of RES using the sun, local waste and green residues for heat and power as well as citizens' engagement in SECs as a mean to trigger more sustainable behaviours. The Ispra goes Smart initiative will be supported by feeding the respective results into the energy analysis of the scenarios to turn the Ispra site into a smart and decarbonised one. Economic, engineering, behavioural and health issues in an urban setting the various linkages with other sectors (mobility, products and appliances), and the social importance of housing and coexistence will be investigated. At a later stage, the synergies with sustainable mobility systems in urban areas, e.g. electric vehicle, electric trams and light rail, should be included.	JRC.C.2 Arnulf JAEGER- WALDAU	3.2.d	ENER	JRC	n/a			01/01/2018 31/12/2020	INS-UR	Del4	Present and future energy needs of the urban building stock and barriers to renovation	This deliverable will analyse the energy needs of the European building stock. Two approaches will be used: 1) a top-down approach downscaling national data to the regional and local level (WPK TSSEED, in collaboration with unit B3), will allow estimating the buildings' related energy needs in cities and 2) a bottom-up approach, based on the use of geolocation data (compliant with the INSPIRE directive, in collaboration with unit B6) associating energy performance levels and energy needs to individual buildings and scaling up the output to map energy needs at urban level.	30/06/2019	Science-for-policy reports
												Del5	Analysis of the renewable energy generation potential in urban areas (part 2 – thermal energy).	This deliverable will develop and implement a methodology for the assessment of the technical potential for waste and green residues for combined heat and power (CHP) generation in urban areas that will be applied to selected European urban areas. Comparing these results with the actual thermal energy need at urban level will allow estimating the possible reduction for heat demand.	31/07/2019	Science-for-policy reports
												Del6	Energy pathways towards decarbonised urban areas – part 2 (social aspects)	The deliverable will analyse citizens' engagement in Sustainable Energy Communities as a pathway toward decarbonised urban areas. The creation of community-based energy initiatives represents a new policy option to face the challenges of energy transition. Policies that can be designed and implemented to stimulate these initiatives will therefore be analysed and critically assessed based on already existing best practice examples and on insights provided by complex system theories. New conservation policies envisage the active involvement of citizens.	31/10/2019	Science-for-policy reports
												Del7	Synthesis report: Energy pathways towards decarbonised urban areas	The report will present a synthesis of the main findings of the whole work package. It will combine the results of the assessment of the renewable energy generation potential (deliverable 2 and 3) with the actual and future electricity consumption needs at urban level (deliverable 4) and compare them with the technical (deliverable 5) and behavioural (deliverable 6) potential for decarbonising urban areas. The analysis will allow extracting insights and recommendation for effective policy making for the transformation of cities into decarbonised urban areas and communities.	31/12/2020	Science-for-policy reports
3.2.e low-carbon energy technologies - analyse deployment trends of renewables and their impact on climate change mitigation and on other policies such as air pollution; carry out techno-economic assessments of renewable energy technologies and their cost-effective deployment, including by using geo-spatial tools and by analysing relevant renewable energy scenarios and supporting the implementation of the revised directive; perform pre-																
569 - BIOECONOMY JRC.D.1	5053 - BioenerAsMod Bioenergy assessment and modelling	This Work Package will contribute to the JRC BIOMASS mandate with the assessment of the bioenergy within the EU bioeconomy, defining trends and perspectives. This assessment, will address different biomass feedstock categories (solid biomass, waste, biogas, liquid biofuels, etc.) in three final energy uses - electricity, heat and transport. An estimation of domestic and imported biomass supplied for electricity, heating/cooling and transport from forestry, agriculture and waste will be provided. The assessment will consider various sources of information available (EU Members States reporting under Renewable Energy Directive, AEBIOM, Biogas Energy Association, EurObservER, Eurostat, etc.). The WPK will target also the analysis of the options to fully couple the forestry and energy models.	JRC.C.2 MANJOLA BANJA	3.2.e	ENER	JRC	Mrs Paula ABREU MARQUES (ENER.C.1), RTD G3			01/01/2017 31/12/2019	INS-RS	2	Assessment of bioenergy within EU Bioeconomy -2018	Assessment of biomass use and bioenergy production in the EU, analysis of progress made, trends and perspectives within a EU bioeconomy (2018 Update).	31/10/2018	Science-for-policy reports
												4	Improve wood representation in the JRC-EU-TIMES model	Enhance the capacity of the JRC-EU-TIMES model to discriminate different types of wood. Implement more detailed modelling of the wood to energy pathways, enabling the JRC-EU-TIMES model to shape more representative distribution of wood commodities across the energy end use sectors.	30/11/2018	Science-for-policy reports
												5	Recent trends and projections of bioenergy within EU Bioeconomy	The deliverable will provide the assessment of biomass use for energy in each EU Member State and EU as a whole relating it with the projections under EU JRC TIMES model.	31/10/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
326 - EE JRC.C.2	6314 - COSPET Complex Systems and Social Practices in the Energy Transition	COSPET aims to be a H2020 project developed in collaboration with partners in the EU and coordinated by a European leading research institute in the field of social sciences applied to energy. The JRC will be a full partner of the project consortium. Funding will be requested under the call H2020-LC-SC3-2018: "Building a low-carbon, climate resilient future: secure, clean and efficient energy", topic: "Social Sciences and Humanities (SSH) aspects of the Clean-Energy". The main objective will be to study social innovation in the energy sector in the light of complex systems and social practice theories. By taking examples of social innovation initiatives implemented in a series of cities and urban areas across the EU as a starting point, the project will show how complex system and social practice theories allow individuating the main factors enabling energy-related social changes and how these factors are correlated to a more energy sustainable transition to renewables. The project will also serve to stimulate new bottom-up energy-related social innovation initiatives such as the creation of energy cooperatives or of new and more energy sustainable social practices related to mobility, food production and consumption, etc. and will show how the active engagement of citizens plays a fundamental role for their development. Project outcomes will include a series of detailed indications for policy makers that will be based on the experience gained during its implementation and will show how complex systems and social practice theories can inform policy making and contribute to facilitate the on-going transition to renewables in important ways.	JRC.C.2 NICOLA LABANCA	3.2.e	ENER	RTD	n/a			01/02/2018 31/12/2020	CON-IA	1	How complex systems and social practice theories allow framing the energy sustainability within the current energy transition	This WP will serve to produce scientific evidence concerning how complex systems and social practice theories can serve to inform policy making in relation to the stimulation of energy-related social innovation initiatives. Moreover, it will serve to produce a categorisation of the main social innovation initiatives that can be implemented in cities and to analyse existing case studies in the countries covered by the project consortium. This will serve, among others, to provide concrete evidence of how the above mentioned theories can provide conceptual tools to understand how social innovation can contribute to making energy more secure, sustainable and affordable and how suitable policies can stimulate it at the city level.	31/12/2018	JRC technical reports
												1b	How complex systems and social practice theories allow framing the energy sustainability within the current energy transition	A peer-reviewed scientific contribution based on the findings of deliverable 1	31/07/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	Implementing energy related social innovation initiatives at the urban level	This deliverable will serve to document how new social innovation initiatives implemented in the countries covered by the project consortium have been identified, implemented and monitored. These initiatives may relate e.g. to the creation of energy co-operatives, to bottom-up initiatives undertaken at the urban level to create new and more energy sustainable social practices related e.g. to mobility, food production, food conservation, shopping, washing, buildings construction, etc. All these initiatives will be carefully monitored with the aim of learning on the field how they develop, how they can be stimulated, which are associated success or failure factors, etc.	01/10/2019	JRC technical reports
												2b	Implementing energy related social innovation initiatives at the urban level	A peer-reviewed scientific contribution based on deliverable 2	30/04/2020	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												3	Indications for policy making	This deliverable will serve to produce indications for policy makers concerning how complex systems and social practice theories should inform policy making in relation to how social innovation initiatives in the energy sector can be stimulated at the urban level. It will be mainly based on a critical analysis of the results achieved during project implementation as documented under deliverables 1 and 2.	03/02/2020	JRC technical reports
241 - KM-EnU JRC.C.7	6439 - RSD Exploiting Clean Energy for Sustainable Development	Clean energy, and in particular renewable energy, is a key to realising Energy Union objectives, but also the EU's commitments to achieving the UN sustainable development goals. This work package targets two main aspects: a) critical analysis of policy drivers and related socio-economic aspects for deployment of renewables, and b) geospatial analysis of pathways to optimise the exploitation of the available resources in Europe and in developing countries. Concerning deployment, the activity makes use of actual renewable energy growth trends, accompanied by analysis of related policy measures in the EU and 3rd countries. This will include options for prosumers and for providing benefits of energy transition to all citizens, including vulnerable customers. The opportunities provided by renewable energies are assessed following an integrated approach of spatial analysis with geographic information systems. These address a number of geographical levels relevant to policy: EU, members states, regions, islands, developing countries/regions (in particular Africa). These data and tools are also made available online, aggregated into a single information platform, providing integrated energy solutions relevant to distinct geographic areas and to individual prosumers. This covers solar energy (both photovoltaics and thermal) via the PV-GIS systems and the tools under development for biomass production, as well as other clean energy sources such as wind, hydropower and geothermal. There will be strong and mutual collaboration with EMPHIRE database system and other tools being developed in support of system modelling activities. The activity also includes contributions to the International Energy Agency's Photovoltaics Power Systems Programme (PVPS), Task 14 (grid integration) and 16 (solar resource). The main policy-relevant deliverables are listed below, and these will be accompanied by scientific publications relating to the methods and data developed.	JRC.C.2 Nigel TAYLOR	3.2.e	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	2	Pathways to tackle energy challenges for EU islands	Triggered by the current non-sustainable energy systems of EU islands, we explore integrated renewable energy solutions as important drivers for sustainable and resilient economic growth that relies on indigenous resources. The special focus of the deliverable is the non-interconnected islands. Future projections of energy needs will include the full range of sustainable energy portfolios, covering in an integrated approach mobility and water infrastructure as well. This deliverable will support EC's commitment to promote tailor-made clean energy transitions for islands. The policy context is the European Parliament resolution of 4/2/2016 on the special situation of islands (2015/3014(RSP)), followed by the joint European Commission and 14 EU MS political declaration to launch the new 'Clean Energy for EU Islands' initiative.	31/12/2018	Science-for-policy reports
												3	Socio economic Analysis of Obstacles and Enablers for Investments in Clean Energies in Sub-Saharan Africa	In order meet the demands from various stakeholders in the Africa-EU Partnership the JRC updates datasets and geographical information systems compiled during previous and ongoing African activities. The deliverable will be complemented by the collection and analysis of new socio-economic data layers to match existing datasets and geographic information. This will enable the beneficiaries to better understand opportunities, gaps and barriers for renewable energy investment, their drivers in developing countries. Due considerations will be given to interaction with the ongoing Water, Energy and Food Nexus works. The data layers will include household, populated areas, electricity network data, brownfield data. This is consistent with the Joint Communication to the European Parliament and the Council for a renewed impetus of the Africa-EU Partnership, JOIN(2017)17.	31/07/2018	Science-for-policy reports
												4	Decision support tools for prosumers	Renewable solar, mini-wind, mini-hydro prosumers solutions, as essential feature in meeting the growing need for electricity, will be investigated using spatial data on population, resources and infrastructure data with due consideration of economics and social fairness. This deliverable will describe the decision support tools developed and contribute to better understanding of the performance, cost and payback for overcoming barriers to large scale renewables energy solutions for prosumers and stand-alone systems.	31/12/2019	Science-for-policy reports
												5	Integrated multi-sector renewables solutions for clean energy supply	The opportunities provided by renewable energies for a low carbon energy system in Europe are assessed following an integrated approach of spatial analysis with Geographic Information Systems. Complementarities are investigated with the aim of enabling higher integration of renewables (solar, wind, biomass and/or hydro) into the European energy system. This will also consider large-scale electrification of heating and cooling and transport sectors. Spatial data on resources, infrastructure, economic and environmental constraints are used for a spatial analysis, employing a mix of statistical and geographical methodologies, tools and models.	31/12/2019	Science-for-policy reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
												7	Effectiveness of Policy Tools for Promoting Investment in Renewables	A robust Energy Union Governance must ensure that policies and measures at each level are efficient, coherent, complementary and sufficiently ambitious. This deliverable makes an overview on renewable energy policy developments in the EU bringing together the efforts of Member States on (i) support schemes (investment aid, tax exemptions or reductions, renewable energy obligation support schemes including those using green certificates, tax refunds and direct price support schemes including feed-in tariffs and premium payments) and other measures applied for the promotion and integration of renewables into existing power system including energy storage; (ii) administrative procedures improvement to remove regulatory and non-regulatory barriers for renewable energy deployment; (iii) measures in transition, distribution and grid connection bearing and sharing costs; (iv) allocation of final electricity to the customers. It also looks at developments outside of Europe for comparison.	31/10/2019	Science-for-policy reports	
												8	Study of PV-wind mini-grids	Building on the expertise on PV and off-grid applications of Unit C.2 and the knowledge of wind power of Unit C.7, a study will be performed of the advantages of combining wind and PV to power mini-grids for rural electrification in developing countries. This work will also have contributions from a visiting scientist from ISAC-CNR (Lecce, Italy).	31/01/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
7670 - GOV-EU JRC.C.7	6542 - RE-PORT-EnU Monitoring Actual and Foreseeable Renewable Energy Deployment	<p>The WPK contributes to the fourth dimension of Energy Union towards the transition to a low-carbon economy. An integrated assessment in line with the long-term energy and climate policy at the EU, regional and national level will be performed on (i) renewable energy deployment; (ii) impact of this deployment to the greenhouse gas (GHG) emissions (including impact on ETS and ESD sectors), (iii) renewable energy regulatory and financial measures in place or planned, and (iv) renewable energy policy developments within the Europe energy market.</p> <p>The focus of the assessment is the achievement of the EU's and Member States 2020 binding targets and the contributions of Member States to the agreed 2030 EU-level binding target. The WPK makes use of the up-to-date renewable energy database transformed in an interactive tool and accessible for the public through the renewable energy Data Portal and Data Viewer. The database is sourced from EU Member States reporting under RED complemented with data from Eurostat. To capture the most recent trends, the analysis is complemented by information from industry sectors, market analysts etc.</p> <p>To provide a medium-to-long term assessment of the renewable energy deployment in the EU and in each Member State the database is enriched with data coming from different European Commission scenarios in place combined those results with existing JRC models.</p> <p>The WPK will contribute to Energy Union Governance through (i) the assessment of the proposed Member States overall renewable energy trajectories, for the sectorial share and by renewable technology, and (ii) the assessment of the impact of renewable energy deployment on GHG emissions.</p>	JRC.C.2 Nigel TAYLOR	3.2.e	ENER	JRC	n/a	CLIMA ESTAT		01/01/2018 31/12/2019	INS-RS	01	Trends and projections of renewable energy portfolio in the EU	Within the existing renewable energy legislation the EU and Member States methodologies for assessing the trajectories towards the fulfilments of the 2020 targets and the projections for the achievement of 2030 EU-level will be developed and agreed with ENER/CLIMA/EEA. Key trends and projections from the overall, sectorial and renewable energy technologies/sources perspective will be in the focus of this deliverable. This work addresses the proposed EnU decarbonisation dimension, in particular 1.2 renewables and for the analytical basis 6.1 (evidence basis for the current situation). The report is intended to capture what's actually happening in deployment, while model-based scenarios which are dealt with elsewhere. It combines "hard" MS and Eurostat data with a 2-year lag and "soft" data about what's happening on the ground to get a fix on short-to-medium term trends. These can also then help to benchmark modelled scenarios	31/10/2018	Science-for-policy reports	
												02	Renewable energy in the EU for climate change mitigation – Trends in greenhouse gas emission savings through the use of renewable energy	Through an integrated analysis this deliverable provides a synthetic overview on GHG emissions (both ETS and ESD sectors) recent trends in the EU as well as the role that the deployment of renewable energy plays in the reduction of these emissions. The impact analysis will cover three sectors: electricity, heating/cooling and transport and the role of renewable energy technologies/sources (wind, solar, biomass and other renewable energy technologies) will be analysed in details. This work addresses the proposed EnU decarbonisation dimension, in particular 1.2 renewables and for the analytical basis 6.1 (evidence basis for the current situation)	31/12/2018	Science-for-policy reports	
												04	Renewable energy database update	Since 2011 the JRC has established a database on current and planned deployment of renewable energy in electricity, heating/cooling and transport sectors sourced by EU MS reporting under RED and extended to Energy Community Contract Parties. The database is updated following the submission timeframe of biennial MS progress reports and complemented yearly from MS reporting to Eurostat SHARES Tool. To provide a long term assessment within the 2030 EU energy and climate policy the database is enriched with data coming from different EC scenarios in place. The database is easily accessible and available for download by means of an interactive tool through the Data Portal and Data Viewer. The tool provides dashboards on (i) key trends and projections from the overall, sectorial and renewable energy technologies/sources perspective; (ii) country profiles; (iii) support policies development; (iv) GHG savings through renewable energy.	31/12/2018	Scientific information systems and databases	
3.2.f energy research, innovation & competitiveness - help to implement the research and innovation and competitiveness (RIC) dimension of the Energy Union by managing relevant knowledge and available scientific data; support the integrated strategic energy technology SET plan through a strengthened information system and the accelerating clean energy innovation strategy. Develop indicators that monitor the progress of energy technology innovation																	
167 - EST JRC.C.1	518 - ESS1 Energy storage System Integration	<p>Based on the first-ever EU-level definition for energy storage included in COM(2016)864 and as described in SWD(2017)61, energy storage will play a major role in the integration of increasing shares of renewable energy in the overall energy system, covering electricity, transport, heating and cooling sectors.</p> <p>There are mature and emerging energy storage technologies and applications which can provide flexibility, increased efficiency and enable decarbonisation. Energy storage also plays a major role for securing the supply of energy in case of disruptions or high demand.</p> <p>A comprehensive technology monitoring and assessment of energy storage technology options and potentials (location, capacity) will provide policy makers, regulators and energy system operators with the relevant information for decision making. The Wpk will deliver a report summarizing the state of the art of technology performance and deployment, on-going projects, promising innovative technologies, safety and reliability of storage technologies, resource efficiency (LCA and recycling) and barriers to deployment. Upon request support will be provided towards the review of the Battery Directive 2006/66/EC. To utilise the full potential of renewables for decarbonisation, converting renewable electricity into heat and/or gas is a key enabler. The coupling of the electricity sector with other sectors through storage enables the integration of a substantially higher share of renewable energies, thereby further decarbonising the residential, industry and transport sectors. Sector coupling also increases efficiency in the overall energy sector and provides flexibility and resilience. Specific scenarios and case studies on the potential role of storage technologies, including battery storage, thermal storage and hydrogen in the future energy system will be defined in close collaboration with WPK 3288/PMSM, where the economics of various energy storage and conversion technologies will be analysed with modelling tools. The Wpk will analyse the pre-normative research needs and the standardisation and regulatory barriers for sector coupling, focusing on power-to-hydrogen and hydrogen-to-X.</p>	JRC.C.1 Eveline WEIDNER RONNEFELD	3.2.f	ENER	JRC	T. Constantinescu (DG ENER), P. Vannson (DG RTD G2)	GROW			01/01/2018 31/12/2019	INS-RS	D2	Guidelines on design of hydrogen safety systems	Report to support FCH community on guidance on design of hydrogen safety systems. The public acceptance of hydrogen and fuel cell systems and infrastructure depends on their safety engineering design. Guidance will be provided to end-users on the choice of sensor type suitable to the application and the placement of hydrogen safety sensors. Whenever possible, results of the underpinning scientific work will be published in peer-reviewed scientific journals.	31/12/2018	JRC technical reports
												ESS1	Overview of state-of-the-art of energy storage technologies	The deliverable will contain an inventory of projects on energy storage and provide an overview of the state of the art of EST, focusing on technologies with a TRL 3 – 7. Promising innovative technologies (TRL <3) are identified. Potential for deployment of the various technologies in terms of capacity and of location in the energy system is an important factor. In particular, the potential storage capacity in the EU member states should be assessed. For underground gas storage (NG,H2,CAES), suitable geological formations are not evenly distributed and may compete with underground CO2 storage. Guidance will be needed on safety of energy storage technologies and operations due to the rapid advances in this field. The reliability of EST is another important aspect, with implications on the security of energy supply. The environmental impact of the technologies will be evaluated through LCA (2018 focus on FCH for LCA and on batteries for recycling).	31/07/2019	JRC technical reports	
												ESS2	Identification of barriers to (electricity, transport, heating and cooling) sector coupling	Identification of pre-normative research, regulatory and standardisation gaps to enable sector coupling. The conversion of (renewable) electricity to hydrogen, also referred to as power-to-hydrogen can facilitate sector coupling. The JRC will continue to be a link between standardisation and research for this technology and investigate other suitable technologies for sector coupling. Whenever possible, results of the underpinning scientific work will be published in peer-reviewed scientific journals.	31/12/2018	Science-for-policy reports	
												ESS3	Contribution to the Batteries Directive Review	This deliverable includes support to the review of the Batteries Directive 2006/66/EC (pending formal request for support from DG ENV) and entails support to the establishment of second use and recycling practices including regulatory framework for batteries at the end of (first) use. Whenever possible, results of the underpinning scientific work will be published in peer-reviewed scientific journals	21/12/2018	JRC contributions to policy documents	
		<p>The "Energy RIC" WPK, will contribute to the assessment of the national integrated energy and climate plans for meeting the Energy Union objectives by quantifying research and innovation indicators. It will assess progress in the implementation of the Research, Innovation and Competitiveness (5th) dimension of the Energy Union through relevant indicators such as investments and patents. The support to the 5th dimension of the governance of the Energy Union could extend to – among others – assessments on global competitiveness, jobs and skills and analysis of relevant import – export trade data balances.</p> <p>"Energy RIC" contributes to the annual state of the Energy Union reporting (SOEUR), providing the indicators that monitor EU energy R&I, such as the level of investment in R&I, trends in patents, and the number of researchers active in the energy sector. In collaboration with the IEA and EPO, methodologies are developed to collect, harmonise and process statistics and provide robust results at the desired level of granularity.</p> <p>The WPK encompasses the Strategic Energy Technologies Information System (SETIS) which underpins the SET Plan, one of the main instruments of implementation of the 5th dimension of the Energy Union framework strategy, by operating the monitoring and reporting mechanism which manages the knowledge necessary for its implementation and further development. SETIS follows the progress of the SET Plan implementation, ensuring transparency and facilitating decision-making by providing supporting knowledge, independent of national and industrial interests.</p> <p>The main deliverables of the "Energy RIC" are the annual input to the state of the Energy Union report (SOEUR) and the annual SET Plan implementation reports. It also coordinates a WPK of the Low Carbon Energy Observatory. It is also the point of reference for Research Innovation and Competitiveness indicators at a level of geographical and technological disaggregation beyond that of publicly available statistics. The work is both unique and necessary, as there is no other comprehensive source available to provide this knowledge to stakeholders.</p> <p>Energy RIC involves the collection of sensitive information, thus the need for trust, confidentiality, impartiality and effective governance necessitate that this activity is carried out by the Commission. The JRC is best suited to this task due to the requirement for a high level of scientific competence on energy issues.</p>										2018CEIF	Support to the Clean Energy Innovation and Industrial Forum	The European Commission, in its 'Clean Energy for All Europeans' proposal and the 2nd State of the Energy Union, has announced the organisation of a Clean Energy Industrial Forum to further support the EU industry to take advantage of the growth opportunities arising as part of the energy transition. One of the expected tasks of the Forum is to work on indicators regarding the competitiveness of European industry and the global position of Europe in the sector. The JRC will assist in this exercise, as it has experience on indicators regarding competitiveness and its support is needed both to conceptualise competitiveness through relevant indicators, and to measure and monitor the indicators. DG ENER, who is leading the file, has requested to strengthen cooperation, as they rely on the JRC for scientific analysis, to underpin the Forum discussions on how to enhance the competitiveness of the EU energy technology industry. Initial work will focus on R&I investments, patents and trade.	28/12/2018	JRC contributions to policy documents	
												2018IND10	Indicator on patents for the Circular Economy Monitoring Framework	In the 2015 EU action plan for the circular economy the European Commission announced the development of a monitoring framework on the circular economy, which aims to measure progress and to assess the effectiveness of action towards the circular economy in the EU and Member States. The JRC contributes the indicator on "Number of patents related to waste management and recycling". Innovation plays a key role in the transition towards a circular economy, creating new technologies, processes, services and business models. The development of innovative technologies for waste management and recycling will support the competitiveness of the EU industry. Patent statistics are a proxy to assess technological progress and innovation.	28/12/2018	JRC contributions to policy documents	
												2018KM1	Mapping of social science interest groups for the Energy Union - Energy Poverty	Mapping of behavioural and social science groups, programs and projects working on areas relevant to the Energy Union, focusing on energy poverty. Building upon the recently published compendium on storytelling for Energy. This is part of a review of existing behavioural, decision and organisational science and the development of new advocacy and communication techniques, to understand how to use framing, mental models, storytelling etc. to achieve policy input. Contribution to Directorate H WP 2018 - WPK 6881 - Skills and training (SkTrain) Deliverable: Policy Advice.	28/12/2018	JRC technical reports	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7670 - GOV-EU JRC.C.7	765 - Energy RIC Energy Research Innovation and Competitiveness		JRC.C.7 Ailiki GEORGAKAKI	3.2.f	ENER	JRC	Ms. Magdalena Andreea STRACHINESCU OLTEANU (ENER.C.2); Ms. Gwennael JOLIFF-BOTREL (RTD.G.1); Mr. Piotr Jaroslaw TULEJ (RTD.G.3); Ms ABREU MARQUES Paula (ENER C.1);VELKOVA Maria (CLIMA C.4);Ruud KEMPENER (ENER C.1); Bogdan ATANASIU (ENER A.4)	CLIMA RTD	CSLF - Carbon Sequestration Leadership Forum IEA - International Energy Agency IRENA - International Renewable energy Agency SET-Plan Com - SET-Plan Community	01/01/2015 31/12/2019	INS-RS	2018KM2	European Semester Country Reports - Energy	Contribution to the Energy Sector Section of the European Semester Country Reports, leading reviews and coordinating inputs as necessary.	30/03/2018	JRC contributions to policy documents
												2018KM3	Socio-economic mapping of Europe (ATLAS) - Energy RIC	Implementation of both the country-knowledge and European Semester Connected pilots and progressive extension to all Member States. Publication presenting new perspectives in the analysis of socio-economic indicators at national and regional levels. The 2018 release will present updates in the data and new indicators on topics related to the Energy Union in General and Research Innovation and Competitiveness in particular as well as potentially explore new topics such as energy poverty. Contribution to Directorate H WP 2018 WPK 6514 - Country and regional knowledge management methods and practice (CoRe-KM) Deliverable: 'Connected European Semester' project on collaborative working.	28/12/2018	Science-for-policy reports
												2018SET	Support to the SET Plan Implementation 2018	The deliverable comprises all actions by the WPK in the context of the Strategic Energy Technologies Information System in support of the implementation of the Integrated SET Plan, one of the main instruments of implementation of the 5th dimension of the Energy Union framework strategy. These are summarised in an annual report which will present: the actions carried out by the SET Plan in the course of 2018, addressing in particular the execution of implementation plans of the 10 SET Plan Actions as agreed with the Member States and the industrial and academic stakeholders; a review of progress of joint actions that support the implementation of SET Plan; an overview of the priorities of major national R&I programmes on energy; and a presentation of relevant 'flagship' projects.	31/12/2018	Science-for-policy reports
												2018SOEUR	Input to the State of the Energy Union Report - 2018	Input to the State of the Energy Union Report in support of the implementation of the 5th (RIC) dimension of the Energy Union. It contains the assessments of the public and corporate R&I investments in energy technologies, an analysis of patent trends and an assessment of the number of researchers and employment in the energy sector, based on the latest available statistics. The input will be organised in country factsheets, but could also provide insights by technology, SET Plan action and Energy Union R&I priority. The outputs under this deliverable will also provide a comparative assessment against main international competitors; analysis of patent trends in the various energy technologies; and, an initial assessment of researchers working on energy R&I and other employment issues. It will also address, as and when required, trade balances, jobs and skills and global competitiveness aspects. The format of the outputs under this deliverable is co-designed with the partner DGs.	31/12/2018	JRC contributions to policy documents
												2019SET	Support to the SET Plan Implementation - 2019	The deliverable comprises all actions by the WPK in the context of the Strategic Energy Technologies Information System in support of the implementation of the Integrated SET Plan, one of the main instruments of implementation of the 5th dimension of the Energy Union framework strategy. These are summarised in an annual report which will present: the actions carried out by the SET Plan in the course of 2018, addressing in particular the execution of implementation plans of the 10 SET Plan Actions as agreed with the Member States and the industrial and academic stakeholders; a review of progress of joint actions that support the implementation of SET Plan; an overview of the priorities of major national R&I programmes on energy; and a presentation of relevant 'flagship' projects.	31/12/2019	Science-for-policy reports
												2019SOEUR	Input to the State of the Energy Union Report - 2019	Input to the State of the Energy Union Report in support of the implementation of the 5th (RIC) dimension of the Energy Union. It contains the assessments of the public and corporate R&I investments in energy technologies, an analysis of patent trends and an assessment of the number of researchers and employment in the energy sector, based on the latest available statistics. The input will be organised in country factsheets, but could also provide insights by technology, SET Plan action and Energy Union R&I priority. The outputs under this deliverable will also provide a comparative assessment against main international competitors; analysis of patent trends in the various energy technologies; and, an initial assessment of researchers working on energy R&I and other employment issues. It will also address, as and when required, trade balances, jobs and skills and global competitiveness aspects. The format of the outputs under this deliverable is co-designed with the partner DGs.	31/12/2019	JRC contributions to policy documents
												5	Scientific articles on energy technology R&I	Peer-reviewed papers in the areas of research, innovation and competitiveness in energy. These could explore, among others: relevant drivers and barriers; methodological considerations for the monitoring of corporate R&I expenditure; statistical analysis of patent to track early invention trajectories; jobs and skills; and the indicator based assessment of specific technologies.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
241 - KM-EnU JRC.C.7	5380 - SKETCH Systematic assessment of and Knowledge synthesis on Technologies for the Energy Union	In line with JRC strategy, the purpose of this WPK is to: - access and capitalise on readily available knowledge of technologies that enable the Energy Union to deliver; - critically analyse and synthesise this knowledge; - make it timely available and tailored for policy considerations to the relevant organisations/services. The WPK will implement the knowledge synthesis function in the field of energy, transport and climate. It will condense a profusion of information to succinct yet relevant notes supporting the policy process from the short term (SET-Plan monitoring) to the long run (Horizon Scanning-HS). The purpose of HS is to identify, discuss and communicate to relevant policy makers, emerging issues that might have policy and societal implications for Europe. Building on the pilot-phase - running through 2017 and touching on Energy and Climate - HS will be expanded and integrated into the JRC work programme. Through identification and communication of energy and climate emerging issues to policy makers, the WPK will indirectly support the definition of the upcoming calls under the EU's R&I Framework Programme in the relevant fields. HS will be supported by grouping competences on research synthesis (e.g. systematic reviews), bibliometrics and other JRC tools (such as TIM) and competences: Selected items, stemming from the HS exercise, will be further analysed to identify past trends and state of the art, therefore refining the likelihood of their occurrence in the future and their potential impact. With respect to the SET-Plan, the WPK provides ad-hoc technical expertise necessary for its implementation and further development. This includes feeding the SET-Plan temporary working groups - dealing with SET-Plan actions - with knowledge and expertise, a SETIS mandate. The WPK also includes further technology and market assessments of SET-Plan relevance. This WPK will rely on the established links with numerous communities: - The JRC and the European Commission at large building on the ties initiated through HS, the use of JRC-developed tools from Dir.1 and the JRC skills-base for evidence-based policy making (with Unit H1) and the need by other services for technology expertise; - MSs organisations through the SET-Plan community and the participation in international agreements such as IEA implementing agreements and IRENA; Research institutes and the private sector thanks to technology and market watches as well as systematic review	JRC.C.7 Alain MARMIER	3.2.f	ENER	JRC	n/a	CLIMA ENER ENV EPSC GROW MOVE RTD	EEA - European Environment Agency IEA - International Energy Agency IRENA - International Renewable energy Agency SET-Plan Com - SET-Plan Community	01/01/2017 31/12/2019	INS-RS	3	Reports on horizon scanning	These reports will summarise the outcomes of the horizon scanning function. They will identify, discuss and communicate to relevant policy makers, emerging issues (risks and opportunities) that might have policy and societal implications for Europe with a focus on the context of the Energy Union. As a contribution to JRC.H work programme, a review of leading HS exercises, in view of identifying concurring energy related findings, will be performed and translated in a science for policy brief.	31/10/2018	Science-for-policy reports
												4	Secondary research reports for synthesising knowledge appraising evidence and gaps thereof	Building on an ongoing systematic mapping of European power models, a systematic review could be envisaged to further improve JRC model and policy questions it can tackle. A quick scoping review is planned for the subjects of energy scenarios such as IEA world Energy Outlook and IRENA Renewable Energy Outlook. Additional reports (design and take of a second research synthesis) could also further elaborate on selected items, stemming from the Horizon Scanning exercise, by means of TIM and bibliometrics, to identify past trends and state of the art. This will refine the likelihood of their occurrence and their potential impact. As a contribution to JRC.H work programme, a science for policy brief will also be issued.	31/10/2018	Science-for-policy reports
												5	Scientific articles on energy technologies	Peer-reviewed papers assessing specific aspects of energy technologies.	31/10/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												6	Scientific and technical expertise in support to the SET-Plan	This activity includes ad-hoc policy support to the SET-Plan and to the S&T communities it covers: With respect to the SET-Plan implementation and monitoring processes, JRC experts will participate in the SET-Plan Temporary Working Groups and support, wherever suitable, the monitoring of their relevant Implementation Plans. Contributions will also take the form of fiches displaying R&I indicators across SET Plan Countries. Further, JRC will issue technical reports on selected SET-Plan technologies, such as the repowering of wind farms.	31/10/2018	JRC technical reports
219 - Photovoltaic Energy JRC.C.2	6221 - PV-Enerate Advanced PV Energy Rating	Objective. The aim of the project is to provide the metrological infrastructure, techniques and guidance to accelerate time-to-market for emerging photovoltaic (PV) technologies, which have the potential to significantly reduce the cost of photovoltaic energy. The project has two main objectives: Firstly, to improve the PV energy rating standards and secondly, to improve the measurement equipment and methodologies to enable precise measurements of the parameters required for the energy rating.	JRC.C.2 Robert KENNY	3.2.f	RTD	n/a	n/a	GROW	CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EURAMET - European Organisation of Metrology (EURAMET) IEC - International Electrotechnical Commission	01/07/2017 30/06/2020	CON-IA					

3.3.Safe and secure use of nuclear energy

3.3.a enhancement of safety of nuclear reactors and nuclear fuels:- collect, analyse and assess the operational experience of nuclear power plants worldwide, and disseminate information to the Member States' regulatory authorities;- perform research on structural materials for analysis and modelling of ageing of components and structures to improve residual lifetime assessment techniques;- improve the safety assessments of innovative reactor designs in

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7465 - SAETEC JRC.G.I.3	24 - INET Fuel contract PIE on INET Pebble fuel elements	The resistance of HTR pebble bed fuel against a severe accident (loss of cooling accident scenario) is to be tested. For this purpose, five INET (Tsinghua University, China) pebbles irradiated in HFR will be transported to ITU (early 2016) for investigation. The outcome of this work will be used to qualify and license the fuel for the new built HTR-PM reactors. The post-irradiation examination (PIE) should include: burnup determination, simulated accident testing (KuFA), ceramography on coated particles, deconsolidation and analysis of the broken particles. A set of two INET pebbles irradiated during the HFR-EU1 test will be also PIE tested. The outcome of these simulated accident tests will be used to apply for the operation license of a new high temperature reactor under construction in China.	JRC.G.III.8 Joseph SOMERS	3.3.a	JRC	n/a	Contract 31339		- INSTITUTE OF NUCLEAR AND NEW ENERGY	31/03/2016 31/12/2018	CON-TW					
63 - SEAT GEN-IV JRC.G.I.3	128 - META TPW Irradiation Effects on Properties and Structure Evolution in Advanced fuels TPW	JRC will perform Post Irradiation Examination (PIE) of metal alloy fuel containing Np, Am, Cm (METAPHIX 1, 2 and 3); safety and effectiveness demonstration of closed nuclear fuel cycle concept to reduce long term radiotoxic inventory of high level waste. Competitive contracts 30583, 31122 and 32050.	JRC.G.I.3 PHILIPP POEML	3.3.a	JRC	n/a	Rudy KONINGS		CRIEPI - Central Research Institute of Electric Power Industry Reg Aut. JP - Regulatory Authorities from Japan	01/04/2011 31/03/2019	CON-TW					
179 - LTO JRC.G.I.4	448 - IntAg-LWR Integrity and Ageing of present Light Water Reactors and future Water cooled Reactors	IntAg-LWR aims at consolidating safety relevant knowledge, collecting and exchanging relevant data and performing research into open issues concerning the integrity assessment and ageing of present and advanced LWRs with a view to the environmental degradation of nuclear materials and structural components during long-term operation (LTO). The WP is supporting the NUGENIA association at the organizational and operational level, to coordinate and integrate European research on the safety of nuclear installations. In addition the WPK contributes to IAEA plant life management activities (via consolidating relevant knowledge, data exchange and organisation of joint workshops/conferences), to round-robin exercises on degradation of nuclear materials and integrity assessment of reactor components (e.g. organized within OECD-NEA and ECG-Comon) and to activities promoting harmonisation & standardisation of SSC of NPP, like contribution to nuclear design codes and guidance and best practice documents on materials performance, integrity assessment and in-service inspection of components and structures. Also IntAg-LWR contributes to direct joint research activities with nuclear organisations of EU member states and the US NRC and US DoE under the I-NERI Program. IntAg-LWR will maintain strong links with competitive WPK of the LTO project, i.e. SOTERIA, INCEFA+ and MEACTOS.	JRC.G.I.4 Oliver MARTIN	3.3.a	ENER	JRC	Ivan POULEUR, Jean Claude VENCHIARUTTI	RTD	- Nuclear Research Institute Rez - VATTENFALL AB CEN - European Committee for Standardization CIEMAT - Centro de Investigaciones Energeticas Medioambientales y Tecnologicas ECG-COMON - European Cooperative Group on Corrosion Monitoring of Nuclear Materials EDF - Electricite de France GIF - Generation-IV International Forum IAEA - International Atomic Energy Agency (IAEA) IRSN - Institut de Radioprotection et Sûreté Nucléaire NEA-OECD - Nuclear Energy Agency (OECD) NRG - Nuclear Research and consultancy Group, NRG	01/01/2014 31/12/2018	INS-RS	20181	NUGENIA Global Vision - 2018 Update	This document is the NUGENIA roadmap and summarises the R&D challenges for present and future LWRs. It is revised every 3 years to include the new R&D challenges and remove old ones, if they have been covered and solved by recent R&D projects running within NUGENIA or other networks or nuclear organisations. The next update of the NUGENIA Global Vision is foreseen for 2018.	30/04/2018	Science-for-policy reports
												20182	Revision of ENIQ Recommended Practices	ENIQ Recommended Practices (RPs) provide guidance on in-service inspection (ISI) of NPPs and qualification of ISI methods and procedures. ENIQ RPs are documents used by NPP operators as guidance documents for ISI and are acknowledged by nuclear regulators. All ENIQ RPs are currently under revision.	30/09/2018	JRC technical reports
												20184	Results of EAC tests and studies on RPV embrittlement	Conference papers & articles in peer reviewed journals summarizing results from EAC tests (round-robin exercises) performed in JRC lab AMALIA within various frameworks (ECG-Comon, ICG-EAC, GIF SCWR, UJV/CVR-JRC collaboration, ...) and from joint studies with NRG on RPV embrittlement.	15/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												20185	EMAR Production Version	Transfer of the content of four synthesis reports on the topic of materials ageing to a ScienceHub subsite; validation of content by a subject matter, and eventual publication in the public domain.	30/09/2018	Scientific information systems and databases
63 - SEAT GEN-IV JRC.G.I.3	449 - PreMaCoR Pre-normative Materials & Components Research for Codes & Standards	The objective is to support the development and qualification of materials, components, structures and associated assessment methods for next generation nuclear reactors through pre-normative research. This is crucial to ensure that nuclear reactors are designed in accordance with the highest safety standards and best engineering practices to allow competitive costs. The Work Package integrates modelling and experimental work related to high temperatures, irradiation, liquid metal embrittlement and weld integrity. The work is based on JRC expertise in modelling of structural integrity ranging from multi-scale physics based models to engineering models and experimental expertise with dedicated and unique laboratories such as material testing in heavy liquid metal, neutron diffraction and testing of miniature specimens. Special emphasis is given to i) the development of Design Rules and Assessment Procedures incorporated into European Codes such as RCC-MRx and R6; and ii) to the development of non-standard test procedures and harmonized European and international standards for material characterization for example small punch testing and nano-indentation. Another important contribution is the continuous development and implementation of material databases applications in support of Design Rules and Test Standards. The WP is strongly linked to JRC's contribution to the EERA Joint Programme on Nuclear Materials and support to the design and construction of prototypes and demonstrators proposed by SNETP. In the MoU between EERA JPNM and ESNII methodologies for 60-years design life and HLM	JRC.G.I.4 Karl-Fredrik NILSSON	3.3.a	RTD	JRC	Mykola DZUBINSKY, Scientific / Technical Project Officer in RTD.DG3.K.4 (Fission) Unit, mykola.dzubinsky@ec.europa.eu	ENER GROW	- Nuclear Research Institute Rez - University of Manchester AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CEN - European Committee for Standardization CIEMAT - Centro de Investigaciones Energeticas Medioambientales y Tecnologicas EDF Energy - EDF Energy EERA - European Energy Research Alliance ENEA - Agenzia Nazionale per le Nuove Tecnologie, L'energia e lo Sviluppo Economico Sostenibile	01/01/2014 31/12/2018	INS-RS	2018CandS	Outreach activities Codes & Standards	This deliverable includes contributions to Codes & Standards, and in particular contributions to international standardization organizations such as CEN/CENELEC and ISO. This includes: 1) Final Report CWA: CEN/WS 64 phase 2; 2) ISO Standard Neutron Diffraction Stress Measurements; 3) European Standardized material data in support of reactor design and safety assessment; 4) Best practice for nano-indentation and micro-pillar testing.	17/12/2018	JRC contributions to standards
												2018MSup p	Outreach Support to Member States	This includes an executive summary of support to Member States and integration of EU nuclear materials research, in particular with respect to EERA JPNM and ESNII. Expected documents: 1) Executive summary R&D activities; 2) Description of Work and Deployment plan EERA JPNM; 3) Cross-cutting Activities EERA JPNM and ESNII.	17/12/2018	JRC technical reports
												2018Scienc e	Outreach Activities Supporting Research	This includes an executive summary of scientific achievements and various peer reviewed papers and public technical reports and publications related to nuclear safety and underpinning Codes & Standards. Expected papers/reports: 1) Executive summary R&D activities; 2) Multi-scale model for single crystal to polycrystals; 3) Assessment procedures for 60-years design life of non-replaceable components; 4) Assessment of small punch test for material characterization; 5) Measurement of residual stresses in welded components; 6) Assessment of nano-indentation and small pillar tests for material characterization; 7) The effects of embrittlement of steels in heavy liquid metal.	17/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
268 - K-NUSP JRC.G.10	493 - NUSP Support to Nuclear Reactor Safety Policy	The objective of the work-package is to provide the required technical and scientific support to DG ENER for the Energy Union actions related to nuclear energy and for the development and implementation of EU nuclear reactor safety policy and legislation (EURATOM Treaty, amended nuclear safety directive and related secondary legislation). The activities of the project comprise the required technical support for: •The implementation and follow-up of the EU Directive on the nuclear safety of nuclear installations (Nuclear Safety Directive – Directive 2009/71/EURATOM amended by Directive 2014/87/EURATOM), including: -initiatives aimed at developing a harmonised technical approach to achieving the nuclear safety objective of the Directive -carrying out the Topical Peer Reviews (TPR) required by the Directive (TPR on ageing management in 2018) -participation in selected IAEA Integrated Regulatory Review Service (IRRS) missions to EU MS nuclear regulatory authorities •The implementation of nuclear stress tests: -Follow-up of the implementation of the national action plans resulting from the EU stress tests -Implementation of stress tests in new neighbourhood countries •The formulation of Commission points of view regarding nuclear investment notifications in respect of Art. 41 of the EURATOM Treaty •EURATOM obligations under the Convention on Nuclear Safety (next activities in 2019) •The EC contribution to the development of IAEA safety standards. •Ad-hoc issues (e.g. Long Term Operation/Espoo convention, etc.) arising in the area of EU nuclear reactor safety policy. Support on nuclear safety issues, or implementation of nuclear energy policy in the EU, is also provided to other DGs (e.g. DG GROW, DG ENV) upon request. A detailed list of priorities is discussed and yearly updated with DG ENER. This list is attached to this work package (only the items relevant to the present work package).	JRC.G.10 Brian FARRAR	3.3.a	ENER	JRC	M. Garriba, tel : +(352) 430133861 , e-mail : massimo.garriba@ec.europa.eu	DEVCO ENV GROW	ETSON - European Technical Safety Organisation Network IAEA - International Atomic Energy Agency (IAEA) MS EU - Member states EU NEA-OECD - Nuclear Energy Agency (OECD) Nuc Ind - Nuclear Industry	01/01/2014 31/12/2019	INS-RS	1801	Review Report on the Support to Nuclear Reactor Safety Policy	In particular of the transposition of the Nuclear Safety Directive (NSD), the deliverable will be composed of several components which will be registered in Ares (and PUBSY) as to: a) Analyses and monitoring of the transposition of the NSD in Member States, 28 reports to be reviewed and analysed (in particular wrt article 8a and 8b); b) Peer Review Workshop (May-June 2018); c) IRRS mission reports	30/09/2018	Science-for-policy reports
												1802	Support to Topical Peer Review Report	The revised Nuclear Safety Directive introduces a European system of topical peer review. The purpose is to provide a mechanism for EU Member States to examine topics of strategic importance to nuclear safety, to exchange experience and to identify opportunities to strengthen nuclear safety. The process also provides for participation, on a voluntary basis, of States neighbouring the EU with nuclear power programmes. The deliverable will consist of reviewing and assessing the Member States' national assessments. Several components compose the deliverable (ARES/PUBSY), this one consists of the related final review report.	31/12/2018	Science-for-policy reports
												1803	Long-Term Operation on Nuclear Power Plants and Environmental Impact Assessment in EU Member States	Support work on definition of Life Time Extension (LTE)/Long Term Operation (LTO), related to Environmental Impact Assessment in the context of the ESPOO Convention, Survey on Long-Term Operation on Nuclear Power Plants and Environmental Impact Assessment in EU Member States, knowledge and data collection and analysis.	31/08/2018	Science-for-policy reports
												1903	Report on JRC support to Nuclear Safety Policy	Report detailing the technical and scientific services (several individual deliverables provided on ad-hoc request, Ares/PUBSY) during the year in support to the implementation of EU nuclear reactor safety policy and legislation, including, for example: a. EURATOM Treaty Art. 41-43, b. EC participation to IAEA peer review missions (IRRS), obligations under the Convention on Nuclear Safety, contribution to IAEA safety standards, ad hoc requests on emerging issues	31/03/2019	Science-for-policy reports
268 - K-NUSP JRC.G.10	494 - CLEARINGHOUSE European Clearinghouse on Operating Experience for Nuclear Power Plants (NPP)	The work package sets the foundation for a nuclear operating experience knowledge base with the ultimate aim to become the one-stop shop that translates the massive amount of data contained in databases and websites into understandable findings, ready to be used in nuclear safety policy support. This is achieved through collaboration with member states by means of the European Clearinghouse, a network of nuclear safety authorities enhancing collaboration in operating experience feedback programs. In particular, the work package complements the operating experience programs of the member states by providing insights derived from the event reports issued by nuclear plants around the world. The members of the Clearinghouse network choose the subjects to review, which are then developed within the work package and presented as topical operating experience reports. These reports include a comprehensive, worldwide review of hundreds or thousands of events, an effort that could not be undertaken by most individual regulators. As the operating experience programs of regulators are mainly focussed in the feedback from their own nuclear power plants, the Clearinghouse brings to them a valuable international perspective, with lessons learned derived from a wider statistical base. From 2018 on, stronger collaboration with operators (e.g. WANO) and/or nuclear industry associations (e.g. FORATOM) will be sought to develop stronger synergies and complementarity. In addition to the topical reports, the work package includes as well a number of activities contributing to the management and dissemination of knowledge related to nuclear operating experience: (i) A quarterly newsletter summarizing the latest events reported by nuclear power plants worldwide, (ii) Strategic analysis of training needs in topics related to nuclear operating experience to be performed within the DANTE project, (iii) Development of web modules summarizing the most significant lessons learned around a number of «hot issues» (iv) Compilation and synthesis of event analyses based on Probabilistic Safety Analysis (v) Support the regulatory bodies in member states to prepare nuclear plant event reports aimed at the	JRC.G.10 MIGUEL PEINADOR VEIRA	3.3.a	ENER	JRC	Ivo ALEHNO		- Consejo de Seguridad Nuclear - Federal Agency for Nuclear Control BNSA NRA - Агенцията за ядрено регулиране - Bulgarian Nuclear Regulatory Authority ASN - Autorité de sûreté nucléaire BMU - Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit CNCAN - Comisia Nationala pentru Controlul Activitatilor Nucleare (RO) ENSI - Swiss Federal Nuclear Safety Inspectorate HAEA - ORSZÁGOS ATOMENERGIA HIVATAL - Hungarian Atomic Energy Authority IAEA - International Atomic Energy Agency (IAEA) ILENT - Inspectie Leefomgeving en Transport (NL) - Human Environment and Transport Inspectorate NEA-OECD - Nuclear Energy Agency (OECD) PAA - Panstwowa Agencja Atomistyki	01/01/2016 31/12/2020	INS-RS	1801	Top Ten Lessons Learned	Web modules containing the most significant lessons learned grouped around a number of «Key topics».	30/06/2018	Scientific information systems and databases
												1802	Clearinghouse Operating Experience database	The database contains reports from events occurred in nuclear power plants around the world. It will include a concept study exploring the feasibility and possible structure of a knowledge base on nuclear power plants operating experience, a feasibility for linking with the IAEA PRIS system and will be accessible through the science hub.	31/12/2018	Scientific information systems and databases
												1803	Scientific publications and outreach activity 2018	Scientific publication(s) in the field of the WPK	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1901	Review report of Topical studies	Review report of the topical studies performed in 10 years of Clearinghouse operation and their recommendations	29/03/2019	Science-for-policy reports
												1902	Scientific outputs and Dissemination	Scientific publication(s) in the field of the WPK	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
62 - FUMAGEN JRC.G.I.5	506 - SPECTRE Novel Synthesis technologies for separate effect fuel safety studies and accident tolerant fuels	Safety of nuclear fuel relies on detailed knowledge gained by material preparation, its irradiation and post irradiation examination. Separate effect investigations are an important tool to augment and expand such highly costly studies. This has been recently enabled further by the installation of Spark Plasma Sintering at the JRC, providing samples with hitherto inconceivable microstructures and compositions (nanograins, volatile fission product inclusions, etc.). Advanced powder synthesis and pellet sintering techniques will therefore be used at the JRC to achieve such fuel samples in order to study their safety relevant properties. The main focus is on UO ₂ and U, Pu-mixed oxides. Furthermore, since the accident at Fukushima, a world-wide initiative on accident tolerant fuel was launched. This WPK will thus also consider their preparation and assessment. In particular modification of the fuel by addition of high thermally conductive phases (such as SiC or graphite), potentially increasing existing safety margins during normal operation and accident situations are considered along with a scoping study on Uranium silicides. In addition, Thorium, a by-product of lanthanide mining, valorisation as a light water reactor fuel will also be investigated. This is not just an issue for the U economy, but also for the responsible use of large Th stocks now held by European industry as a result of lanthanide mining.	JRC.G.I.3 MARCO COLOGNA	3.3.a	ENER	JRC	M. Boella		- AREVA NP GMBH - Chalmers University of Technology CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives GRS - Gesellschaft für Anlagen und Reaktorsicherheit MBH IRSN - Institut de Radioprotection et Sûreté Nucléaire KTH - KUNGLIGA TEKNISKA HOGSKOLAN NUGENIA - Nuclear Generation II & III Association SNETP - Sustainable Nuclear Nuclear Research Institute Ruz - Ente per le Nuove Tecnologie, l'Energia e l'Ambiente- Casaccia - University of Pisa - POLITECNICO DI MILANO Hungarian Academy of Sciences - Delft University of Technology - POLITECNICO DI MILANO CERCA/AREVA - CERCA/AREVA France CNRS - Centre National de la Recherche Scientifique ENEA - Agenzia Nazionale per le Nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile IRSN - Institut de Radioprotection et Sûreté Nucléaire KIT - Karlsruhe Institute of Technology - AREVA NP GMBH - Tecatom - University of Manchester - UNIVERSITAT POLITÈCNICA DE CATALUNYA - Nuclear Research Institute Rez - VATTENFALL AB AMEC - AMEC Consulting CIEMAT - Centro de Investigaciones Energéticas Medioambientales Tecnológicas EDF Energy - EDF Energy EPRI - Electric Power Research Institute Westinghouse - Westinghouse Electric Sweden AB*	01/01/2014 31/03/2021	INS-RS	50620181	Scientific publications	The synthesis and characterisation of nuclear fuel samples for separate effect investigations will be reported in high quality journals and presented at international conferences	15/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
										50620182		Scientific publications	The first nuclear fuel samples synthesized with the newly installed Hot-Pressing/SPS device will be reported in high quality journals and presented at international conferences	30/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
62 - FUMAGEN JRC.G.I.5	508 - LWRSF LWR Fuel Safety	The thermal properties of fuel are of key importance for the safety assessment of nuclear reactors, as they determine the fuel temperature and thus the margin to fuel melting. A thorough knowledge of these properties and the macroscopic and microscopic mechanisms affecting them is thus required, both for virgin fuel materials and irradiated fuels.	JRC.G.I.3 Dragos STAIUCU	3.3.a	ENER	JRC	HoU DG ENER D2	RTD		01/01/2016 31/12/2019	INS-RS	508201801	Scientific publication	Scientific publication about the Enhanced Accident Tolerant Fuel material property characterisation	31/10/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
7465 - SAETEC JRC.G.I.3	2245 - SAMOFAR Safety Analysis of Molten Salt Fast Reactor	In the frame of the H2020 project SAMOFAR, the safety of a European design of a molten salt fast reactor (MSFR) will be analysed in a collaboration with European and international organisations. JRC is strongly involved in the analysis of the nuclear fuel, through experimental and modelling studies. Using a unique experimental equipment selected thermal properties of fuel salt and salt behaviour during a clean-up process will be investigated.	JRC.G.I.3 ONDREJ BENES	3.3.a	RTD	RTD	HoU, RTD.DDG3.G.4			01/08/2015 31/07/2019	CON-IA	201901	Final report of SAMOFAR project	Final report summarizing the main JRC contribution to the HORIZON2020 SAMOFAR project.	31/07/2019	JRC technical reports
63 - SEAT GEN-IV JRC.G.I.3	2252 - MYRTE Fuels for transmutation in dedicated facility	Within the scope of a facility to transmute minor actinides, new fuels must be synthesised and their properties determined. Within this project ITU will synthesise (U,Am)O ₂ -x fuels for minor actinide recycling and determine safety relevant properties during storage and normal and off normal operation. Furthermore, the coolant (Lead Bismuth) and its potential interaction with fission products released from defective fuel pins will be studied too	JRC.G.I.3 Rudy KONINGS	3.3.a	RTD	RTD	R. Lecbychova RTD G.4			01/04/2015 31/03/2019	CON-IA	201901	Final report	The final results of the WPK are summarized. This includes the investigation of thermo-physical properties of sub-stoichiometric (U,Am)O ₂ -x, the investigation of the compatibility of (U,Am)O ₂ with LBE liquid metal coolant, as well as the investigation of He release behaviour in (U,Am)O ₂ .	31/03/2019	JRC technical reports
179 - LTO JRC.G.I.4	3161 - SOTERIA Radiation effects in nuclear structural materials for safe long term operation of LWR	SOTERIA aims to underpin safe long-term operation (LTO, 60 years) of current light water reactors (LWRs) with an improved understanding of degradation phenomena occurring in reactor pressure vessels (RPVs) and reactor internals. The main degradation mechanism of RPVs is irradiation embrittlement, for reactor internals irradiation-assisted stress corrosion cracking (IASCC). SOTERIA combines the use of advanced computational tools to model degradation of RPVs and reactor internals degradation with exploitation of experimental data from tests (irradiation campaigns of RPV steels, SCC and IASCC testing of stainless steels used for reactor internals). The overall aim is to better predict the degradation of RPVs and reactor internals and to build-up a corresponding integrated software platform. Nuclear power plant operators and nuclear regulators (or respective technical safety organisations) are the targeted customers for these computational tools.	JRC.G.I.4 IGOR SIMONOVSKI	3.3.a	RTD	RTD	Rita Lecbychova (HoU RTD.G.4), Takis Manolatos	ENER		01/09/2015 31/08/2019	CON-IA	6	Prediction of stress fields and their influence	Prediction of stress fields within a large polycrystalline aggregate and their influence on initialization and growth of irradiation assisted stress corrosion cracking.	31/08/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
62 - FUMAGEN JRC.G.I.5	3983 - NFIR VII NFIR VII	The JRC will investigate safety relevant properties and analyse the behaviour of special irradiation fuel disks, which will be extended to (light water reactor) commercial fuel segments for benchmarking purposes: (1) Investigation of the release of fission products in additive fuels using vaporisation experiments and microscopy. (2) Investigation of the radiation damage state of low burn-up samples, showing a faster than expected degradation of the thermal conductivity.	JRC.G.I.3 Dragos STAIUCU	3.3.a	JRC	JRC	ENER D.2			01/09/2017 31/08/2021	CON-TW					
63 - SEAT GEN-IV JRC.G.I.3	5080 - ARDECO ARDECO	Investigations of nuclear fuel properties and behaviour in the frame of the ARDECO project of CEA, that is aiming at providing material data and models for the licensing of the ASTRID fast neutron reactor that is under design in France. The work will consist of the following items: - Post-irradiation examination of a mixed oxide (MOX) fuel pin from the Phénix reactor (Phenix treasure). - The study of the interaction B4C (the control rod material) and MOX fuel. - The interaction of liquid sodium (the coolant) with MOX fuel. - The irradiation behaviour of B4C control rod material. The negotiations with CEA are ongoing, and work is planned for 2017-2021	JRC.G.I.3 Thierry WISS	3.3.a	JRC	JRC	Rudy KONINGS			01/06/2017 31/12/2019	CON-TW					
63 - SEAT GEN-IV JRC.G.I.3	5135 - PROFARM Properties for Safety Assessment of Advanced Fuels and Reactor Materials	The aim of this work package is to provide experimental thermal property data, databases, models and simulation tools for fuels and materials for advanced reactor systems, and to study the interactions of fuels with reactor materials in order to provide a basis for safety assessments of advanced nuclear reactors. The world-wide unique JRC infrastructure and equipment will be used to provide the underpinning scientific results of fuel properties for normal and extreme conditions, for which the boundary limits will be determined by core calculations (collaboration with F4). The results are of key importance to predict the safety limits of reactor concepts selected by the European ESNII platform, mainly focusing on ASTRID, ALFRED, ALLEGRO and MYRRHA designs, and by the Generation IV forum. The work includes the study of the transmutation of minor actinides to short lived isotopes which is a potential technology for a sustainable nuclear fuel cycle in line with the targets of SNETP Roadmap, ESNII and EERA JPNM. After Fukushima, increased attention is given to safety with lessons learned for Light Water Reactors being transposed to fast systems. The foreseen activities are: - safety assessment with dedicated samples synthesised, focussing on structure, strength, heat transfer and fuel to coolant/cladding interaction - increasing resilience in abnormal and accident events, building on ITU experience - separate effect studies based on direct laser heating, to determine restructuring that occur during irradiation - upgrade of material properties of mixed oxides in TRANSURANUS fuel performance code - Post Irradiation Examination of fuels and follow up and planning of on-going and new irradiation tests The work will be done in close collaboration with key member state organizations via active participation in EERA JPNM and through bilateral agreements (CEA, SCK, NRG, CNRS).	JRC.G.I.3 ONDREJ BENES	3.3.a	RTD	JRC	Mykola DZUBINSKY		- Nuclear Research and Consultancy Group - Ghent University - IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE - RheinischWestfaelische Technische Hochschule Aachen / Aachen University of Technology - RUSSIAN RESEARCH CENTRE "KURCHATOV INSTITUTE" - Delft University of Technology - University of California, Los Alamos National Laboratory - Royal Institute of Technology - POLITECNICO DI MILANO - FORTUM NUCLEAR SERVICES OY - AREVA NP GMBH* CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CIEMAT - Centro de Investigaciones Energéticas Medioambientales Tecnológicas CNRS - Centre National de la Recherche Scientifique	01/01/2017 31/12/2020	INS-RS	DPF11	Other deliverables- scientific publications 2018	This deliverable represents a series of publications, reports and conference proceedings used to disseminate knowledge generated by the JRC in this work package. The achievements will be presented in one or more scientific presentation.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
										DPF12		Other deliverables- scientific publications 2019	This deliverable represents a series of publications, reports and conference proceedings used to disseminate knowledge generated by the JRC in this work package. The achievements will be presented in one or more scientific presentation	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
										DPF13		Other deliverables- scientific publications 2020	This deliverable represents a series of publications, reports and conference proceedings used to disseminate knowledge generated by the JRC in this work package. The achievements will be presented in one or more scientific presentation.	31/12/2020	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
7303 - MAWADEK JRC.G.III.8	6120 - SPRING Strategic Joint Programming Governance	Joint Programming in the field of radioactive waste management, including disposal, is established within the Indirect Action Programme. The corresponding call will be published in September 2017. The first five years of this Joint Programming is implemented through the European Joint Programming (EJP) programme funding scheme. This first EJP is scheduled to commence beginning of 2019. The JRC is actively contributing in its realisation by: -Participation as Member of the JOPRAD consortium, finalizing work during 2017, and reporting together with the other activities in 2018, and -Participation as a Member of the Core Group in the response to call for establishing the RWM&D-JP for its commencement beginning of 2019.	JRC.G.III.8 GUNNAR BUCKAU	3.3.a	JRC	JRC	n/a	ENER RTD	IAEA - International Atomic Energy Agency (IAEA) IGD -TP - Implementing Geological Disposal of Radioactive Waste Technological Platform MS EU - Member states EU NEA-OECD - Nuclear Energy Agency (OECD)	01/01/2018 21/12/2019	INS-RS	2	JRC support to establishing Radioactive Waste Management and Disposal Joint Programming	Final report on JRC activities in support of establishing the RWM&D Joint Programming. This includes the participation to CSA JOPRAD; the participation as member to the Core Group implementing the response to call for establishing the RWM-JP; the JRC participation in the group of Research Entities (RE) providing input in particular to the JP Joint Strategic Research Agenda and the first EJP work programme; and the work towards better organization of the RE's including working towards an own SRA. Expected release: 31/12/2018	31/12/2018	JRC technical reports
7303 - MAWADEK JRC.G.III.8	6122 - DEDICATE Development of Disposal Routes Commensurate with Waste Inventories across the EU	Member State experts are addressed for identifying a steering group for establishing the report on the present status of disposal end-points in the EU. This Steering Group is defining the ToR for the State-of-Knowledge reporting. Chairs are identified for the different sections, meetings with experts are held, the draft SoK documents are circulated to the Member States and other interested parties for comments and feed-back, and open workshops are used for reviewing the SoK documents prior to final update and publication in the IKMS Knowledge Handbook. The role of the JRC is to guide the process, provide the necessary financing, organizing the open review and feed-back workshops, and finally publishing the outcome on the IKMS Knowledge Handbook. A particular role of the JRC is to ensure	JRC.G.10 VAIDAS MATUZAS	3.3.a	JRC	JRC	n/a	ENER RTD	MS EU - Member states EU	01/01/2018 31/12/2019	INS-RS	1	Disposal routes for different radioactive wastes in the EU	Report describing the present situation in the EU Member States with respect to operating, under construction and planned disposal facilities. Identification of waste inventories presently without a disposal end-point. Finally, overview of other disposal options than the presently dominating ones (landfill, near-surface, interim depth geological, and deep geological facilities), including for example innovative boreholes for small inventories of LLW, deep boreholes for ILW and HLW	31/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7303 - MAWADEK JRC.G.III.8	6123 - MESDI Support to MSs in them implementing the Waste Directive (support actions to the MSs and review support to DG ENER)	A series of activities are continued, and new ones are initiated where JRC can support the Member States in their implementation of the Waste Directive. The activities are complementary to those implemented by DG ENER in response to legal requirements as specified directly in the Waste Directive (Notification of National Programmes, Reporting on Implementation of the Directive, and Self-Assessments/Peer-Reviews). From the past, such activities include involvement in international projects towards streamlining the Member States reporting to the Waste Directive and other national and international instruments (in particular the 'Joint Convention'). This includes, for example participation in Status and Trends projects. Other activities have been, and will continue to be, contribution to identification and initiation of activities in support of Member States with Less Advanced Programmes within the Indirect Action funding scheme. Starting 2019, such activities will fall under the forth-coming RWM&D Joint Programming, in particular Cross-Cutting IKMS activities (Strategic Studies). Future activities will especially be oriented along with the outcome of the first reporting to the Waste Directive, i.e. responding to topics where the possibility for improvement in Member States can be supported by the JRC. Some future activities thus should be coordinated with DG ENER, albeit implemented through the JRC. Additional channels will be sought with the potential for Member States identifying activities where JRC can use its independent expertise in support of Member States continuously building responsible and safe management of spent fuel and radioactive waste.	JRC.A.7 MANUEL MARTIN RAMOS	3.3.a	ENER	ENER	n/a	JRC	MS EU - Member states EU	01/01/2018 31/12/2019	CON-AA					
179 - LTO JRC.G.I.4	6167 - MEACTOS Mitigating Environmentally Assisted Cracking Through Optimisation of Surface Condition	Environmentally-Assisted cracking (EAC) is one of the major failure modes occurring in light water reactors (LWRs). The susceptibility of metallic components to EAC depends primarily on the condition of its surfaces that are exposed to the primary coolant. However, many national and international guidelines and nuclear codes & standards do not address surface conditions of critical components in nuclear power plants (NPP) or only provide qualitative recommendations. The goal of MEACTOS is to improve the safety and reliability of LWRs by improving the resistance of critical locations, including welds, to EAC through the application of optimized surface machining and improved surface treatments. The project partners will perform an experimental program to quantify the effect of various surface machining and treatment techniques on EAC behaviour of specific structural materials in the primary circuit of LWRs. The gained knowledge will be summarized in practical guidelines, which can be used for incorporation into nuclear design codes. Furthermore, a tailored roadmap for harmonization of guidelines and nuclear design codes will be produced. In this way, MEACTOS will contribute to safe and reliable nuclear power generation in Europe.	JRC.G.I.4 Oliver MARTIN	3.3.a	RTD	RTD	n/a	ENER	- UNIVERSITY OF SHEFFIELD - University of Manchester - AREVA NP GMBH* AMEC - AMEC Consulting CIEMAT - Centro de Investigaciones Energéticas Medioambientales Tecnológicas IAEA - International Atomic Energy Agency (IAEA) NEA-OECD - Nuclear Energy Agency (OECD) NUGENIA - Nuclear Generation II & III Association	01/09/2017 31/08/2021	CON-IA	1	State-of-the-art report	The state-of-the-art report will summarise the current knowledge on the topic and will be based on output of previous projects of similar topic/scope (MICRIN+, ASATAR, McSCAMP) and results & conclusions of corresponding national projects, in which project partners are involved, and experience of nuclear industry.	30/04/2018	JRC technical reports
226 - REDECAM JRC.G.I.4	6170 - McSAFE High-Performance Monte Carlo Methods for SAFETY Demonstration - From Proof of Concept to realistic Safety Analysis and Industry-like Applications	Considering the priority topics of the Nuclear Generation II and III Association (NUGENIA) and the achievements of the previous EU project on High Performance Monte Carlo Analysis, the overall objective of the current project is to move the Monte Carlo (MC) based stand-alone and coupled solution methodologies (advanced depletion, optimal coupling of MC-codes to thermal-hydraulic solvers, time-dependent Monte Carlo and methods and algorithms for massively parallel simulations) to become valuable and widespread numerical tools for realistic core design, safety analysis and industry-like applications of LWRs of generation II and III.	JRC.G.I.5 Paul VAN UFFELEN	3.3.a	RTD	RTD	n/a	ENER	- Nuclear Research Institute Rez CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives EDF - Electricité de France HZDR - Helmholtz-Zentrum Dresden-Rossendorf e.V.	01/09/2017 31/08/2020	CON-IA					
63 - SEAT GEN-IV JRC.G.I.3	6317 - EUROSAR-2 Euratom International Collaboration on Safety of Innovative Reactors - part 2	The workpackage aims to provide support to the Euratom international R&D collaborations in the area of reactor safety and system analysis with focus on those reactors which are most likely to be built in European Member States and those promoted by European stakeholders gathered in SNETP and its pillars ESNII and NC2I for the implementation of the EU SET-Plan objectives. The workpackage provides technical leadership and coordination including Euratom representations in System Steering Committees (SSCs), project management boards (PMBs), working groups (WGs) and ad-hoc task forces in order to plan and oversee the GIF R&D activities and to actively contribute to R&D projects. Currently contributions are provided to: Sodium-cooled Fast Reactor (SFR) SSC, SFR System Integration and Assessment PMB, SFR Safety and Operation PMB, Very High Temperature Reactor SSC, Lead-cooled Fast Reactor provisional SSC, Risk and Safety WG and SFR Safety Design Criteria Task Force. Further activities include: 1)Contribution to international developments on Safety Design Criteria and Guidelines for advanced and innovative reactors; 2)Contributions and support to relevant European networks and platforms including SNETP and two of its pillars (ESNII and NC2I); 3)Collaboration with IAEA and OECD-NEA, 4)Facilitating the involvement of EU member states in GIF Collaboration and	JRC.G.I.4 Halleyesus TSIGE-TAMIRAT	3.3.a	RTD	JRC	n/a		- Nuclear Research Institute Rez - ANSALDO NUCLEARE S.P.A. ANL - Argonne National Laboratory CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CIAE - China Institute of Atomic Energy (CIAE) CP ESFR - Collaborative Project for a European Sodium Fast Reactor (members of) EDF Energy - EDF Energy ENEA - Agenzia Nazionale per le Nuove Tecnologie, l'energia e lo Sviluppo Economico Sostenibile ESNII - European Sustainable Nuclear Industrial Initiative	01/01/2018 31/12/2020	INS-RS	2018001	Outreach activities Generation IV International Forum	This deliverable includes contributions to Generation IV International Forum, and in particular to: 1) SFR System Integration and Assessment Project, 2) SFR Safety and Operation Project, 3) Very High Temperature Reactor SSC, 4) Lead-cooled Fast Reactor provisional SSC, 5) Risk and Safety WG, and 5) SFR Safety Design Criteria Task Force.	31/12/2018	JRC technical reports
												2018002	Outreach activities Supporting Research	This includes an executive summary of scientific achievements and various peer reviewed papers and public technical reports and publications related to nuclear safety. The number and content depends on the progress in the activities and the degree of restriction for dissemination. Expected papers/reports include: (i) Executive summary R&D activities; (ii) Sodium-cooled Fast Reactor Safety Design Guidelines (iii) New Safety measure for SFR.	21/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												2018003	Outreach Support to Member States	This includes an executive summary of support to Member States and integration of EU advanced reactor safety research, in particular ESNII and NC2I. The number and content depends on the progress in the activities and the degree of restriction for dissemination. Expected papers/reports: Executive summary R&D activities.	30/11/2018	JRC technical reports
												2019001	Outreach activities Generation IV International Forum	This deliverable includes contributions to Generation IV International Forum, and in particular to: 1) SFR System Integration and Assessment Project, 2) SFR Safety and Operation Project, 3) Very High Temperature Reactor SSC, 4) Lead-cooled Fast Reactor provisional SSC, 5) Risk and Safety WG, and 5) SFR Safety Design Criteria Task Force.	28/12/2019	JRC technical reports
7465 - SAETEC JRC.G.I.3	6376 - SEPSMR Shaping a European Perspective on Small Modular Reactors	Small Modular Reactors (SMRs) promise attractive characteristics such as lower life cycle cost, enhanced safety performance with passive safety features, factory production, flexibility to adapt to small grids, integration with renewables and adaptability for remote locations. SMRs could play an important role in the EU to help achieve the Energy Union objectives of secure, competitive, and sustainable energy. Thus, this work package aims to support the development of strategic policies for a successful commercialization of European SMRs. The key areas of activity include: 1)Identification of European SMR designs and key areas for development to improve safety, economics and licensing 2)Assessment of technical maturity and viability of SMR concepts including technology readiness assessments for main systems, components and structures 3)Evaluation of potential safety and licensing issues 4)Analyse the development status of European SMRs concepts including the existence of domestic supply chains 5)Provide resources to policy DGs The mid-term vision is to stimulate a wider alliance of European stakeholders (industry, research organizations, universities, utilities, regulators and technical support organization) to collaborate in the R&D of pre-competitive and possibly transformational technologies to improve safety, economics and sustainability of SMRs to be deployed for achieving the Energy Union objectives. Likely platforms for such a cooperation are SNETP and EERA. Existing contacts with these groups will be used to exchange information.	JRC.G.I.4 Michael FUETTERER	3.3.a	ENER	JRC	n/a	RTD			01/01/2018 31/12/2019	INS-RS				
7465 - SAETEC JRC.G.I.3	6385 - SAMSER Safety assessment of Molten Salt Reactor	The aim of this work package is to provide experimental thermal and electrochemical property data and databases for fuels and coolants of the molten salt reactor systems which has been selected among six Generation IV concepts, but as well recently selected by several start-ups as their key modular reactor system with an envisioned mid-term deployment. The world-wide unique JRC infrastructure and equipment optimized for handling molten salts at high temperature will be used to provide the underpinning scientific results of fuel properties for normal and off-normal conditions to predict behaviour during accidental scenario. The results obtained within this WP will provide basis for safety assessments of molten salt reactor concepts studied nowadays in Europe and will provide direct member state support for countries involved in this reactor concept research, such as France, Netherlands, Italy or Czech Republic.	JRC.G.I.3 Pavel SOUCEK	3.3.a	RTD	JRC	n/a		- RUSSIAN RESEARCH CENTRE "KURCHATOV INSTITUTE" - Nuclear Research and Consultancy Group - AREVA NP GMBH* - Delft University of Technology - POLITECNICO DI MILANO - Chinese Academy of Sciences - Nuclear Research Institute Rez CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CNRS - Centre National de la Recherche Scientifique EERA - European Energy Research Alliance ENEA - Agenzia Nazionale per le Nuove Tecnologie, l'energia e lo	01/01/2018 31/12/2019	INS-RS	DSMR02	Other deliverables-scientific publications	This deliverable represents a series of publications, reports and conference proceedings used to disseminate knowledge generated by the JRC in this work package. The achievements will be presented in one or more scientific presentation.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												DSMR04	Other deliverables-scientific publications	This deliverable represents a series of publications, reports and conference proceedings used to disseminate knowledge generated by the JRC in this work package. The achievements will be presented in one or more scientific presentation.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7446 - ANDANTE JRC.G.2	6410 - FISSION Advanced studies of the nuclear fission process	New experimental data will be produced for a better understanding of the nuclear fission process. The highest priority data are fission product characteristics, i.e. mass and charge yields, kinetic energy, prompt fission neutrons and gamma-rays and their correlations. They are used to improve and adjust parameters of fission models such as the FIFRELIN Monte Carlo model developed at CEA Cadarache and the GEF model developed at CNRS Bordeaux. Improved models for the nuclear fission process are required for criticality safety programs, for the prediction of decay heat, reactivity and neutron and gamma-ray emission rates of spent fuel as well as for the prediction of the heating of core assemblies by prompt fission gamma-rays. The expertise in fission measurements within this WP will be used to develop a fission chamber for accurate gamma-beam monitoring at the new ESFRI facility ELI-NP (Extreme Light Infrastructure - Nuclear Physics, Magurele, Romania). Specific tasks	JRC.G.2 Stephan OBERSTEDT	3.3.a	ENER	JRC	n/a	RTD	CERN - European Organization for Nuclear Research CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives ELI-NP - Extreme Light Infrastructure - Nuclear Physics (ELI-NP) IAEA - International Atomic Energy	08/01/2018 27/12/2019	INS-UR	1	Report on the energy dependence of fission-fragment characteristics for neutron induced fission on Pu-239	This report will provide new reference data in response to requests by the OECD/Nuclear Energy Agency and the IAEA/Nuclear Data Section to improve the evaluation of the energy dependent neutron multiplicity in Pu-239 resonance neutron induced fission	30/11/2018	JRC technical reports
												2	Report on the measurements of prompt fission gamma-rays and fission fragment properties	This report describes a method to measure fission fragment characteristics together with prompt fission gamma-ray energy distributions. The data are important to improve models for prompt decay heat calculations.	15/11/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		-Perform experiments to determine the energy dependence of fission-fragment characteristics for the Pu-239(n,f) reaction. -Perform experiments to determine the prompt fission neutron emission spectrum for the Pu-239(n,f) reaction. -Improve the model to describe the prompt neutron and gamma-ray emission spectrum for neutron induced fission reactions. -Develop an instrument and analysis methods to determine the correlation between fission fragment characteristics (mass and charge) and prompt fission neutrons and gamma-rays.							Agency (IAEA) NEA-OECD - Nuclear Energy Agency (OECD) US DoE - US Department of Energy (DOE)			3	Scientific articles	Scientific publications and conference contributions related to studies of the nuclear fission process published during the period 2018 - 2019.	13/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
179 - LTO JRC.G.I.4	6660 - SACIA Safety Analysis of Cable Insulation Ageing	The SACIA project contributes to the Exploratory Research (ER) Programme. The safe and reliable long-term operation of nuclear power plants (NPP) depends on the integrity of the installed cables in those NPPs. These cables are essential for the operation of critical elements of the NPP as well as transfer of the electrical signals needed to the safe operations. With the recent request to extend the lifetime of the installed NPP up to 80 years (Long Term Operation or LTO), the question of ageing of the cables -initially planned for 40 years- becomes crucial. The exposition of the cables important for safety to environmental stresses, including increased temperature and radiation, results in accelerated ageing of the cables and their performance degradation. Cables degradation may result in partial or full loss of their safety function. The loss of the safety function can decrease, and in certain cases, challenge the safety of the whole nuclear power plant. The main goal of the proposed exploratory research project is therefore to develop and test at JRC a methodology to predict the evolution of the properties (mechanical/chemical) of the cables during ageing with the following three objectives: •Improvement of the understanding and knowledge concerning cables ageing and providing in-kind contribution to the state-of-art in the field; •Development of a methodology to produce accelerated ageing, allowing extrapolation of properties for	JRC.G.10 ANTONIO BALLESTEROS AVILA	3.3.a	JRC	JRC	n/a	ENER RTD		01/01/2018 31/12/2019	INS-ER	D1	Final Report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1.	31/12/2019	JRC technical reports
												D2	Peer Review Publications	Peer review publications on polymer characterisation and ageing	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
63 - SEAT GEN-IV JRC.G.I.3	6740 - IB4N Use of ion beams to emulate the effects of neutron irradiation in nuclear reactor components	The IB4N project contributes to the Exploratory Research (ER) Programme. The project aims at developing within the JRC the capacity to study the changes of materials properties under irradiation in view of optimising structural materials, cladding and fuels under levels of irradiation damage relevant to Generation IV reactors and Long Term Operation (LTO) of Nuclear Power Plants (NPP). Irradiation with neutrons at these levels of damage is not possible with the available neutron sources and would activate the samples, requiring all the characterisation to be done in hot cells. It has been proposed instead to use ion beams to simulate the effects of neutrons irradiation. The advantage of this approach is that very high levels of damage can be obtained in a limited time (tens of hours instead of decades) and no activation of the samples occurs. IB4N will prepare for and carry out irradiations with protons and alpha particles on representative materials (316LN austenitic stainless steel and UO2) at different temperatures and doses and evaluate the modifications of their physical, mechanical and chemical properties after irradiation. Comparison with results from the literature will be made in order	JRC.G.I.4 Peter HAEHNER	3.3.a	JRC	JRC	n/a	RTD		01/01/2018 31/12/2019	INS-ER	01	Final Report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1.	31/12/2019	JRC technical reports
268 - K-NUSP JRC.G.10	7162 - TOPINS Topical Support for Implementation of Nuclear Safety Directive	The Administrative Arrangement covers technical and scientific support to DG ENER for the implementation of the Nuclear Safety Directive (Council Directive 2014/87/EURATOM of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations). The specific activities include: (i) Analysis of the technical requirements of the Directive and support to the interpretation of Article 8a-8c on nuclear safety objective; (ii) Support to the implementation of the Topical Peer Review on ageing management of nuclear installations required by the directive; and (iii) Technical support to the verification of the transposition of the directive into Member States' national legislation.	JRC.G.10 Brian FARRAR	3.3.a	ENER	ENER	n/a		MS EU - Member states EU	18/12/2017 17/12/2019	CON-AA	1901	Final Report	Final Technical Report summarising the services performed, the results obtained, highlighting the achievements and making recommendations for further tasks.	17/12/2019	JRC technical reports
63 - SEAT GEN-IV JRC.G.I.3	7282 - TRIAS Test Rig for Irradiation-Assisted Stress-Corrosion Cracking	During their service in a Nuclear Power Plant (NPP), structural materials are submitted to high temperature, mechanical stress, corrosive coolant environments, and neutron radiation, the combination of which represents a harsh environment that materials must endure: radiation can significantly alter the material's thermo-mechanical performance and lifetime of a component. These conditions are very difficult to study and necessitate nuclear reactor experiments followed by post-irradiation examination in hot cells, which makes them time-consuming and extremely expensive. Building on the experience of the DTC team in Petten, the present proof-of-concept project aims at developing a miniature experimental test technique where irradiation, corrosion and thermo-mechanical load can synergistically be applied on a material in a controlled way. The experiment will be based on scaling down the membrane bulging test, using liquid lead as a pressure medium at high temperature. The membranes will be made from the structural materials to be studied, with its back face pressurized and submitted to corrosion and stress while irradiation damage is created at the front surface through irradiation by energetic ions, which penetrate through the entire thickness to the back face. The project	JRC.G.I.4 Peter HAEHNER	3.3.a	RTD	JRC	n/a	ENER		01/05/2018 31/10/2019	INS-PC	DL1	Call for tender and technical specifications	Call for tender and technical specifications for the design of a mock-up device	31/07/2018	Technical systems
												DL2	Mock up device delivered and installed	Mock up device delivered and installation completed in Petten.	30/04/2019	Technical systems
												DL3	Device specifications for liquid lead experiments.	Mock up tested and final device specifications for liquid lead experiments.	31/10/2019	JRC technical reports
3.3.b enhancement of safety of spent fuel, radioactive waste management and nuclear decommissioning- develop techniques for spent fuel and radioactive waste characterisation and study the physicochemical mechanisms relating to the long-term storage of spent fuel and disposal of radioactive waste- carry out studies for the reduction of the radiological toxicity of wastes through advanced separation and transmutation and for the safety assessment of																
62 - FUMAGEN JRC.G.I.5	215 - PIE AREVA Post Irradiation Examination of commercial LWR fuel from German reactors	Post irradiation examinations are performed at the JRC (both non-destructive and destructive) of UO ₂ , UO ₂ /Gd ₂ O ₃ and MOX fuel rods irradiated at several European power plants. Fretting and shadow corrosion analysis of cladding, along with ceramography and metallography of fuel and cladding are included in the programme. This WP provides most valuable access to and knowledge about the commercial nuclear fuel of today's generation of reactors operated in the EU, allowing to maintain the necessary level of competence to fulfill the overall objectives of the nuclear fuel safety programmes.	JRC.G.III.8 Dimitrios PAPAIOANNOU	3.3.b	JRC	n/a	n/a		IAEA - International Atomic Energy Agency (IAEA) - AREVA GMBH*	29/08/2012 31/12/2020	CON-TW					
4961 - DISARM JRC.G.III.8	259 - ESMDCM-1 Examination of stability of molten and damaged core materials after LWR severe accidents ESMDCM-1	The objective of this program is to characterize molten and damaged core materials under cooling and storage conditions after LWR severe accidents and obtain the data about their stabilities (leaching of fission products and actinides, microstructural changes that influence the mechanical properties, etc.). The data of this program will be effective for LWR severe accident management in the future, and also useful for the clean-up of Fukushima-Daiichi nuclear power plant.	JRC.G.III.8 Daniel SERRANO PURROY	3.3.b	RTD	JRC	n/a		CRIEPI - Central Research Institute of Electric Power Industry SNETP - Sustainable Nuclear Energy Technology Platform (SNETP)	19/12/2012 31/03/2018	CON-TW	1	Final report on examination of stability of molten and damaged core materials after LWR severe accidents.	JRC technical report summarising the main experimental results on corium and spent nuclear fuel stability studies in post Fukushima accidental conditions.	31/03/2018	JRC technical reports
7298 - SPEND JRC.G.III.8	548 - SPAM Spent fuel alteration mechanisms under long-term storage and disposal conditions	Radionuclide (RN) release from a deep underground repository is governed to a large extent by the source-term (spent nuclear fuel, SNF) and the near-field redox conditions. This WP determines experimentally the SF corrosion rate as a function of the ground water redox potential which itself is mainly controlled by the canister corrosion. Consequently, two crucial variables needed to be investigated; spent fuel and the near-field environment, together with their interdependent reactions (mainly radiolysis (oxidative) and corrosion of iron canister (reducing)). For the main part of existing SNF the interdependent reactions are known. In contrast, the reactor operators have changed the SF composition through addition of additives to fresh fuel, for example Cr, Al and Gd doping, and have also introduced Pu (MOX), so that the corresponding SF corrosion rates are unknown. Even more important is, for RN release from SNF, as the physical structure of the spent fuel changes with increasing burn-up (grain restructuring) and increased grain boundary inventory due to increased linear power (LP) during in-pile operation, its duration and the timespan within the irradiation history. Increased grain boundary inventory in combination with a faster corrosion of grain boundaries	JRC.G.III.8 Paul CARBOL	3.3.b	RTD	JRC	n/a		- COMMISSARIAT A L ENERGIE ATOMIQUE CEN SACLAY - UNIVERSITAT POLITÈCNICA DE CATALUNYA - STUDEVIK NUCLEAR AB - SKB INTERNATIONAL CONSULTANTS AKTIEBOLAG CIEMAT - Centro de Investigaciones Energéticas Medioambientales Tecnológicas ENRESA - Empresa Nacional de Residuos Radioactivos S.A. FZJ - Forschungszentrum Jülich	01/01/2018 28/12/2021	INS-RS	0	Final report on interim storage of SNF stability in cement water	The influence of morphological and irradiation parameters on spent nuclear fuel stability under oxidising conditions in cement water and simulating interim storage ageing will be quantified and assessed. The work is done in collaboration with ENRESA.	28/12/2018	JRC technical reports
												4	Scientific publications	Scientific publications and conference contributions related to spent fuel behaviour under long-term storage and disposal conditions.	28/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
62 - FUMAGEN JRC.G.I.5	3507 - SACA TPW Structural Analysis of Conventional Fuels TPW	JRC will perform detailed examination and safety-relevant scientific analysis of conventional nuclear fuels. Key safety aspects associated with high burnup - extended operation, fission product phase distribution, pellet-cladding interaction will be investigated on Light Water Reactor (LWR) commercial fuel compounds and special irradiation fuels with unique characteristics. The activities are in line with priorities set up in the Nuclear Generation II and III Association in the EU (NUGENIA) and other European and international organizations.	JRC.G.I.3 Thierry WISS	3.3.b	JRC	JRC	ENER D.2		CRIEPI - Central Research Institute of Electric Power Industry	01/01/2016 30/03/2018	CON-TW					
7298 - SPEND JRC.G.III.8	4386 - DISCO Modern Spent Fuel Dissolution and Chemistry in Container (DisCo)	While the scientific understanding of the dissolution of standard spent uranium oxide fuel has reached a certain mature state, new types of fuels with additives ("doped fuels") have been developed. These fuels are already in use in some reactors, and their use is foreseen to be expanded. Fuel stability data are now required to confirm that the behaviour of such fuels in a geological repository environment is the same as for standard fuel. There is still a dearth of radionuclide release data from MOX fuels, which are also currently in use in several reactors.	JRC.G.III.8 Detlef WEGEN	3.3.b	RTD	RTD	RTD, C. Davies	ENER	KAERNBRAENSLEHANTERING AB - UNIVERSITY OF SHEFFIELD - POSIVA OY - UNIVERSITY OF CAMBRIDGE - ASSOCIATION POUR LA	01/07/2017 30/06/2021	CON-IA	2	Final Report on the stability of spent Cr2O3-doped UO2 and spent MOX fuel	Progress and results obtained in quantification of long-term matrix stability and radionuclide release from Cr2O3-doped UO2 and (U,Pu)O2-fuels in aqueous model systems under various repository conditions.	31/05/2021	JRC technical reports
7465 - SAETEC JRC.G.I.3	4964 - PyroTU 2017/18 PYROMETALLURGICAL PROCESSES JFY 2017/18	Closing the nuclear fuel cycle and managing the actinides within the cycle is the key strategic issue facing all generations of nuclear systems. In all advanced fuel cycles for the sustainable GenIV systems Pu is needed as a fissile component, while minor actinides require advanced management, including separation from spent fuel, fabrication of new fuel and in-pile irradiation to abate the long term radiotoxicity of high level nuclear waste. Demonstration of safe routes for separation of actinides and fabrication of advanced fuels with the required properties is needed. This project will improve the effectiveness of co-ordination efforts between CRIEPI and the Commission in the field of nuclear fuel cycle promoting mutual interest in pyrometallurgical reprocessing technologies and related waste management issues, and playing a part in enhancing safety and establishing sustainability by a closed nuclear fuel cycle and minimizing radioactive waste and improving resource utilisation. This project is a long term programme of collaboration between JRC-ITU and CRIEPI to demonstrate and optimize the pyrometallurgical processes using irradiated fuels and genuine high level liquid waste (HLLW). Principal	JRC.G.III.8 Laura ALDAVE DE LAS HERAS	3.3.b	JRC	n/a	n/a		CRIEPI - Central Research Institute of Electric Power Industry	01/04/2017 31/03/2018	CON-TW	2017	Final Report JFY2017	Activity report containing the results of the experiment carried out during the Japanese fiscal year 2017. 1) Study on the electrorefining process using reactive cathodes, i.e. solid Al and liquid Ga cathodes, and inert stainless steel cathodes for group recovery of all actinides from irradiated METAPHIX fuel and 2) Qualitative analyses on TMI corium samples after electroreduction tests.	31/03/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4961 - DISARM JRC.G.III.8	5104 - SADARAC Stability, Defueling and Safe Conditioning of Damaged Reactor Cores	The main activities are the assessment of the stability of a damaged core in fresh water, seawater, or water with additives, the characterization of the mechanical properties of corium, which will impact its unloading from the core, and the investigation of corium treatment, conditioning in relation to its ageing and weathering behaviour. The work package takes a pragmatic approach combining "real case" characterization with underlying scientific studies to understand specific relevant mechanisms. 1. Knowledge of the stability over time of core materials (corium or fuel in storage ponds) in aqueous media is essential as they will not be retrieved for several decades. The materials should not degrade mechanically or chemically upon prolonged exposure to aqueous media, with no enhanced radionuclides release and migration to the environment. The cooling medium could be borated water as commonly used in the reactor, but may also include emergency supply from rivers or sea, all of which can have different effects on the stability of the corium. These investigations will be made on real fuel and corium from TMI-2 and Chernobyl. Corium is a complex material, and a full assessment can only be made by including complementary separate effect tests on analogue materials (appropriately doped to simulate ageing)	JRC.G.III.8 Daniel SERRANO PURROY	3.3.b	RTD	JRC	n/a	ENER	CRIEPI - Central Research Institute of Electric Power Industry ETSON - European Technical Safety Organisation Network IAEA - International Atomic Energy Agency (IAEA) IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency NEA-OECD - Nuclear Energy Agency (OECD) NUGENIA - Nuclear Generation II & III Association SNETP - Sustainable Nuclear	01/01/2017 31/12/2019	INS-UR	4	Stability of corium and SNF in borated water	The investigations on the stability of corium and SNF in borated water (as coolant) over a prolonged period of time, which generated data on the release rate of fission products and actinides, specific studies on the microstructural alteration and formation of secondary phases will be reported. The full body of data, complementary to the corrosion studies in sea water, will lead to an assessment of the behaviour of corium and the SNF under these conditions.	31/12/2018	JRC technical reports
												5	Other deliverables: Scientific publications 2018	Scientific publications and conference contributions related to stability, defueling and safe conditioning of damaged reactor cores during 2018	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4961 - DISARM JRC.G.III.8	5106 - NUSIRE Nuclear Site Remediation	NUSIRE deals with remediation of contaminated structures and sites, including end of regular operation, or subsequent to accidental conditions where liability and responsibility goes beyond that of the operator. Remediation and the closely associated site clean-up, decommissioning and restoration, refers to actions taken to reduce the impact from contamination in buildings, areas and in the associated groundwater in order to leave the site suitable for further use. Sustainable remediation balances environmental, social and economic impacts of a project, without compromising human health and environmental standards both at a local level, and for the wider community. A risk-based approach to remediation can assist countries with significant legacy clean-up challenges and budgetary constraints to manage effectively their remediation projects. Remediation encounters a series of obstacles, including concurrent activities, inadequate site characterization, poor definition of the problem, poor national policies and regulations, lack in clear definition of clean-up criteria inhibiting cost-effective and timely remediation, lack of waste classification, acceptance criteria and disposal routes for the resulting waste, lack of stakeholder engagement and support and lack in knowledge management, sharing and communication, resulting in repetition of previous errors and/or instigation of repetitive R&D. These obstacles may frequently result in remediation project cost over-runs, delays and lack of support	JRC.G.III.8 Stefaan VAN WINCKEL	3.3.b	RTD	JRC	n/a	RTD	ETSON - European Technical Safety Organisation Network IAEA - International Atomic Energy Agency (IAEA) NUGENIA - Nuclear Generation II & III Association OECD - Organisation for Economic Co-operation and Development (OECD) SNETP - Sustainable Nuclear Energy Technology Platform (SNETP)	01/01/2017 30/12/2019	INS-UR	2	Establishing a science for remediation network	The report describes the outcome of two years efforts towards establishing a network on basic sciences for improving remediation technologies. The key objective of this report is to assess the outcome in view of how to proceed with the actual implementation of such an international R&D network.	31/12/2018	JRC technical reports
												4	Other deliverables: Scientific publications 2018	Scientific publications and conference contributions related to the objectives of NUSIRE WP	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7308 - ITSP JRC.G.II.7	5280 - INSIDER Improved Nuclear Site characterization for Waste Minimization D&D under Constrained Environments	Improved Nuclear Site characterization for waste minimization in D&D operations under constrained Environment. Decommissioning and dismantling (D&D) operations are strongly dependent on the facilities history and the inventory of present radionuclides. The D&D processes are a significant source of radioactive waste and their management is a major challenge from a technical, economical, financial and societal point of view. This is recognized in a number of EU and international level reference documents and studies. These challenges also provide an opportunity for further optimisation of processes and the ambition of INSIDER project is to contribute to it. In particular, for constrained environments, new methodologies are necessary for more accurate initial estimation of contaminated materials, resulting waste volumes and timely planning. Such methodologies will be based on advanced statistical processing and modelling, coupled with tailored and innovative analytical and measurement methods. The envisaged project outcome will enable building of a fit-for-purpose representation of the radiological status of facilities (or components), with a precision level allowing decision taking based on sustainability and economic objectives with respect to different D&D scenario options. The overall project methodology is based on shared case studies in the form of interlaboratory comparisons on matrix representative reference samples and benchmarking. Industrial partners (selected D&D actors) in close cooperation with major EU R&D organisations will drive comprehensive and realistic conclusions to be formalised in guidelines, recommendations and elements for pre-standardisation initiatives. These will be validated at different scientific and industrial levels and widely disseminated to the D&D community and beyond. INSIDER is organised in 7 WP. JRC Dir G is participating in 5 of them and leads WP2 and WP7. The overall strategic INSIDER objectives are to define the best sampling strategy associated with waste production optimization, to assess performance of available measurement techniques (methods & tools) to establish a robust science base for decision-making and to establish common methodologies in view of deploying reference guidelines for use in selected cases.	JRC.G.III.8 Laura ALDAVE DE LAS HERAS	3.3.b	RTD	RTD	RTD; C. Davies		- NPL Management Ltd - CANBERRA INDUSTRIES INC - BRITISH NUCLEAR GROUP SELLAFIELD LT - Czech Metrology Institute AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CETAMA - Commission d'ETablissement des Méthodes d'Analyse du CEA (CETAMA) France FZJ - Forschungszentrum Jülich HZDR - Helmholtz-Zentrum Dresden-Rossendorf e.V. IAEA - International Atomic Energy Agency (IAEA) KIT - Karlsruhe Institute of Technology LGI - LGI CONSULTING PSI - Paul Scherrer Institute SCK-CEN - Belgian Nuclear	01/06/2017 30/06/2020	CON-IA	1	Compilation of a comprehensive and detailed database on radiological characterization of nuclear installations and identification of needs for innovative technologies	The establishment of a reliable database on radiological characterization of nuclear installations; determination of a standardized assessment methodology to enable an end-user to evaluate the effectiveness of the radiological characterization methods/techniques.	31/03/2018	Scientific information systems and databases
												2	Design of the benchmarking exercise	The development of the benchmarking system will require that the basic parameters to be included in the benchmarking, the basic features of the database and the principal expectations for the output format and content are defined. The importance of establishing industry-wide standards and guidelines for radiological characterization (and eventually waste minimization), including source reduction, reuse, and volume reduction are key parts of the benchmarking exercise.	31/05/2018	Validated methods, Reference methods and measurements
												3	Review and evaluation of radiochemistry measurement techniques	Evaluation of the existing practiced or published radiochemistry measurement techniques (from ISO standards and published national guidance) and recommended methods for their use. The review will take into account sample preparation including approaches such as laser ablation and fast sample dissolution and analytical separation using micro-systems.	31/07/2018	JRC technical reports
												4	Inventory of methodologies existing for constrained environment	Classification and categorization of the constrained environment and the impacts generated by such environment, challenges generated by each of the constrained environments considered, worth and weakness of each technology in each constrained environment and recommendation of an "in situ" method for each constrained environment.	31/03/2018	JRC technical reports
63 - SEAT GEN-IV JRC.G.I.3	5441 - GENIORS GEN IV Integrated Oxide fuels recycling strategies	The reference GANEX solvent consists at present of a mixture of TODGA and DMDOHEMA dissolved in kerosene. Due to the presence of two different extractants with different properties, its composition is complex. A simplification would be potentially advantageous and could lead to easier fission product handling and backextraction, simplified degradation chemistry and modelling, etc. The objective with this action is to investigate if it is possible to simplify the organic formulation of the GANEX process by replacing the TODGA/DMDOHEMA mixture with one modified diglycolamide (DGA). This action will include investigation of extraction properties and limiting conditions in batch extraction	JRC.G.I.5 Rikard MALMBECK	3.3.b	RTD	RTD	Roger GARBLI	CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives	01/04/2017 31/03/2019	CON-IA	Del5441201 81	Optimisation of the GANEX solvent by modified DGA'	- acid dependency / DGA concentration - scouting tests at high Pu loading, up to 40 g/L - FP product behavior - Simplified backextraction, SO3-Ph-BTBP or PTD The expected results will indicate if this route is possible/promising by exploring the limiting conditions in terms of solvent stability at high me	31/03/2019	JRC technical reports	
7465 - SAETEC JRC.G.I.3	5681 - Pyro TPW JFY2017 Study on the behaviour of minor actinides separation in liquid Ga	Pyrochemical recovery of minor actinides in liquid Ga is a promising process to minimise the environmental impact of long half life nuclides such as minor actinides, Np, Am and Cm, in spent nuclear fuel. The purpose of this project is to understand the separation behaviour of minor actinides from fission products and determine the separation factor of actinides/lanthanides at equilibrium state.	JRC.G.III.8 Laura ALDAVE DE LAS HERAS	3.3.b	JRC	n/a	n/a	CRIEPI - Central Research Institute of Electric Power Industry	01/04/2017 31/03/2018	CON-TW	2	Final report JFY 2017	Technical report on the study on the behaviour of minor actinides separation in liquid Ga. The report summarises the results on the separation behaviour of minor actinides from fission products and on the determination of the separation factor of actinides/lanthanides at equilibrium state.	15/03/2018	JRC technical reports	
7298 - SPEND JRC.G.III.8	6114 - WEIMER Waste Environment Interaction mechanisms by Electron Spectroscopy Research	This workpackage increases knowledge on interaction mechanisms of nuclear waste systems and waste forms with their environment which directly determine the stability of nuclear waste. This basic mechanistic understanding is integrated in models within performance codes to increase confidence in the safety of a waste disposal. JRC's unique PAMEC laboratory incorporating the electron spectroscopy facility (LabStation) is a key asset providing utmost versatility and sensitivity for the study of model systems. Well defined model systems are synthesized as thin films or bulk samples replicating conventional oxide fuel, but also new fuels types with additives, MOX fuel and damaged fuel. Thus the system complexity is increased stepwise to identify and understand crucial mechanisms and factors influencing surface alteration processes. New knowledge on these processes (corrosion, surface reactions, surface-bulk interdiffusion, etc.) is acquired by XPS, UPS (X-ray and UV photoelectron spectroscopies) and electrochemical methods, and in 2018 will be augmented by HREELS (High-Resolution Electron Energy Loss Spectroscopy), gas adsorption/desorption capabilities (TPD, Temperature-Programmed Desorption) and surface morphology characterisation (AFM, Atomic Force Microscopy). A key aspect of this WPK is its underpinning understanding of real systems (cf WPK SPAM in this project and the WPKs in WAIF). In WP2018 new doped model systems based on (U,Y)O2 to determine influence of trivalent fission products on surface corrosion will be launched and extended with Pd doping to determine the influence	JRC.G.I.5 ALICE SEIBERT	3.3.b	JRC	JRC	n/a	ENER RTD	- University of Manchester SKB INTERNATIONAL CONSULTANTS AKTIEBOLAG - UNIVERSITY OF SHEFFIELD KIT - Karlsruhe Institute of Technology KTH - KUNGLIGA TEKNISKA HOGSKOLAN	01/01/2018 31/12/2019	INS-UR	61142018D 2	Scientific publications	Article contributions to peer-reviewed journals and contributions to scientific conferences.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												61142019D 2	Scientific publications	Article contributions to peer-reviewed journals and contributions to scientific conferences.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7298 - SPEND JRC.G.III.8	6115 - SPERUS SPEnt fuel Rods Under Stress	Irradiated nuclear fuel will be stored for time periods far beyond of that originally envisaged and more than 100 years will become a reality. This extended storage period brings with it a host of safety issues, both for the container and the spent fuel pins. In particular, the behaviour of the fuel cladding is of paramount importance as it is the first barrier retaining the fuel. The safety of spent fuel (SF) during storage, handling or transportation requires that certain level of mechanical stability of the fuel-cladding system is retained. In case of an accident the fuel release from rod breakage must not endanger the criticality safety. SPERUS includes experimental hot cell studies in conjunction with single effect investigation to extend Nuclear spent fuel is subject to different types of radiation effects modifying its properties during intermediate storage or disposal. In this WP the radiation damage effects (fission, alpha-decay) and the impact of radiogenic inert gases (helium) accumulation will be assessed using the unique equipment in JRC Karlsruhe (Scanning and Transmission Electron Microscopy for radioactive samples, helium infusion) and suitable materials (alpha-doped UO2, irradiated fuels) in order to be able to predict their long-term behaviour in storage and disposal conditions. For the first time, nano-crystalline material (UO2, ThO2) simulating the high burnup structure will be investigated using ion beams to induce radiation damage equivalent to those expected during storage/disposal conditions. The specific behaviour of this structure against alpha-damage will be better understood, improving long term prediction capabilities. It is of prime importance to assess the specific behaviour of this specific microstructure against ageing since it constitutes the external layer of the irradiated fuel pellet. In case of water intrusion in a defected fuel rod it will be the first layer contacted. Another technologically relevant but also fundamental study will be on the kinetic effects of damage formation by alpha-decay. The mobility and defect formation thresholds will be assessed by annealing	JRC.G.III.8 Dimitrios PAPAIOANNOU	3.3.b	RTD	JRC	n/a	- AREVA NP GMBH* AREVA NP - AREVA NP Main Company BAM - Bundesanstalt für Materialforschung und Prüfung (BAM) BMU - Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit	01/01/2018 31/12/2019	INS-RS	D3three	Destructive mechanical tests of irradiated nuclear fuel rods and control of their stability under accidental handling and transportation conditions	Two devices for mechanical testing on spent nuclear fuel rods have been developed for gravitational impact and 3-point bending tests. Main objective of this work is the investigation of the mechanical integrity of spent nuclear fuel rods in accident scenarios is the main conducted in the hot-cell facilities of JRC Karlsruhe.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
7298 - SPEND JRC.G.III.8	6116 - FASTODI Fuel Ageing in Storage Disposal conditions	Evolution of the lattice parameter of alpha-damaged sample stored at different temperatures.	JRC.G.I.3 Thierry WISS	3.3.b	JRC	JRC	n/a	ENER		01/01/2018 31/12/2019	INS-RS	D41	Evolution of the lattice parameter of alpha-damaged sample stored at different temperatures.	UO2 samples doped with 238Pu will be stored and different temperatures (RT, liquid nitrogen and 200°C) and the lattice parameter regularly monitored. The effect of temperature on the formation/annealing of defects will be assessed by microstructure investigations using Transmission Electron Microscopy.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												D42	Impact of grain boundaries on damage generation and helium diffusion in UO2	Nanocrystalline UO2 samples prepared by spark plasma sintering will be implanted with helium in accelerators. The helium diffusion will be studied by thermal desorption and annealing steps performed to study the microstructure evolution (gas bubble formation). The goal is to compare the behaviour of such nanocrystalline material as surrogate of the high burnup structure of irradiated fuel and to compare it with regular size grain fuel.	31/10/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
7305 - WAIF JRC.G.III.8	6124 - WISMOR Waste management issues specific to Small Modular Reactors (SMR) and Accident Tolerant Fuels (ATF)	The escalating costs and the large capital investment needs to finance the construction of these reactors has also become a major issue. Modular designs with in factory fabrication, rather than on site, provides a means to drive down costs, but naturally limits the size of the reactor. The SMR, which had already been in consideration, has come into vogue, especially since Fukushima as the increased safety of such reactors has also become an important driver. SMR fuels will in the main be based on UO ₂ , but will be operated at linear power ratings significantly lower than that found in the high flux regions of current LWR cores. This will lead potentially to lower fuel temperatures, reduced fission gas release and different spent fuel morphology and fission product distribution therein. Though no actual spent SMR fuel is available, first tests will be made on irradiated UO ₂ samples taken from the extremity of LWR rods, where such low heating rates exist. Stability of these materials in aqueous media will be determined and assessed to identify potential safety relevant show stoppers affecting the back end of the SMR fuel cycle.	JRC.G.III.8 Detlef WEGEN	3.3.b	ENER	JRC	n/a	RTD		01/01/2018 31/12/2019	INS-RS	D201801	Report on the stability of low linear rating UO ₂ fuels specific for SMR conditions in aqueous media.	The state of the art of SMR reactors and resulting nuclear fuel waste will be assessed. The selection and characterisation of surrogates will be described as well as results on its stability.	15/12/2019	JRC technical reports	
7305 - WAIF JRC.G.III.8	6125 - HICOMA HLW Conditioning Matrices	A closed fuel cycle retains key radioisotopes for further energy production. Several constituents are continuously emitted from the cycle and must be treated and stored. Herein, the mechanical stability of conventional vitrified waste will be assessed with respect to radiation induced alterations in the local atomic structure (NMR) and to helium build up due to alpha decay (TEM/KEMS). A basis on which to build upon exists via recent collaborations with CEA and KIT-INE. These collaborations will be extended, enabling JRC to share and generate new knowledge for the assessment of these materials. Glass has become an industrial standard. Nevertheless, it has been claimed that inorganic materials which exist and are stable in nature could be even better waste forms. These can be pyrochlores and monazites amongst others. Indeed, several early minor actinide transmutation programmes focussed on these materials in a so called "once through and then out (OTTO)" concept for MA transmutation. While the irradiation tests were evaluated in terms of the material performance, knowledge gaps exist in terms of their stability in aqueous media, prohibiting any assessment of the OTTO concept. This is a new activity for JRC and will focus on yttria stabilised zirconia from the successful HELIOS irradiation test.	JRC.G.I.3 Thierry WISS	3.3.b	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	D1	High minor actinides loading factor in nuclear glass: helium solubility and mechanisms of helium bubble nucleation	To optimize the high level waste flow management, increased loading factors are studied in France. The (mechanical) stability of the waste glass is potentially affected by the radiogenic helium formation. The open structure of the glass could accommodate partly this helium produced in substantial amount and an assessment of the helium solubility would help in determining the critical quantities of (alpha-decaying) minor actinides to be incorporated in the waste glass. The study on solubility will be performed on inert glass in presence of high pressurized helium in a heated autoclave at different pressures and temperatures.	30/09/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												D2	Study of crystalline matrices for the conditioning of high level waste	Description: in parallel to glass, crystalline matrices have been proposed to host actinides among HLW due to proven long term stability in equivalent natural minerals (pyrochlores, zirconolites, phosphates). It is proposed here to perform a NMR study of the local order/disorder in synthetic compounds doped with plutonium (or rare earth elements i.e. surrogates of minor actinides like Ce, Nd), RAMAN and XRD analyses will also be performed	15/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
7305 - WAIF JRC.G.III.8	6126 - CONLEWA Conditioning Legacy Waste	Research and other organisations have accumulated "special" legacy wastes in their Hot cells and other facilities, for which no (or few) conditioning solutions exist. Here, sustainable solutions will be sought to alleviate the backlog and provide procedures to deal with special waste in a timely manner. For the JRC, this WPK has special importance for its Karlsruhe and Ispra sites application in support to the operational decommissioning and waste management programmes, and in particular relating to removal of fuel from the facilities.	JRC.G.III.8 Dimitrios PAPAIOANNOU	3.3.b	ENER	JRC	n/a		CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives IAEA - International Atomic Energy Agency (IAEA) MS EU - Member states EU	01/01/2018 31/12/2019	INS-RS	D201901	Recovered radioactive samples from resin embedding matrix	Description of the method applied, treatment of the specimens and reporting of individualities and difficulties encountered.	31/12/2019	JRC technical reports	
7308 - ITSP JRC.G.II.7	6162 - STANDER Standards in support of decommissioning and environmental remediation	The new Basic Safety Standards (Council Directive 2013/59/EURATOM) defines radionuclides specific clearance levels. Industry needs to change from the widely used gross counting methods to radionuclide specific methods using modern instrumentation such as spectrometric methods. Such methods need to be tested and validated in order to be accepted by regulators. This will require both the development of standards as well as access to reference materials with certified SI-traceable activity concentrations of radionuclides relevant in decommissioning activities. This work package deals with identifying these needs and developing reference materials that can be used for free release measurements and for on-site work. In addition, to support industry to fully exploit new developments in digital electronics, nuclear instrumentation and robotics, the development and use of documentary standards will be further supported. Nuclear decommissioning and environmental remediation are fields where robots may be effectively exploited to assess radiation and contamination levels. The use of data format standards will be stimulated in these areas by the development of a demo system, open source software tools, and training material that may be used by equipment manufacturers, system integrators, the scientific/academic community and developers of software for the analysis of digitally acquired data. ACTIVITIES •Development of reference materials with SI-traceable activity concentration to ensure regulatory compliance in nuclear decommissioning and industry. •Establish contact with stakeholders in nuclear decommissioning and remediation to improve impact of reference materials. •Propose improvements to and contribute to the development of European and International Standards. •Perform pre-normative research in support of the development of standards that support nuclear decommissioning and remediation work (documentary standards, reference materials, test materials and methods) •Develop technical systems and scientific information systems in support of the implementation of standards and methods, such as a demonstration system that acquires digital radiological data in list-mode, and encoding and decoding software to support the implementation of the list-mode data standard IEC 63047. •Stimulate the adoption of International Standards as European standards (EN), enabling policy makers to refer to those standards in EU harmonised legislation.	JRC.G.2 Jan PAEPEN	3.3.b	ENER	JRC	n/a	HOME TAXUD		CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EURAMET - European Organisation of Metrology (EURAMET) IAEA - International Atomic Energy Agency (IAEA) IEC - International Electrotechnical Commission NMIs - National Metrology Institutes	01/01/2018 31/12/2020	INS-RS	10	A compact spectrometer to demonstrate list-mode data acquisition in the IEC 63047 data format	A fast responding, portable and compact spectrometer will be developed to demonstrate the advantages of list-mode data acquisition in various applications, and to support the implementation of the data standard IEC 63047. Such systems may be mounted on robots (land or air-born) and used in decommissioning and emergency response situations. A technical manual with detailed construction plan will be produced.	31/12/2018	Technical systems
													20	Final report on the characterisation of reference materials for decommissioning measurement facilities: Co-60 and Ag-108m in grey cast steel tubes and disks	Report on the characterisation of reference materials (Co-60 and Ag-108m in grey cast steel tubes and disks) for decommissioning measurement facilities.	30/06/2018	Reference Material
													30	Qualification of an instrument for producing large area sources	Scientific publication on the performance of an instrument to produce large area sources.	31/01/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													40	Software for encoding and decoding list-mode data in support of the implementation of IEC 63047	Development of open source software tools for the encoding and decoding of data to and from the IEC 63047 format. The tools will be made available to the user's community as source code, under a dedicated licence.	15/12/2019	Scientific information systems and databases
													50	Training on the use of IEC 63047	Provision of training material in the form of e-learning tools or lectures to explain the use of IEC 63047 and the encoding and decoding software.	31/12/2019	Training
													60	Final report on the characterisation of a reference material for decommissioning measurement facilities: Co-60 in steel disks	Report on the characterisation of a calibration standard (Co-60 in steel disks) for decommissioning measurement facilities.	31/12/2019	Reference Material
													70	Results on an interlaboratory comparison for determining reference values for the certified reference material Co-60 in steel disks	Scientific article on the process to determine reference values for a new certified reference material Co-60 in steel disks.	30/06/2020	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7308 - ITSP JRC.G.II.7	6163 - NDADecom Non-destructive analysis for Decommissioning	NDADecom includes two main activities: 1)Tomography of waste drums in the characterisation/clearance stage. The Waste Clearance System (WCS) is intended for characterization of waste that has failed the clearance segregation measurement, or waste that, through historical records, is known to belong to one of the low-level waste categories. The WCS will be used as a benchmark for the experiments present in this WPK. This institutional work is linked to the competitive work package METRODECOM II. Imaging techniques such as gamma tomography applied for waste management have made significant progress. However, there is still a need for further development of such systems to enable them to be adaptable for new characterization in various configurations. Preliminary experiments will be performed in PERLA where a tomograph prototype is under development. The results of those lab experiments will be implemented in the WCS	JRC.G.II.7 Kamel ABBAS	3.3.b	ENER	JRC	n/a		IAEA - International Atomic Energy Agency (IAEA)	01/01/2018 28/12/2019	INS-RS	1	Development of a tomography system	The equipment will be developed and tested with simulated nuclear waste drums in PERLA laboratory as a test bench for Waste Characterisation System (WCS) of Ispra AREA 40.	30/06/2019	Technical systems	
												2	Upgrade of the Waste Clearance System	The WCS will be put in operation to investigate its weaknesses then upgraded from hard/software/calculation-models points of view in order to comply with the requirements of G.III.9 for characterisation and clearance of waste drums.	23/12/2019	Technical systems	
7308 - ITSP JRC.G.II.7	6164 - VTMDecom VTM support to Nuclear Decommissioning and Waste Management	JRC has a long experience in providing 3D Laser based verification and identifications systems to Nuclear Safeguards organizations. The work has until recent been focused on Design Information Verification of active or commissioned nuclear installations and on Physical Inventory of nuclear material on nuclear sites. This work-package will, based on a previous analysis, develop optimized tools to assist in decommissioning of Nuclear Sites. The deliverables range from core-level system components to end-user ready systems for management of tagged data into 2D/3D environment as well as specific tools for soil treatment supported by 3D technologies.	JRC.G.II.7 Gunnar BOSTROEM	3.3.b	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	10	Development of a 3D assisted soil-handling system	The system will use continuous 3D sensors to monitor the movement of an excavator and at the same time keeping an up-to-date record of the surface elevation of the selected area. By feeding into the system, a specific map for contaminated soil, it will be possible to indicate to an operator of the excavators where and how much soil needs to be removed. By using this system, it is expected to minimize the amount of removed soil for further decontamination.	30/06/2018	Technical systems	
												20	Development of an IT system to assist in planning, management and follow-up of decommissioning activities	This is the high-level user applications which is based on the existence of the lower-level application and 3D enabled database as defined in deliverable 30 of year 2017. With this system, a user/operator/contractor/authority can perform virtual visits to a site; perform measurements, accessing linked documents (document management not included in this project). Data can be visualized in different detail levels and selections can be exported to other third party applications (like BIM SW.) for further processing/management	28/02/2019	Technical systems	
		In this work package we will develop and improve non-destructive analysis (NDA) techniques to accurately determine the thermal and radiological characteristics of nuclear materials, avoiding complex chemical analysis. For example, for a safe, secure, economic and ecological storage or final disposal, nuclear materials have to be characterised for decay heat, neutron and gamma-ray emission rate and reactivity. Such a characterisation cannot be done by conventional NDA techniques, such as those used in nuclear safeguards which primarily focus on the determination of the amount of fissile							- SKB INTERNATIONAL CONSULTANTS AKTIEBOLAG - COMMISSARIAT A L ENERGIE ATOMIQUE CEN SACLA IAEA - International Atomic Energy Agency (IAEA)			Deliverable1	Nuclear data recommendations to improve the characterisation of spent nuclear fuel by NDA	The report describes the result of a sensitivity analysis to identify the nuclear data of importance for the characterisation of spent nuclear fuel material by NDA methods. The NDA methods being considered are: calorimetry, passive neutron, gamma-ray spectroscopy and neutron resonance analysis. The sensitivity analysis will be combined with a study of the status of the evaluated data bases to identify the nuclear data requiring improvements which will be an input to the High Priority Request List (HPRL) maintained by the NEA/OECD.	01/06/2018	JRC technical reports	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4961 - DISARM JRC.G.III.8	6220 - ADAM Advanced analysis methods for the characterisation of complex nuclear materials	material. In addition, these conventional techniques will be strongly hampered by the high radioactivity of material such as spent fuel and melted fuel originating from a nuclear accident. One of the innovative techniques under development is Neutron Resonance Analysis (NRA), an accelerator based method. It can be applied to nuclear safety, security, safeguards and decommissioning and has potential in other domains such as cultural heritage and the characterisation of reference materials. Specific tasks are: -Design of a dedicated system for Neutron Resonance Analysis (NRA) to determine non-destructively the nuclide vector. -Demonstrate NDA measurements, including NRA, on complex nuclear materials (spent fuel pellets and solutions). -Identify and improve nuclear data that are crucial to determine the decay heat and gamma and neutron emission rates of spent fuel by direct NDA measurements. The study includes a sensitivity	JRC.G.2 Peter SCHILLEBEECKX	3.3.b	ENER	JRC	n/a	RTD	IGD -TP - Implementing Geological Disposal of Radioactive Waste Technological Platform IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency NEA-OECD - Nuclear Energy Agency (OECD) SCK-CEN - Belgian Nuclear Research Centre (SCK-CEN) Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2018 31/12/2019	INS-RS	Deliverable2	Validated NDA methods to characterise spent nuclear fuel samples	A report will be produced describing validated NDA methods to determine the thermal and radiological characteristics of nuclear materials, avoiding complex chemical analysis. The validation activities include measurements on well documented spent fuel materials that are part of the REGAL project organised by the SCK-CEN.	01/08/2019	Validated methods, Reference methods and measurements
												Deliverable3	Scientific articles	Scientific publications or conference contributions related to the characterisation of complex nuclear material by NDA published during the period 2018 – 2019.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
4961 - DISARM JRC.G.III.8	6222 - PreADES Preparatory Study on Analysis of Fuel Debris	PreADES, when fully formulated will be a project running under the auspices of OECD NEA. It is largely triggered by Japan's efforts in the remediation of the Fukushima site, but brings together all major severe accident mitigation players worldwide. It is a platform, within which and from which JRC can leverage its own knowledge generation and dissemination activities. The main activities of PreADES are the following: *to share and update information and expertise on properties and characterization of fuel debris in nuclear accidents; *to jointly compile and evaluate selected topical issues based on the latest data and information, and identify gaps and priorities.	JRC.G.III.8 Daniel SERRANO PURROY	3.3.b	RTD	JRC	n/a		IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency ETSON - European Technical Safety Organisation Network IAEA - International Atomic Energy Agency (IAEA) SNETP - Sustainable Nuclear Energy Technology Platform (SNETP)	01/01/2018 31/12/2019	INS-RS	1	JRC's expertise on fuel debris characterisation	JRC technical report summarising the experimental fuel debris characterisation carried out in JRC Karlsruhe in the last decades, with the aim to propose a possible collaborative research plan on the analysis of fuel debris from Fukushima that is envisaged to be shipped to European partners in ca. 2020.	31/12/2018	JRC technical reports
4961 - DISARM JRC.G.III.8	6379 - SAMOSA Examination of stability of molten and damaged core materials after LWR severe accidents	Main activities of SAMOSA are to characterize molten and damaged core materials under cooling and storage conditions after LWR severe accidents and obtain the data about their stabilities (leaching of fission products and actinides, microstructural changes that influence the mechanical properties, etc.). The data of this WPK will be effective for LWR severe accident management in the future, and also useful for the clean-up of Fukushima-Daichi nuclear power plant. This new TPW project is the follow-up and extension of ESMDCM-1.	JRC.G.III.8 Daniel SERRANO PURROY	3.3.b	RTD	JRC	n/a	ENER RTD	IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency NUGENIA - Nuclear Generation II & III Association SNETP - Sustainable Nuclear Energy Technology Platform (SNETP)	01/04/2018 31/03/2020	CON-TW	1	Final Report on corium and spent nuclear fuel stability studies in post Fukushima accidental conditions	Main experimental results on corium and spent nuclear fuel stability studies in post Fukushima accidental conditions.	31/03/2020	JRC technical reports
4961 - DISARM JRC.G.III.8	6720 - RADCAS4DEC RADioCarbon ASSESSment for DECOMmissioning	The RADCAS4DEC project contributes to the Exploratory Research (ER) Programme. The aim of this ER project is to design a compact device for on-site, fast, reliable and cost effective detection of radiocarbon with sensitivity comparable to that of accelerator mass spectrometry. 14C is a radioactive carbon isotope associated with radiological risks with respect to long-term safety of disposed nuclear waste, but in particular occupational exposure during the operation and the decommissioning of nuclear power plants (NPP). The new analytical device thus will have an important impact on occupational safety and solve a major problem raised by NPP decommissioning activities. The device will make use of a heterodyne spectroscopy system with two quantum cascade mid-	JRC.G.III.8 Laura ALDAVE DE LAS HERAS	3.3.b	JRC	JRC	n/a			01/01/2018 31/12/2019	INS-ER	1	Final Technical Report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1	31/12/2019	JRC technical reports
268 - K-NUSP JRC.G.10	6840 - RENEUW Responsible and safe management of EU Nuclear spent fuel and radioactive Waste	The objective of the work-package is to provide the required technical and scientific support to DG ENER for the implementation and monitoring of EU nuclear waste management policy and legislation (EURATOM Treaty, COUNCIL DIRECTIVE 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste). The activities of the project comprise the required technical support for: *The implementation and follow-up of the EU Directive 2011/70/EURATOM including: *Support to the review of national reports and national programmes, including inventories for SF&RW *Support and provision of JRC observers to key peer review missions. *And development of harmonised set of inventory data reporting *Assistance to review and development of IAEA safety standards of interest to DG ENER with participation to the WASSC, TRANSSC Committees *Interface with International Working Groups and Committees (e.g. OECD/NEA) *Support to the Review Meeting of the Joint Convention: review of selected MS reports and preparation of questions on relevant matters A detailed list of priorities is discussed and yearly updated with DG ENER. This list is attached to this work package. The Work Package is complementary and seek for synergies with the MAWADEK project and more particularly the MESI WPK-6123.	JRC.G.10 VAIDAS MATUZAS	3.3.b	ENER	JRC	n/a			01/01/2018 31/12/2019	INS-RS	1801	Review Report on the Support to Nuclear Waste Directive	Review report of the JRC Support to the implementation of the Directives on SF&RW (2011/70/Euratom and 2006/117/Euratom), in particular *Support to the review of national reports and national programmes, including inventories for SF&RW *Support and provision of JRC observers to key peer review missions. *Development of harmonised set of inventory data reporting *Assistance to review and development of IAEA safety standards of interest to DG ENER with participation to the WASSC, TRANSSC Committees *Support to the Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management: review of selected MS reports and preparation of questions on relevant matters The deliverable will be composed of several components which will be individually registered in Ares (and/or PUBSY as intermediate deliverables)	15/11/2018	Science-for-policy reports
												1901	Final report on JRC support to the implementation of the Nuclear waste directive	Final report on JRC support to the implementation of the Nuclear waste directive, and contribution to the REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on progress of implementation of Council Directive 2011/70/EURATOM.	28/02/2019	JRC contributions to policy documents
3.3.c improvement of nuclear emergency preparedness and response (EP&R), environmental monitoring, radiation protection and radioecology: support Member States and Commission departments on the exchange of information in case of radiation emergency and on routine and emergency radiological monitoring of radioactivity levels in the environment. This includes hosting, maintaining and developing the related rapid alert, information exchange and																
226 - REDECAM JRC.G.I.4	482 - NURAM NUclear Reactor Accident Analysis and Modelling	The NURAM WPK aims to develop adequate safety assessment and modelling competences for current Nuclear Power Plants in support of policy DGs and Member States. The work focuses on Reactor Safety, Severe Accidents and Emergency Preparedness and Response Source Term evaluation. It seeks integration and synergies of JRC capabilities in the field by contributing to model and assess the prevention and mitigation of severe accidents and to reinforce a Coordinated Response at JRC level in case of Nuclear Events or Crises. Main activities and outcomes include: 1) To evaluate and integrate the results of the individual project WPKs in support to the implementation and monitoring of the Nuclear Safety Directive with particular focus on aspects related to the prevention and mitigation of severe accidents (SA); 2) To build expertise in NPP accident scenarios assessment and source term evaluation by developing and implementing evaluation tools to provide accident analyses information in the event of a nuclear crisis; 3) To contribute to the development and use of the Accident Source Term Evaluation Code ASTEC as the reference European code for Severe Accident research focusing on mastering plant applications	JRC.G.I.4 Luca AMMIRABILE	3.3.c	ENER	JRC	Ivo ALEHNO	RTD	-RUSSIAN RESEARCH CENTRE "KURCHATOV INSTITUTE" - VUJIE - Delft University of Technology - UNIVERSITAET STUTTGART - Nuclear Research Institute Rez AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CIEMAT - Centro de Investigaciones Energeticas Medioambientales Tecnológicas EDF - Electricité de France	01/01/2014 31/12/2019	INS-RS	PSD201800 1	A Diagnosis & Prognosis Tool for Severe Accidents in European Nuclear Power Plants	The report presents the methodology developed for a systematic approach in the diagnosis and prognosis of nuclear severe accidents including the modelling and adjustment of surrogate models using the code MAAP5 to assess European Nuclear Power Plants accident scenarios, and the related sensitivity analyses and benchmark exercises.	30/06/2018	JRC technical reports
												PSD201900 1	Roadmap on R&D needs on the Ex-Vessel Steam Explosion issue	The report aims at providing a global overview on the ex-vessel steam explosion phenomenon in case of a severe accident in a NPP in view to assess potential accident management procedures. After reviewing previous and on-going research activities, the document will address the physical models, numerical codes and experimental evidence associated to the phenomenon. Successively the report summarises the outcomes of the PIRT exercises on physical models, numerical codes and experimental evidence related to Ex-Vessel Steam Explosion providing a roadmap on the R&D needs to solve the open issues.	31/10/2019	JRC technical reports
268 - K-NUSP JRC.G.10	713 - N-EP&R Support to Nuclear Emergency Preparedness and Response from REM	The role of the EC in case of Radiation/Nuclear unplanned event are: - To ensure that MSs are aware of urgent information received under ECURIE (European Community Urgent Radiological Information Exchange) - To ensure the protection of the internal market from contaminated food/feed by urgent implementation of regulation. - To collect and assess all information which is of interest for the EU and to provide feedback; - To assist on request to EU MS and non EU MS - To assess the conformity with EU Legislation and to issue an ad-hoc Regulation or Decision if necessary. JRC provides scientific and technical support in this role: EURDEP (European Radiological Data Exchange Platform)/ECURIE systems allow to trigger the emergency status and to exchange the first information, nuclear reactor safety assessment, accident modelling and source term evaluation, provide environmental radioactivity measurements in food and environment in emergency situations. This work-package aims at keeping the above mentioned systems operational by means of technical	JRC.G.10 Marc DE CORT	3.3.c	ENER	JRC	Costas Constantinou, Vesa Tanner	AGRI DEVCO ECHO SANTE	EU MS R/N emergencies - EU MS Authorities competent for R/N emergencies Env Rad Mon EU - Radioactivity Environmental Monitoring National laboratories and institutes IAEA - International Atomic Energy Agency (IAEA)	01/01/2014 22/12/2020	INS-RS	1801	ECUREX Report	ECUREX is the annual EC nuclear emergency response exercise for testing and examining the performance and well functioning of ECURIE (European Community Urgent Radiological Information Exchange) system. JRC provides accident scenarios and related simulation of dispersion of radioactivity in the environment, as well as making this information available on the EURDEP (European Radiological Data Exchange Platform) Web-site in simulated real-time. All ECURIE Member States (31 countries) participate in the exercise. Results of the WebECURIE and EURDEP performances are analysed and reported by the EC. ECUREX is organized by DG ENER D.3, hence this deliverable is on specific demand.	30/10/2018	Science-for-policy reports
												1901	NRP&R Database	Development of a knowledge database with scenarios and response, including lessons learned from historic events and decision support tools developed in international handbooks such as the European handbooks Development of information material of general nature on radiation emergencies, countermeasures and recovery	29/06/2019	Scientific information systems and databases
268 - K-NUSP JRC.G.10	715 - REM Radioactivity Environmental Monitoring	The Work Package aims at supporting the European Commission to fulfill its commitments in the implementation of the art.36 of the Euratom Treaty, arrangements for the early exchange of information in the event of a radiological emergency and in support to the Basis Safety Standards (BSS) Directive (2013/59/EURATOM). It collects and makes sense of knowledge within and outside the JRC, in close collaboration with EU (and non-EU) Member States safety authorities, in support to the EU Nuclear Safety Policy and national data providers. Major activities are centred on: - collecting and evaluating the environmental radioactivity data, developing procedures and software and defining subsequent training needs (in synergy with the DANTE project) - providing development support and data collection to the European Community emergency support information systems, conceiving, developing and testing the ECURIE software and developing and maintaining the EURDEP system which are essential in support to the N-EP&R WPK. Particular support to be given to the IAEA Emergency Preparedness & Response projects USIE and IRMIS. A new key issue will be to address measures taken to ensure that the applications are in compliance with the current Commission IT security standards. - collecting and organising data on naturally occurring radioactivity, in particular finalising the European Atlas of Natural Radiation, which is intended to familiarize the public with the radioactive environment, to give a balanced view of the annual dose it may receive from natural radioactivity and to provide reference material and generate harmonized data for the scientific community. In addition, this work-package will support DG ENER and EU Member States with implementing the BSS directive and related action plans. A feasibility study will be made to explore additional support activities to DG ENER which will facilitate the transposition of the requirements of the 2013 BSS Directive into EU Member States' national legislation, in particular for environmental radioactivity and NORM (Naturally Occurring Radioactive Materials). A detailed list of priorities for the work to be performed in support to DG ENER is discussed and yearly updated with DG ENER. This list is attached to this work package (only items relevant to the present work package, in combination with the N-EP&R work package).	JRC.G.10 Marc DE CORT	3.3.c	ENER	JRC	Vesa Tanner, Alan Ryan	AGRI SANTE	EU MS R/N emergencies - EU MS Authorities competent for R/N emergencies Env Rad EU - EU Member State authorities competent for environmental radioactivity Env Rad Mon EU - Radioactivity Environmental Monitoring National laboratories and institutes	01/01/2014 30/12/2020	INS-RS	1801	REM Monitoring Report 2016	Report with quarterly average values of radioactivity levels in airborne particulates, surface water, drinking water, milk and mixed diet for the 28 countries of the European Union (sparse and dense network) for 2016.	31/10/2018	Science-for-policy reports
												1802	Release of WEB ECURIE III	ECURIE is the official IT tool which EU MSs have to use to notify a nuclear/radiological emergency and subsequently provide information on the status of the emergency. This version is a release candidate. Special attention to compliance with the latest Commission IT security standards.	31/12/2018	Scientific information systems and databases
												1803	Review of BSS implementation in MSs	Review of the Member States national transposition of the Basic Safety Standards Directive. The latest Basic Safety Standards Directive entered into force on 6 February 2014 and EU countries must ensure compliance by 6 February 2018. Support to DG ENER, Review-Assessment and Reporting for contribution to the EC communication to the Council and European Parliament check Management reports (calls and reporting)	30/06/2018	JRC contributions to policy documents
												1804	Scientific outputs	Scientific publication(s) in the field of the WPK	29/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1805	REM-BSS2013 Feasibility study	Report describing the results of a feasibility study to identify for which areas of the Basic Safety Standards 2013 REM can optimise its support programme to DG ENER, in particular for environmental monitoring and NORM	22/12/2018	JRC technical reports
1901	Technical report on Radon in workplaces	Collection and harmonization of indoor radon data from educational workplaces (universities, schools, kindergartens etc.), by contacting national competent authorities identified through the European Indoor Radon Map effort. Creation of a first map of indoor radon concentration in these sites. This activity supports the implementation of the European Basic Safety Standards Directive	31/03/2019	Science-for-policy reports												

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												1902	Scientific outputs	Scientific publication(s) in the field of the WPK	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1903	Monitoring report production services	First release of IT tool to extract REMdb relevant data from the Environmental Radioactivity Monitoring datapool and import into the REM Data Submission Tool	20/06/2019	Scientific information systems and databases
226 - REDECAM JRC.G.1.4	2217 - FASTNET FAST Nuclear Emergency Tools	The work package contains the JRC contribution to the Euratom H2020-NRFP2-2014 FASTNET project in collaboration with partners from EU, North America and IAEA. The project's target is to develop fast prediction tools (computer codes) for Severe Accident progression and Source Term evaluation. These tools will be used in Regulatory Bodies or TSOs crisis centres. JRC-IET will mainly contribute to tools development and validation as well as benchmarking of these tools with SA computer codes like ASTEC V2 and MAAP4-5	JRC.G.1.4 Stephan HERMSMEYER	3.3.c	ENER	RTD	Roberto PASSALACQUA	RTD	- Norwegian Radiation Protection Authority - Swedish Radiation Protection Authority - UNIVERSITAET STUTTGART CIEMAT - Centre de SUEZTRACTEBEL SA - IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE - Nuclear Research Institute Rez - LIETUVOS ENERGETIKOS INSTITUTAS AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies	01/10/2015 30/09/2019	CON-IA	5	Final scientific report on emergency exercises	In view of the project's target to develop fast prediction tools for Severe Accident progression and Source Term evaluation, the report describes JRC work in preparing emergency exercises and carrying them out. The report will cover (i) exercises definition, (ii) Source Term evaluation exercises and (iii) Emergency management exercises.	30/09/2019	JRC technical reports
226 - REDECAM JRC.G.1.4	2218 - IVMR for LWR In Vessel Melt Retention for Light Water Reactors	JRC contribution to the Euratom H2020-NRFP1-2014 IVMR for LWR. The stabilization of molten corium is recognised as essential if a safe and stable state is to be reached following a severe accident. Among the possible options, In-Vessel Melt Retention (IVMR) appears as an attractive solution that would minimize the risks of containment failure. The project aims to ensure and demonstrate adequate safety margins, including identification of efficient technical solutions for the external cooling of the vessel and performing best-estimate evaluation of relevant scenarios. The project is conducted jointly with IRSN. JRC G.1.4 will be leading the WP dealing with modelling activities. G.1.3 will be involved in an experimental WP where different partners fabricate simulated Corium samples and carry out measurements to confirm and improve data of thermo-physical properties. This experimental work makes use of laboratories at JRC in Karlsruhe and is supported by a project budget	JRC.G.1.4 Stephan HERMSMEYER	3.3.c	ENER	RTD	Roberto PASSALACQUA	RTD	- Nuclear Research Institute Rez - LIETUVOS ENERGETIKOS INSTITUTAS AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies	01/06/2015 31/05/2019	CON-IA	1	Scientific Report on extended IVMR methodology	JRC-IET contribution to IVMR WP2.1, scientific report presenting the state of the art IVMR methodology at the end of the project. The related IVMR deliverable D2.7 is due at month 48; JRC-IET has the lead in compiling that report.	31/05/2019	JRC technical reports
268 - K-NUSP JRC.G.10	5145 - MetroRADON Euramet SRT-v03 Metrology for Radon Monitoring	The Joint Research Project (JRP) shall focus on the traceable measurement of low radon activity concentrations and it shall contribute to the creation of a coordinated metrological infrastructure for radon monitoring in Europe. The specific objectives of the JRP are: 1. To develop novel procedures for the traceable calibration of radon (222Rn) measurement instruments at low activity concentrations (100 Bq/m3 to 300 Bq/m3) with relative uncertainties ≤ 5 % (k=1). As part of this, to develop new radioactive reference sources with stable and known radon emanation rates. 2. To investigate and to reduce the influence of thoron (220Rn) and its progeny on radon end-user measurements and radon calibrations. 3. To compare existing radon measurement procedures in different European countries and from the results optimise the consistency of indoor radon measurements and soil radon exhalation rate measurements across Europe. 4. To analyse and develop methodologies for the identification of radon priority areas (as defined in the European Council Directive 2013/59/EURATOM) and investigate the relationship between soil radon exhalation rates and indoor radon concentrations. 5. To validate traceability of European radon calibration facilities, and publish guidelines and recommendations on metrologically sound calibration and measurement procedures. JRC, through the present work package, will be involved in the objectives 1, 3 and 4 and lead the	JRC.G.10 GIORGIA CINELLI	3.3.c	ENER	RTD	Vesa Tanner, Stefan Mundigl	SANTE	EURAMET - European Organisation of Metrology (EURAMET) IAEA - International Atomic Energy Agency (IAEA) NMIs - National Metrology Institutes WHO - World Health Organization	01/06/2017 31/05/2019	CON-IA	1801	Report on missing and update information on radon	A report on the results of the questionnaires on indoor and geogenic radon surveys will be compiled (project deliverable number D3).	31/12/2018	JRC technical reports
												1802	Scientific Publications	Publications on the results of the comparison and harmonization of radon measurement procedures in Europe and on the analysis - development of methodologies for the identification of radon priority areas	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1901	A technical report on preparation of radon/thoron emanation sources	A report describing radon and thoron source preparation approaches and their characterization in details.	01/02/2019	JRC technical reports
												1902	Final report	Final report of the project covering the development of novel procedures for the traceable calibration of radon, comparison and harmonization of radon measurement procedures in Europe and validation of traceability of European radon calibration facilities	30/05/2019	JRC technical reports
268 - K-NUSP JRC.G.10	5148 - Preparedness Euramet SRT v18 Metrology for mobile detection of ionising radiation following a nuclear or radiological incident	The Joint Research Project (JRP) shall focus on the traceable measurement and mobile detection of ionising radiation following a nuclear or radiological incident. It shall contribute to the development of the associated joint European metrology infrastructure. The specific objectives of the JRP are: 1. To develop unmanned aerial detection systems installed on drones and helicopters for the remote measurement of dose rates and radioactivity concentrations. In addition, to establish novel methods applicable to core and remote areas of a nuclear or radiological incident for air-based radiological measurements including dose rates, radioactivity concentrations, traceable calibrations for the determination of ground surface activities and interpretation methodologies for drone or helicopter based radiological measurements. 2. To develop transportable air-sampling systems for immediate information on radioactive contamination levels in air. This should include generating industry appropriate prototypes of modular and portable air-sampling systems based on gamma spectrometric detectors that can be quickly transported to places of interest. 3. To investigate the metrological relevance of 'crowd-sourced monitoring' data on dose rates and provide recommendations on the usability of such data. 4. To establish stable and reproducible procedures to measure ambient dose equivalent rates using passive dosimetry in order to harmonise passive dosimetry for environmental radiation monitoring across Europe. 5. To facilitate the take up of the technology and measurement infrastructure developed in the project by the measurement supply chain (instrument manufacturers, accredited laboratories), standards developing organisations (ISO, IEC) and end users (national nuclear regulatory bodies, decision/policy makers e.g. the International Atomic Energy Agency (IAEA), the European Community Urgent Radiological Information Exchange (ECURIE), the Organisation for Economic Development and Cooperation (OECD) - Nuclear Energy Agency, the European Radiation Dosimetry Group (EURADOS).	JRC.G.10 Konstantins BOGUCARSKIS	3.3.c	ENER	RTD	Vesa TANNER, Costas CONSTANTINOU	ECHO	EU MS R/N emergencies - EU MS Authorities competent for R/N emergencies EURAMET - European Organisation of Metrology (EURAMET) Env Rad Mon EU - Radioactivity Environmental Monitoring National laboratories and institutes IAEA - International Atomic Energy Agency (IAEA) IEC - International Electrotechnical Commission ISO - International Organization for Standardization (ISO) NMIs - National Metrology Institutes	01/07/2017 30/06/2019	CON-IA	1801	Scientific publications 2018	Scientific publication in the field of the WPK	21/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1901	Scientific publication 2019	Scientific publication(s) in the field of the WPK	30/06/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												1902	Technical report on the metrological relevance of 'crowd monitoring' data on dose rates	Technical report on the outcome of the work on objective 3 of the project: To investigate the metrological relevance of 'crowd monitoring' data on dose rates and provide recommendations on the usability of such data	31/05/2019	JRC technical reports
												1903	Project Final Report	Final report of the work of the work-package in contribution to the Joint Research Project	30/06/2019	JRC technical reports
7448 - SARA JRC.G.2	6345 - SELMER Support to European Laboratories Monitoring Environmental Radioactivity	In this WPK, JRC will support Member States and DG ENER in their efforts of implementing the Health and Safety part (Chapter 3) of the Euratom Treaty. DG ENER can only perform Article 35 verifications to one installation in circa four countries each year. By performing a Proficiency Test (PT) each year, JRC enables the Commission to perform verifications to every MS every year, albeit for a specific measurement type. The work of JRC and ENER thus becomes perfectly complementary. The Article 35 experts and DG ENER encourage JRC to carry out PTs (Proficiency Tests). They also comment on the plans that are fixed several years in advance as it takes long to develop and test suitable reference materials for the PTs. The upcoming Article 35 PTs involve (i) radiiodine and radiocaesium in feed (2018), (ii) radon in water (2019) and (iii) radiiodine and radiocaesium in air-filters (2020) or gross-alpha/beta activity in water. JRC tries to address the most important issues that the MS expert requests. In recent years this has involved support to Member States' attempts to comply with the new Euratom-Drinking Water Directive and the new Basic Safety Standards.	JRC.G.2 Mikael HULT	3.3.c	ENER	JRC	n/a	ENV JRC SANTE	- Seibersdorf laboratories - IAEA EURAMET - European Organisation of Metrology (EURAMET) Env Rad Mon EU - Radioactivity Environmental Monitoring National laboratories and institutes IAEA-MEL - Marine Environment Laboratory of IAEA ICRM - International Committee for Radionuclide Metrology (ICRM) NMIs - National Metrology Institutes Rad Protect EU - Authorities for radiological protection EU	01/01/2018 31/12/2019	INS-RS	1	Reports describing Proficiency Tests amongst Member State laboratories in support of Euratom Treaty Article 35 on measuring radioactivity in food and feed.	These reports summarises proficiency tests in support of Article 35 asked by Member State Experts and DG ENER that will include (i) production and testing of the reference materials, (ii) link to the future CEN standard, (iii) results of participants for reporting under normal conditions and emergency conditions and (iv) analysis of the results and proposed actions to support laboratories with poor results.	15/06/2018	JRC technical reports
												2	Report describing testing and validation of a protocol for determination of radioactivity in feed.	This report will describe the testing of a draft CEN standard (developed by JRC) for gamma-ray measurements of I-131, Cs-137 and Cs-134 in feed.	15/10/2018	Validated methods, Reference methods and measurements
												3	Scientific Articles in International journals	Scientific publications or conference contributions related to Proficiency Tests of radiological laboratories in Member States in the period 2018 – 2019.	20/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												5	Report describing a Proficiency Test amongst Member State laboratories in support of Euratom Treaty Article 35 on measuring radioactivity in water.	This report summarises a proficiency test requested by member state experts and DG ENER in support of Article 35 linked to testing the implementation of the new EURATOM Drinking Water Directive (Council Directive 2013/51/EURATOM) that will include (i) production and testing of the water reference materials, (ii) link to ISO standards, (iii) results of participants and (iv) analysis of the results and proposed actions to support laboratories with poor results.	15/10/2019	Validated methods, Reference methods and measurements

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												6	Report describing a survey on member state laboratories capacity to measure radioactivity in food.	This is the results of a survey requested by the Member States' Article 35 Experts and DG ENER to investigate the diversity of radioanalytical methods used for measurement control of radioactivity in food. The aim of the report is to help member state identify best practices and stimulate harmonisation.	15/12/2019	JRC technical reports
226 - REDECAM JRC.G.I.4	6452 - MASSA Materials Science for Severe Accident Analysis	Assessing the nuclear materials behaviour under hypothetical accidental conditions is paramount for the safety of a nuclear power plant, and particularly under extreme conditions of temperature, pressure and chemical environment. The main objectives of MASSA are: 1) To cover experimental studies on degraded and molten irradiated nuclear fuel (corium) from real and simulated severe accidents. 2) To improve the understanding of processes under extreme conditions and modelling thereof, providing a path to analyse the consequences of an incident or accident and to develop accident management procedures. 3) To appraise mitigation and remediation strategies, an aspect followed up in a sister WPK SADARAC (5106) of the DISARM project (4961) in close liaison with SAMPO. Missing (or partially missing) data for reactor materials under extreme conditions will be generated permitting improved modelling and assessment of accident propagation. Thus, material research carried out in MASSA will underpin the activities of other work packages in REDECAM project, (namely NURAM, FASTNET, IVRM and SAFEST). JRC is a highly-acknowledged EU partner in this research fields; access to its experimental facilities and collaborations are highly sought and appreciated by member states' research institutions. Advanced material preparation and characterisation techniques and facilities will be implemented, including heating to extreme temperatures and investigating surface and bulk properties, tested and jointly used by several JRC units. Moreover, a new Knudsen Cell Mass Spectrometry (KEMS) facility will be put into operation at JRC Karlsruhe. Equipped with a magnetic	JRC.G.I.3 Dario MANARA	3.3.c	ENER	JRC	n/a	DEVCO	UNIVERSITA' DEGLI STUDI DI ROMA LA SAPIENZA - AREVA NP GMBH* - POLITECNICO DI MILANO - Delft University of Technology AECL - AECL Chalk River - Canada CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives EDF Energy - EDF Energy IAEA - International Atomic Energy Agency (IAEA) IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency KIT - Karlsruhe Institute of Technology	01/01/2018 31/12/2019	INS-RS	201901	Investigating the Plutonium corium subsystems	The Pu-oxide corium subsystem evaluates the phase diagrams of the Pu,Zr,O-, Pu,Fe,O- and Pu,Fe,Zr O-systems. Samples for high temperature investigations will be produced by adequate methods (e.g. sol-gel, powder metallurgy, arc-melting) and characterised by XRD, Raman spectroscopy and, where useful, other methods like NMR or XAS. The high temperature (melting and evaporation) behaviour of these subsystems will then be investigated.	30/06/2019	JRC technical reports
												D557245	Scientific publications and outreach activities	Scientific output to peer-reviewed papers and contributions to conferences for activities concerning corium characterisation nuclear material vaporisation and MOX-B4C interaction for the year 2018.	30/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
3.3.d assurance and improvement of nuclear safeguards- pursue the technical and scientific development of safeguard tools and technologies, destructive and non-destructive methods and techniques (verification and IT systems, analytical services, training, special equipment, etc.) and standards and reference materials to support the Euratom safeguards system;- operate the safeguards on-site laboratories and provide in-field operative support for Euratom																
421 - RSFG JRC.G.II.7	674 - PROMO Process monitoring of nuclear facilities	Support to DG ENER (and IAEA) for process monitoring at reprocessing and enrichment plants. This includes: Near Real Time Accountancy (NRTA), technical developments, validation and implementation, integration and improvement of safeguards analysis tools, for instance by making use of load cell data acquired at GCEP. Advanced process monitoring technologies aim at improving current safeguards approaches by a multitude of aspects: - Use of operator data from the plant process control to provide additional insights in the plant operation allowing to enhance the quality of safeguards measurements. - Integration into safeguards measurements of Commercial Off The Shelf technologies, components, sensors etc, and combining these sensors into intelligent networks for safeguards - Development of algorithms and approaches to allow the data treatment of large sets of (process) data to allow the inspector to quickly recognize safeguards relevant information and support proper safeguards conclusions.	JRC.G.II.7 Patrice RICHIR	3.3.d	ENER	JRC	HoU of DG ENER E1 P. Meylemans		IAEA - International Atomic Energy Agency (IAEA)	01/01/2014 31/12/2018	INS-RS					
421 - RSFG JRC.G.II.7	688 - SealSys Sealing Systems for Safeguards	Development of sealing systems requested by DG ENER and IAEA for safeguarding nuclear material. The activity consists in a continuous upgrade of existing ultrasonic sealing systems developed by the Seal & Identification Laboratory (SILab). These equipment are already in use throughout the world especially the JRC Candu Sealing System (JCSS) in Cernavoda (Romania), Darlington (Canada) & Karachi (Pakistan), the sealing system in La Hague (France) and the new Ultrasonic Optical Seal Bolt recently deployed in Ignalina (Lithuania). Soon our ultrasonic seals will be deployed in Argentina on underwater storage of Atucha reactors. In parallel, we develop new sealing & identification equipment for underwater or dry storage applications in particular the Active Optical Loop Seal, a new low cost electronic seals. New prototypes will be manufactured, tested and delivered to our Customers. The Swedish Radiation Safety Authority (SSM) formally requested a feasibility study to assess ultrasonic techniques for identification of the copper canisters for final repositories. A patent has been filed on the identification/authentication of the copper canisters, which would be a huge breakthrough for the Safeguards of future long term repository throughout the world, and in particular firstly in Sweden and Finland.	JRC.G.II.7 Francois LITTMANN	3.3.d	ENER	JRC	Paul MEYLEMANS	DEVCO	IAEA - International Atomic Energy Agency (IAEA)	01/01/2014 31/12/2018	INS-RS	201805	Innovative sealing developments	Outside of Europe, where the DG ENER is not involved, innovative developments on sealing and identification systems could be requested by IAEA through the EC Support Programme 1 or ABACC through the ABACC - Euratom Agreement. Within this task, preliminary designs, prototypes and tests could be done, when deployment is later done if the preliminary stages were successful, equipment will be purchase through a Third Party Work contract.	31/12/2018	Technical systems
												201806	Scientific Publication on Innovative Method to Authenticate Copper Canisters Used for Spent Nuclear Fuel Based on the Ultrasonic Investigation of the Friction Stir Weld	Paper to be submitted to the IEEE Transactions on UFFC (Ultrasonics, Ferroelectrics, and Frequency Control Society), title would be : Innovative Authentication method of copper canisters based on the Ultrasonic analysis of the internal gap partially filled after stir friction welding. It is written in cooperation with the University of Florence, related to the work performed on the identification & authentication of copper canisters (JRC patent submission P-2970).	30/06/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
421 - RSFG JRC.G.II.7	691 - NUVER Nuclear Verification Technologies and Approaches	Research and development on verification technologies and methodologies including image and laser based identification and verification systems for containment and surveillance; video review systems; and augmented and mixed reality systems. Application areas covers the design information verification of nuclear facilities, identification of nuclear containers by unique surface maps, verification of containment and closure welds, 3D surveillance, as well as safeguards video reviews. Activities include the support and training to ENER and IAEA on JRC-developed systems.	JRC.G.II.7 Vitor SEQUEIRA	3.3.d	ENER	JRC	Head of Unit ENER.E.1-P. Meylemans		IAEA - International Atomic Energy Agency (IAEA)	01/01/2014 31/12/2018	INS-RS	201803	Scientific publications on R&D on 3D laser based verification systems	Scientific publications on novel algorithms for 3D data processing.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7824 - ENMMS JRC.G.II.6	734 - IPANS Improvements in Particle Analysis for Nuclear Safeguards	This project provides cutting-edge technology required for environmental sample analysis for nuclear safeguards and non-proliferation, in co-operation with DG ENER and IAEA. The methods used are under constant improvements to enhance the abilities in detecting undeclared nuclear activities and to verify declared activities. The project also handles the enhancement and maintenance of analytical laboratories with their equipment, in particular the Large-Geometry-SIMS laboratory with the aim of this being an international reference laboratory for particle analysis. The Project is linked to other work packages mainly due to the provision of analytical work on samples (80-100 samples/year) from DG-ENER, IAEA, ABACC, KINAC and the nuclear forensic group. Work packages: NUFOR, AnSafe and HPTA & DA Analysis. To characterise these samples a total of 1500-2000 individual isotopic measurements of particles are made.	JRC.G.II.6 Magnus HEDBERG	3.3.d	ENER	JRC	Paul Meylemans (ENER E.1)		- Direction of Military Applications (CEA) - Seibersdorf laboratories - IAEA EEAS - European External Action Service IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency	01/01/2014 31/12/2018	INS-RS	7341	Improving the detection limits, screening methods, instrument control and uncertainties for the analysis of environmental swipe samples.	The main project is a new MMXRF automated swipe screening system that is to be purchased and installed. This system will result in a significantly improved usage of the LG-SIMS instrument as the sample preparation is optimised. A study will compare different substrates and the influence of the primary ion beam intensity and its basic properties to enhance the sensitivity and detection limits in the measurements. For improved stability a surveillance system based on commercially available instruments as well as purpose built system to monitor instrument parameters is also to be implemented. New measurement methods will be tested in comparison with existing methods to optimise and to improve uncertainty in the current measurements. An upgrade of JRC developed software packages for QC and data reduction will also be made.	31/12/2018	Technical systems
												7347	Scientific publications on developments in LG-SIMS analysis	Publications on the developments to improve and develop new methods in particle analysis by LG-SIMS for nuclear safeguards.	30/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7824 - ENMMS JRC.G.II.6	865 - AnSafe Analytical Support to safeguards authorities	A key topic in international Safeguards is the prevention of further spread of nuclear materials that can be used for the production of nuclear weapons. In order to detect undeclared nuclear activities high performance analyses are necessary. In the framework of the EU support programme to the IAEA, and TPW agreements to others (ABBAC, KINAC,...). IParticle and bulk nuclear materials are analysed using 15 different analytical techniques accredited by ISO 17025, closely connected to Work Package DA.	JRC.G.II.6 Evelyn ZULEGER	3.3.d	ENER	n/a	DG ENER E S. Lechner		- Seibersdorf laboratories - IAEA ABACC - Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials EEAS - European External Action Service IAEA - International Atomic Energy Agency	11/03/2014 31/12/2018	CON-TW					
421 - RSFG JRC.G.II.7	998 - EurSite Maintenance NUSEC Equipment and software maintenance at EURATOM sites	The purpose of this administrative arrangement is, as described in the Annex I, to form a frame work contract to purchase some pieces of equipment (spare and new parts), to perform the maintenance (preventive, curative, upgrade or as technical support) of the equipment and software installed/provided by the JRC on EURATOM inspection sites in the EU. Other locations of the services are the DG JRC Ispra site and, potentially Luxembourg for remote maintenance and reporting.	JRC.G.II.7 Patrice RICHIR	3.3.d	ENER	ENER	Head of Unit ENER.E.1-P. Meylemans			16/12/2016 15/12/2018	CON-AA					
421 - RSFG JRC.G.II.7	2980 - E-Seals 2015-2018 Support for sealing activity in La Hague, Cernavoda and Ignalina facilities	The objective is to provide ultrasonic sealing equipment and in-field support to DG ENER, for the inspections in the facilities of La Hague (France), Cernavoda (Romania), and Ignalina (Lithuania).	JRC.G.II.7 Elena STRINGA	3.3.d	ENER	ENER	P. Schwalbach		IAEA - International Atomic Energy Agency (IAEA)	17/03/2015 16/03/2018	CON-AA					
7824 - ENMMS JRC.G.II.6	3539 - METRO Metrological tools for safeguards	Description: The EU has a particular interest in ensuring the highest standards of nuclear safety, security and non proliferation - Euratom Treaty (2012/C 327/01), Council regulation 1314/2013, Council directive 2009/71/EURATOM. This work package supports the EC as guardian of the Treaties in operating an effective regional nuclear safeguard system, implementing inspections, reporting and providing technical and scientific support to its Member States, in close partnership with the International Atomic Energy Agency (IAEA). Verification and detection in safeguarding nuclear material are based on reliable measurement results with appropriate metrological quality control tools as prerequisite. This work package is supporting the holistic nuclear '3S' culture with the provision of certified nuclear reference materials, reference measurements, inter-laboratory comparisons, document standards and training. The deliverables of this work package are provided to the respective DG partners and stakeholders under a stringent quality system in compliance with international guidelines (ISO 17034, ISO 17025, and ISO 17043)	JRC.G.2 Yetunde AREGBE	3.3.d	ENER	JRC	ENER-E.1 (Euratom Safeguards)	GROW	- BRITISH NUCLEAR GROUP SELLAFIELD LT - Seibersdorf laboratories - IAEA - URENCO NEDERLAND BV* AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CETAMA - Commission d'ETablissement des Méthodes d'Analyse du CEA (CETAMA)	01/01/2018 31/12/2018	INS-RS	1	Production of Certified actinide reference material	Certified uranium/plutonium reference materials and certification reports will be provided to DGENER Euratom safeguards on-site laboratories in Sellafield and La Hague, to JNFL-Japan, to the IAEA and to industry	31/12/2018	Reference Material
												2	Scientific publications on CRMs for nuclear safeguards	Publications on the development of new CRMs and reference methods required for method validation in nuclear safeguards	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
7824 - ENMMS JRC.G.II.6	3669 - LIS upgrade LIS upgrade	The purpose of the "LIS upgrade Project" is the modification of the laboratory infrastructure to allow for enhanced nuclear material analysis by chemical and mass spectrometric methods. JRC Karlsruhe will design, manufacture, purchase, install, and test the required equipment.	JRC.G.II.6 Evelyn ZULEGER	3.3.d	ENER	ENER	S. Lechner (ENER E); Paul Meylemans (ENER E.1)		- BRITISH NUCLEAR GROUP SELLAFIELD LT AREVA NP - AREVA NP Main Company IAEA - International Atomic Energy Agency (IAEA)	01/10/2016 31/12/2018	CON-AA						
7824 - ENMMS JRC.G.II.6	5028 - HPTA & DA Analysis_3 HPTA & DA Analysis – Safeguards Analysis for DG ENER of bulk and particle samples	Continuation of the established nuclear analytical support to Euratom Safeguards activities (see previous project 823, 2641 and 3700). Unique analytical capabilities of JRC-ITU requested	JRC.G.II.6 Evelyn ZULEGER	3.3.d	ENER	ENER	S. Lechner DG ENER E		- Seibersdorf laboratories - IAEA IAEA - International Atomic Energy Agency (IAEA) NBL - New Brunswick Laboratory (NBL), US	01/10/2017 31/12/2018	CON-AA						
7824 - ENMMS JRC.G.II.6	5031 - OSL-LSS_3 On-Site Laboratories OSL and LSS & COMPUCEA 2011 / 2018	In 1957, the European Community established under Chapter VII of the Euratom Treaty a nuclear material control system. It assigned to the European Commission the responsibility of satisfying itself that nuclear materials are not diverted from their intended use as declared by the users. These users range from uranium enrichment, fuel fabrication, nuclear power generation and reprocessing plants to holders of small stocks of materials in industry, research or medicine.	JRC.G.II.6 Karin CASTELEYN	3.3.d	ENER	ENER	Paul MEYLEMANS		- BRITISH NUCLEAR GROUP SELLAFIELD LT AREVA NP - AREVA NP Main Company - INTERNATIONAL ATOMIC	01/07/2017 30/06/2018	CON-AA						
421 - RSFG JRC.G.II.7	5122 - ESVR Emulation, Simulation and Virtual Reality	Extensive work has been performed during the last years in modelling gamma spectra generation and processes in AS3ML. The individual activities could be further refined and the next step should be made in the direction of complete virtualization of the setup making use of virtual reality development and display. Technology developed under WPK3 could be used to generate 3D models for integration and use in VR systems. The existing parametrized models provide numerical or graphical output. The parameter space should be extended and the output should be presented in a compatible way with VR systems. Access to commercially available VR development/display systems will be obtained through partnering. The work package aims at better understanding the possibilities and requirements for using VR technology in combination with the models developed so far in the context of AS3ML. In the context radiation transport, the Monte-Carlo code MCNP is frequently used for modelling of radiation interacting with complex geometric setups. Together with the evolution of hardware this work package will analyse the requirements of an implementation of MCNP in a high performance computing environment in order to provide output made available to the VR system.	JRC.G.II.7 GIOVANNI MERCURIO	3.3.d	ENER	JRC	EURATOM training group		IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency	02/01/2017 30/12/2018	INS-RS						
421 - RSFG JRC.G.II.7	5134 - ENERC&S Development, delivery and installation of C&S systems for DG ENER	The purpose of this Administrative Arrangement is to provide DG ENER with JRC sealing reading systems for ultrasonic, Cobra & glass seals and ultrasonic seals, as well as 2D/3D laser equipment for Containment & Surveillance (C&S) in la Hague (France), Cernavoda (Romania) & Ignalina (Lithuania), associated with training and infield assistance.	JRC.G.II.7 Francois LITTMANN	3.3.d	ENER	ENER	Paul MEYLEMANS	DEVCO	IAEA - International Atomic Energy Agency (IAEA)	01/01/2017 31/12/2019	CON-AA	201801	Provision of different types of advanced seals for DG ENER	From a total of 240 UOSB seal to be delivered in Ignalina, second batch of 80 to be delivered in 2018, two types of UOSBs, 40 for EOSS with connectors and 40 for Cobra without connectors. In addition 80 inserts for Constor casks. Batch of 100 ultrasonic seals for La Hague. Delivery of five pre-production reader systems for cobra seals and one reference system for Glass seals.	31/12/2018	Technical systems	
												201802	Delivery and in field assistance to multiple advanced laser systems.	Delivery of two LMCV Systems for Authentication and Integrity check of Dry Storage Containers (DSC) for deployment in Cernavoda (Romania). Installation at La Hague Phoenix corner pond of a Laser Surveillance System – LASSY. Provide help for Physical Inventory Verification (PIV) and Basic Technical Characteristics (BTC) verification support in Sellafield, La Hague, Cernavoda, Pierrelatte or Onkalo on request. About 5 campaigns per year.	31/12/2018	Technical systems	
65 - DANTE JRC.G.II.10	6459 - STCB Safeguards Training and Capacity Building	The workpackage aims at coordinating the different training courses on nuclear safeguards that are provided by JRC mainly on the sites of Ispra and Karlsruhe. Beside the provision of training courses on NDA techniques, tank calibration, containment and surveillance techniques, verification techniques, complementary access for nuclear safeguards for various organisations, in particular DG ENER, IAEA, and JAEA, this workpackage aims at also building capacities on new techniques and methodologies for safeguards through dedicated R&D that will be undertaken. Moreover, the coordination of these training activities is of utmost relevance to avoid fragmentation and duplication of effort among the different JRC Sites. This coordination aims also at harmonisation and standardisation within JRC through the different provided training courses. This concerns the content of the course, the duration, the preparation, the evaluation, the resources, etc. The EURATOM Treaty, dealing with the peaceful use of nuclear energy, in its chapter 7 entitled "Safeguards" sets out rights and obligations of the European Commission, Member States and nuclear operators. In this context, Directorate E (Euratom Safeguards) of DG ENER implements a safeguards system that enables the Commission to discharge itself of the said obligations under the Treaty. The Euratom safeguards system foresees on one side the desk verification of the declarations provided by nuclear operators and/or Member States, on the other the physical verification of the declaration provided through safeguards inspection of the nuclear installations. Finally, the EC fulfill its obligations vis a vis the IAEA and Third States through consolidated reporting and notifications. The information exchanged among the Euratom Safeguards Directorates, the IAEA and other nuclear operators concerns non-destructive assay (NDA) methods and instrumentation used in nuclear safeguards for the characterization of nuclear materials. This includes mass determination of nuclear samples, or the fission constituents of the samples, and determination of isotopic abundances of the nuclear material, solely based on the radiation signatures emitted from the nuclear materials. Gamma-rays, neutron emission and heat make up the bulk of the signatures applied to NDA for safeguards purposes. The purpose of this WPK is to advance the use of NDA methods and instrumentation in the field of nuclear safeguards through specific R&D tasks carried out in the NDA laboratories in Karlsruhe and Ispra, and to assist the safeguards inspector in optimizing technical solutions in practical safeguards implementations. The work consists of experimental research supported by modeling, and the use of well-characterized nuclear and radioactive sealed sources, as well as performing maintenance and repair tasks on in-field equipment, and to advise safeguards authorities on future trends and possibilities for solutions in specific safeguards applications. Spent fuel characterization is a topic of high relevance in safeguards. Experimental investigations of suitable NDA methods are ongoing at Swedish and Finnish spent fuel repositories. One method of high interest to Euratom and IAEA is Passive Gamma Emission Tomography (PGET). Results will be provided in form of JRC technical reports, conference contributions, and scientific publications often in collaboration with research partners. The main clients are ENER and IAEA safeguards authorities, and collaborators include research institutions from EU member states and international partner organisations.	JRC.G.II.7 Kamel ABBAS	3.3.d	JRC	JRC	n/a	ENER	IAEA - International Atomic Energy Agency (IAEA)	01/01/2018 31/12/2019	INS-RS	1805	STCB trainings 2018	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2018 and their organisation (About 14 training courses scheduled).	31/12/2018	Training	
													1905	STCB trainings 2019	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2019 and their organisation (About 14 training courses scheduled).	31/12/2019	Training
244 - CSPI JRC.E.3	6519 - CSNS Cyber-Security For Nuclear Safeguards	The EURATOM Treaty, dealing with the peaceful use of nuclear energy, in its chapter 7 entitled "Safeguards" sets out rights and obligations of the European Commission, Member States and nuclear operators. In this context, Directorate E (Euratom Safeguards) of DG ENER implements a safeguards system that enables the Commission to discharge itself of the said obligations under the Treaty. The Euratom safeguards system foresees on one side the desk verification of the declarations provided by nuclear operators and/or Member States, on the other the physical verification of the declaration provided through safeguards inspection of the nuclear installations. Finally, the EC fulfill its obligations vis a vis the IAEA and Third States through consolidated reporting and notifications. The information exchanged among the Euratom Safeguards Directorates, the IAEA and other nuclear operators concerns non-destructive assay (NDA) methods and instrumentation used in nuclear safeguards for the characterization of nuclear materials. This includes mass determination of nuclear samples, or the fission constituents of the samples, and determination of isotopic abundances of the nuclear material, solely based on the radiation signatures emitted from the nuclear materials. Gamma-rays, neutron emission and heat make up the bulk of the signatures applied to NDA for safeguards purposes. The purpose of this WPK is to advance the use of NDA methods and instrumentation in the field of nuclear safeguards through specific R&D tasks carried out in the NDA laboratories in Karlsruhe and Ispra, and to assist the safeguards inspector in optimizing technical solutions in practical safeguards implementations. The work consists of experimental research supported by modeling, and the use of well-characterized nuclear and radioactive sealed sources, as well as performing maintenance and repair tasks on in-field equipment, and to advise safeguards authorities on future trends and possibilities for solutions in specific safeguards applications. Spent fuel characterization is a topic of high relevance in safeguards. Experimental investigations of suitable NDA methods are ongoing at Swedish and Finnish spent fuel repositories. One method of high interest to Euratom and IAEA is Passive Gamma Emission Tomography (PGET). Results will be provided in form of JRC technical reports, conference contributions, and scientific publications often in collaboration with research partners. The main clients are ENER and IAEA safeguards authorities, and collaborators include research institutions from EU member states and international partner organisations.	JRC.E.3 Igor NAI FOVINO	3.3.d	ENER	ENER	n/a			15/01/2018 30/06/2019	CON-AA						
7824 - ENMMS JRC.G.II.6	6561 - NDA Non Destructive Assay for Nuclear Safeguards	The purpose of this WPK is to advance the use of NDA methods and instrumentation in the field of nuclear safeguards through specific R&D tasks carried out in the NDA laboratories in Karlsruhe and Ispra, and to assist the safeguards inspector in optimizing technical solutions in practical safeguards implementations. The work consists of experimental research supported by modeling, and the use of well-characterized nuclear and radioactive sealed sources, as well as performing maintenance and repair tasks on in-field equipment, and to advise safeguards authorities on future trends and possibilities for solutions in specific safeguards applications. Spent fuel characterization is a topic of high relevance in safeguards. Experimental investigations of suitable NDA methods are ongoing at Swedish and Finnish spent fuel repositories. One method of high interest to Euratom and IAEA is Passive Gamma Emission Tomography (PGET). Results will be provided in form of JRC technical reports, conference contributions, and scientific publications often in collaboration with research partners. The main clients are ENER and IAEA safeguards authorities, and collaborators include research institutions from EU member states and international partner organisations.	JRC.G.II.7 Bent PEDERSEN	3.3.d	ENER	JRC	n/a		IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency NRCN - Nuclear Research Centre Negev, Israel US DoE - US Department of Energy (DOE)	01/01/2018 31/12/2018	INS-RS	1	Development and testing of advanced NDA instrumentation for safeguards inspections	R&D and performance testing of novel instrumentation for NDA with potential to become future safeguards tools. This includes newly developed well-counters such as the BBNCC and the LiZnS counter, acquisition systems for (γ, n) detectors, and R&D on new components such as high performance ADCs, data acquisition electronics in FPGA, miniaturisation of list-mode devices. The task also includes maintenance and infield support to existing Euratom devices such as the Drum Monitor and CNR.	31/12/2018	JRC technical reports	
												2	Improvement of neutron counting techniques for safeguards	Collaborative tasks with US-DOE on investigations of dead-time correction algorithms for neutron multiplicity counting (Action Sheet 60), investigation of the replacement of 252Cf sources in neutron counting applications (Action Sheet 51), and performance testing of fast detector electronics for neutron counters at PUNTA (Action Sheet 59). Also investigations are performed on methods for characterization of spent fuel debris through delayed gamma-ray signatures from neutron induced fission. (MoU JAEA), and development of interpretation models for neutron correlation counting (MoU IAEC-Israel).	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												3	Optimisation and intercomparison of Codes for U and Pu isotopics determination	Testing of software codes for isotopic composition of U and Pu from high resolution gamma spectra to establish recommendations of best practices. JRC has produced and distributed high-quality medium resolution gamma spectra (MRGS) of U and Pu certified reference materials via IAEA to participants of the international U/Pu isotopic codes inter-comparison exercise. The code optimization and benchmarking will eventually benefit inspectors and mobile expert teams (EC-SP task JNT-A-01684).	31/12/2018	Technical systems	
												5	Scientific publications on new developments in nuclear safeguards for non-destructive assay	Publications on the developments to improve and develop new methods in nuclear safeguards.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
7824 - ENMMS JRC.G.II.6	6584 - DA Destructive Assay for Safeguards	DA develops innovative cutting-edge technology, techniques and scientific instruments required for the safeguardability of fuel cycles in close co-operation with authorities (DG ENER, IAEA). The focus is on radiometric, chemical, and mass spectrometric methods with direct application in the Euratom on-site laboratories, for safeguards analytical measurements in general and for support in detection-oriented safeguards training courses. The experience from present fuel cycles serves to develop safeguards concepts and material analysis strategies for alternative fuel cycles. Included is maintaining the analytical capabilities for safeguards (Analytical Service, ISO 17025). The accreditation serves to demonstrate continuously improving of the analytical capabilities, and providing the transparency essential for safeguards credibility. Technical and methodological developments for enhanced efficiency in the OSL/LSS as well as the support to IAEA in the frame of the EC-Support Programme and bilateral co-operation with:	JRC.G.II.6 Evelyn ZULEGER	3.3.d	ENER	JRC	n/a	DEVCO	- Seibersdorf laboratories - IAEA - University of California, Los Alamos National Laboratory CETAMA - Commission d'ETablissement des Méthodes d'Analyse du CEA (CETAMA) France EEAS - European External Action Service IAEA - International Atomic Energy Agency (IAEA)	01/01/2018 31/12/2018	INS-RS	1	Improvement in radiochemistry and spiking for analytical safeguards measurements	The JRC provides support to the IAEA (EC SP task A-01806, X 1969, 2003, EC A 1391). Focus: Validation of large dried spikes for nuclear material verification in reprocessing plants. Also under action sheet 44 and 54 support is provided under the JRC-DOE agreement on nuclear safeguards to guarantee the quality of safeguards measurements as well as improving the measurement capabilities needs for safeguards in the future	31/12/2018	JRC technical reports	
												2	Method developments to improve the On-Site Laboratories (LIS)	After 15 years of operation several measurement devices in the LIS are to be upgraded to be fit for providing high quality safeguards results in a timely manner, such as upgrade Mass spectrometer, foil-heater adaptation, densitometer exchange, improve sample handling in hot cells, HKED hard- and software upgrade, measurement method development example: MCNP modelling of actinide X-ray fluorescence	31/12/2018	Technical systems	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		+CEA/CETAMA on quality assurance in nuclear measurements +CEA/DAM and JAEA on enhanced uranium particle analysis +US DOE Laboratories under the Agreement between Euratom and US-DOE on "Nuclear Material Safeguards and Security R&D" in the fields of U/Pu accountability measurements, method standardisation and enhancement of neutron measurement capability are included. The WPK covers also the institutional part of the IAEA contract EC-SP X 1969 (865) as well as the Institutional part of the AA on DA & HPTA analysis with DG ENER (5028). After 15 years of OS/LSS operation measurement devices are to be upgraded to keep the laboratories fit for providing high quality safeguards results in a timely manner, such as exchange of liquid N2 detectors with electrically							JAEA - Japan Atomic Energy Agency NBL - New Brunswick Laboratory (NBL), US NMCC - Nuclear Material Control Center (NMCC) - Japan ORNL - Oak Ridge National Laboratory US DoE - US Department of Energy			3	Scientific publications on new developments in nuclear safeguards for destructive assay	Publications on the developments to improve and develop new methods in nuclear safeguards	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
3.3.e promote excellence in the nuclear science base for standardisation:- develop an understanding of the fundamental properties and behaviour of innovative nuclear and structural materials for safety assessment and model validation;- provide support for the standardisation and harmonisation of nuclear safety assessment and radiation measurements in the EU and support collaboration with key partner countries and international organisations (IAEA).																
436 - CBRNEsec JRC.A.7	3883 - DISNU Digital standards for nuclear security	This is an EMPIR project with the following objectives: 1. The development of an accepted committee draft IEC standard for a digital list-mode data format to be used in nuclear instrumentation, in which JRC takes the leading role. 2. The development of software tools for users of the standard (=manufacturers of security equipment and developers of software for data analysis), for compliance verification, generation of test data sets, basic analysis and conversion to common spectral formats, by the project partners. The adoption of the IEC standard as European Standard is envisaged after the publication of the global standard. For the legal frame, please see under the heading "Note" below.	JRC.G.2 Jan PAEPEEN	3.3.e	HOME	RTD	Wiktor Wojtas (HOME.D.1)		CENELEC - European Committee for Electrotechnical Standardization (CENELEC) IEC - International Electrotechnical Commission	01/06/2015 15/05/2018	CON-IA	3	Acceptance of Committee draft	Report demonstrating the acceptance of the Committee Draft standard IEC 63047 and the inclusion of the outputs of EMRP JRP ENG08 MetroFission and the pre-normative research by ERNCIP RN TG into the standard. (Deliverable D2 in the EMPIR project).	15/05/2018	JRC technical reports
7448 - SARA JRC.G.2	6346 - PRIMER Primary standardisation and equivalence in radioactivity measurements	The JRC promotes a common terminology and measurement system for radioactivity, as laid down in Article 8 of the Euratom Treaty. The PRIMER WPK embodies this work, which i.e. includes establishment of the SI-unit becquerel on which international equivalence and traceability of ALL radioactivity measurements world-wide are based. Such work requires use of primary methods, i.e. methods that do not require a calibration source but rely on physics to determine activity. Since very few laboratories have such methods the impact of this work is significant. As the reference sources decay (a basic feature of radioactivity) there is an everlasting need for primary reference measurements of radioactivity in society. By performing and contributing to key comparisons JRC supports free trade through the Mutual Recognition Agreement in which the signatory countries ensure acceptance of each other's measurements. The WPK also investigates problems encountered by monitoring laboratories when measuring radioactivity. An important aspect of disseminating information on good practices is through document standards. In short, this work package provides European and other laboratories with tools to convert measured decay rates into SI-traceable activity by means of reference activities of calibration sources, accurate values for half-lives, photon or particle emission probabilities per decay, sound metrological and statistical methodology, reference materials with certified activity, education, training and document standards. The work package focusses on radionuclides of importance to the international community, with inclusion of nuclear safety & security, safeguards, nuclear medicine, radioactive waste management, nuclear decommissioning, and scientific applications heavily depending on nuclear decay. The WPK also provide reference values of radioactivity for other JRC work in e.g. WPkS SELMER and	JRC.G.2 Mikael HULT	3.3.e	ENER	JRC	n/a	HOME JRC RTD SANTE TRADE	- Laboratoire national Henri Becquerel - NPL Management Ltd PTB - Physikalisch-Technische Bundesanstalt BIPM - International Committee on Weights and Measures BIPM CCRI - Consultative Committee for Standards of Ionizing Radiations Comité consultatif pour les étalons de mesure des rayonnements ionisants, CCEMRI CIEMAT - Centro de Investigaciones Energéticas Medioambientales Tecnológicas EURAMET - European Organisation of Metrology (EURAMET) Env Rad Mon EU - Radioactivity Environmental Monitoring National laboratories and institutes ICRM - International Committee for Radionuclide Metrology (ICRM) NEA-OECD - Nuclear Energy	01/01/2018 31/12/2020	INS-RS	1	Scientific articles	Scientific publications on reference measurements of radioactivity, measurements supporting the international reference system for radioactivity and improved decay data. Covering 2018 and 2019.	01/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	Report describing the impact of radioactive reference measurements performed at JRC-Geel.	There is a delay before reference measurements performed using primary standardisation of radioactivity appears in data-bases and as key-comparison reference values. This report summarises the impact of reference measurements of radioactivity performed at JRC-Geel in support of the common measurements system.	15/11/2019	JRC technical reports
												3	Improved technical systems for isotopic signatures	By measuring conversion electrons it is possible to resolve certain interferences encountered when performing alpha-particle spectrometry. The development of this new method has for example the potential of differentiating between the fissile isotope Pu-239 and the non-fissile ones (Pu-238 and Pu-240) important in safeguards work. Furthermore, technical improvements in alpha-particle spectrometry linked to this will be pursued and capacity building in member state laboratories pursued by enabling technology transfer of JRC developments.	15/12/2018	Technical systems
7448 - SARA JRC.G.2	6347 - HUMOR HADES underground measurements of radioactivity	Low-level measurements is a growing field as such measurement can underpin many science fields. This is highlighted by the huge number of projects performed in the underground laboratory HADES in the past years. By measuring mBq levels of radioactivity one can trace processes in nature and industry that previously were not possible to study. Furthermore, by reducing the background in radiological methods to insignificant levels one obtains results that are more robust and will therefore have high impact when e.g. characterising reference materials with matrices of samples from the environment. It is essential to understand that measurements of low-levels of radioactivity are quite different from measuring higher levels. The new Basic Safety Standards and the Euratom Drinking Water Directive specify levels for radionuclides that in some cases are very low. A key feature of this work will be to develop and conduct training of practitioners to properly design new measurements systems and measurement procedures following the state-of-the-art for low-level techniques. Another important aspect linked to that is capacity building by technology transfer to emerging underground laboratories and to propose suitable science applications to them using appropriate agreements and collaborations. Although environmental radioactivity is a key focus for this work package, it will also deal with measuring mBq levels of activity in materials used for calibrating equipment used in nuclear decommissioning and radioactive waste management, for example to demonstrate the homogeneity of the reference materials. The WPK is closely linked to the major research infrastructure HADES.	JRC.G.2 Mikael HULT	3.3.e	ENER	JRC	n/a	ENV RTD	- Seibersdorf laboratories - IAEA EURAMET - European Organisation of Metrology (EURAMET) IAEA-MEL - Marine Environment Laboratory of IAEA ICRM - International Committee for Radionuclide Metrology (ICRM) IPCC - Intergovernmental Panel on Climate Change NMIs - National Metrology Institutes	01/01/2018 31/12/2020	INS-RS	1	Articles on science applications of low-level radioactivity measurements	Scientific publications or conference contributions related to development of low-level radioactivity techniques and their science applications. Covering the years 2018-2019.	15/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												2	Low-level radioactivity measurements in JRC and in the EU	A summary report that gives an overview of developments and activities performed at JRC-Geel in low-level radioactivity measurements and science applications. The report will also describe the impact on measurements of radioactivity in EU and world-wide and suggest future actions by laboratories and network of laboratories measuring low-levels of environmental radioactivity.	16/12/2018	JRC technical reports
												3	High level event on Low-level radioactivity measurements	Together with IAEA, JRC will organise at the end of 2018 a high level event on low-level radioactivity science applications and their impact will be organised. It should results in a policy document and scientific proceedings. As the planning is just started (IAEA is now applying to secure funding) it is difficult to say whether the scientific proceedings or the policy report should be defined as the output in JPB, so for the moment we have a technical report as placeholder. This will be updated as soon as IAEA and JRC have agreed on the formal output.	01/10/2018	JRC technical reports
7446 - ANDANTE JRC.G.2	6367 - NXS Reference neutron cross section experiments for nuclear energy applications	WPk1 focusses on the production of high quality neutron cross section data that are essential for a safe operation of nuclear power plants, the development of innovative systems, criticality safety programs, spent fuel storage and final disposal and nuclear waste management. They are primarily produced at the GELINA and MONNET facilities. Specific tasks: - Perform cross section measurements of importance for nuclear criticality safety programs (burn-up credits). This involves (n,tot), (n,g), (n,n) and (n,n,g) measurements on Ag, Ce, Fe, Gd, Rh, Zr and Y. - Perform measurements to improve the U-235(n,g) cross section in the resonance region. This involves the development of a U-235 fission chamber and complementary measurements at the BR1 facility. - Study the impact of the Doppler effect by transmission measurements at high sample temperatures at GELINA. - Perform cross section measurements for sodium-cooled and molten salt reactor development: (n,n) and (n,n,g) measurements on Al, F, Mg, N. - Perform (n,tot), (n,g), (n,n) and (n,n,g) cross section measurements to improve the data that are relevant for the use of Pb-Bi as target material in accelerator driven systems and/or coolant material in fast reactor systems.	JRC.G.2 JAN HEYSE	3.3.e	RTD	JRC	n/a	ENER	- Nuclear Research Institute Rez CERN - European Organization for Nuclear Research INFN - ISTITUTO NAZIONALE DI FISICA NUCLEARE CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CNRS - Centre National de la Recherche Scientifique ENEA - Agenzia Nazionale per le Nuove Tecnologie, L'energia e lo Sviluppo Economico Sostenibile IAEA - International Atomic Energy Agency (IAEA) IFIN-HH - Horia Hulubei National Institute of Physics and Nuclear Engineering IRSN - Institute de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency KAERI - Korea Atomic Energy Research Institute	08/01/2018 27/12/2019	INS-RS	1	Final results of cross section measurements in support to criticality safety	The report summarises the experimental activities in support to criticality safety programmes. It describes new cross section data that are delivered to the EXFOR data library in reply to the High Priority Request List (HPRL) of the OECD/Nuclear Energy Agency. The details of each cross section data set, which are required to include them in an evaluation project, are provided following the recommendations defined by the nuclear data section of the IAEA.	15/11/2018	JRC technical reports
												2	Results of high temperature transmission measurements at GELINA	A scientific article describing a new experimental set-up at GELINA to study the Doppler broadening effect by high temperature transmission measurements. It also includes final results of high temperature transmission measurements on W-samples	01/07/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												3	Final results of cross section measurements in support to the safety of current reactor systems and to the development of innovative systems	The report summarises the experimental activities in support to the safety of current reactor systems and the development of innovative systems. It describes new cross section data that are delivered to the EXFOR data library in reply to the High Priority Request List (HPRL) of the OECD/Nuclear Energy Agency. The details of each cross section data set, which are required to include them in an evaluation project, are provided following the recommendations defined by the IAEA/Nuclear Data Section.	15/11/2019	JRC technical reports
7446 - ANDANTE JRC.G.2	6411 - STANDARDS Measurements and methodologies for nuclear data standards	Nuclear data standards are the basis for accurate nuclear measurements throughout the field of nuclear technology applications. Almost all reaction cross sections in evaluated data libraries are relative to a select number of neutron cross section standards. This work package contributes to improved nuclear data standards by developing standard measurement techniques and standard radiation fields, by providing new experimental data using the JRC Geel accelerator-based facilities GELINA and MONNET and by improving methodologies to derive neutron cross section standards. Specific tasks -Improve the U-235(n,f) and U-238(n,f) cross section standards by new measurements at the GELINA and MONNET facility combined with new measurements at the n_TOF facility at CERN. -Improve the standards for prompt fission neutron spectra (PFNS) by new measurements for U-235(n,f) and Cf-252(sf). -Create standard neutron and gamma-ray fields using the MONNET facility. -Develop a fast neutron detector for experiments at the VENUS-F fast neutron facility at SCK-CEN. -Develop a methodology to better account for the impact of correlated data sets obtained at different laboratories on the derived standard. The method will be tested by adding new high accuracy GELINA data.	JRC.G.2 Stephan OBERSTEDT	3.3.e	ENER	JRC	n/a	RTD	CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency KAERI - Korea Atomic Energy Research Institute NEA-OECD - Nuclear Energy Agency (OECD) US DoE - US Department of Energy (DOE) ENEA - Agenzia Nazionale per le	08/01/2018 27/12/2019	INS-RS	1	An improved methodology to produce standards for neutron induced	A method to produce cross section standards from a least squares adjustment to experimental data accounting for correlated data sets obtained at different laboratories will be developed and validated. The method will be illustrated using data for Au-197(n,g), including recent data obtained at GELINA.	01/05/2019	Validated methods, Reference methods and measurements
												2	Report describing the reference neutron fields at the MONNET facility	This report describes the reference neutron fields that are available at the MONNET facility. It includes the results of a full characterisation using standard reference methods.	01/08/2019	Technical systems
												3	Scientific articles	Scientific publications and conference contributions related to the production of neutron standards during the period 2018 - 2019.	15/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
		This workpackage aims at providing support to internationally recognised evaluated nuclear data libraries. More in particular recommendations will be given to validate and improve the quality of the JEFF library which is maintained by the OECD/NEA as a service to EU-member states. This input can also be used by other evaluation projects, i.e. ENDF (United States), JENDL (Japan), CENDL (China) and ROSFOND/BROND (Russia), through our participation in WPEC (Working Party on International Nuclear Data Co-operation) activities which are co-ordinated by the OECD/NEA. Specific tasks						CERN - European Organization for Nuclear Research INFN - ISTITUTO NAZIONALE DI FISICA NUCLEARE CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives ENEA - Agenzia Nazionale per le			1	Summary report of validated nuclear data in support to the JEFF-nuclear data project.	A report that describes the present status of the nuclear data libraries for fission products (i.e. Rh-103, Ag-107 and Ag-109) and that provides validated data for these nuclides to improve the JEFF nuclear data library. The present status of the libraries is verified by results of integral measurements at GELINA and the recommendations are based on a combined analysis of integral data and microscopic cross section data available in the EXFOR library (including new GELINA data). At GELINA and the recommendations are based on a combined analysis of integral data and microscopic cross section data available in the EXFOR library.	30/10/2018	JRC technical reports	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7446 - ANDANTE JRC.G.2	6412 - EVALUATION Improvement and validation of evaluated nuclear data libraries	-Provide recommendations to JEFF to improve evaluated data of interest for criticality safety programs. -Analyse existing covariance data and assess their quality based on available high quality experimental data. -Perform thick sample transmission measurements to validate the quality of the nuclear data files in JEFF. -Perform transmission measurements at GELINA on pellets to validate nuclear data libraries for 99Tc, 103Rh, 237Np and 241Am. The results of these measurements complement oscillation experiments carried out at the MINERVE reactor operated by CEA Cadarache. -Perform integral benchmark measurements using a fission-like neutron source at GELINA or MONNET to validate evaluated data files for 238U. -Provide recommendations for neutron induced reaction cross sections relevant for the design and safety analysis of MYRRHA.	JRC.G.2 Stefan KOPECKY	3.3.e	ENER	JRC	n/a	RTD	Nuove Tecnologie L'energia e lo Sviluppo Economico Sostenibile IAEA - International Atomic Energy Agency (IAEA) IFIN-HH - Horia Hulubei National Institute of Physics and Nuclear Engineering IRSN - Institut de Radioprotection et Sûreté Nucléaire JAEA - Japan Atomic Energy Agency KAERI - Korea Atomic Energy Research Institute NEA-OECD - Nuclear Energy Agency (OECD)	08/01/2018 28/12/2019	INS-RS	2	Summary report of validated nuclear data in support to the JEFF-nuclear data project.	A report that describes the present status of the nuclear data libraries for actinides (i.e. U-235, U-238 and Am-241) and that provides validated data for these nuclides to improve the JEFF nuclear data library. The present status of the libraries is verified by results of integral measurements at GELINA and the recommendations are based on a combined analysis of integral data and microscopic cross section data available in the EXFOR library (including new GELINA data).	30/10/2019	JRC technical reports
												3	Scientific articles	Scientific publications and conference contributions related to the production of validated nuclear data during the period 2018 – 2019.	16/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7446 - ANDANTE JRC.G.2	6413 - TARGET Production of targets for nuclear data measurements	This work package supports nuclear data measurements of importance for nuclear reactor safety and for technologies dealing with long-lived nuclear waste with the provision and development of well-characterised nuclear targets. Most of the targets are produced and characterised for measurements carried out by JRC staff at the GELINA and MONNET facility. The work package also provides targets on request for users outside the JRC through the transnational access activity to the JRC facilities (WPK7, EUFRAT), through collaboration agreements, such as the n_TOF collaboration at CERN, and in contribution to European projects such as CHANDA.	JRC.G.2 Yetunde AREGBE	3.3.e	ENER	JRC	n/a	EAC GROW RTD	- Department of Radiation Science (Uppsala University) - JOHANNES GUTENBERG UNIVERSITÄT MAINZ CERN - European Organization for Nuclear Research PTB - Physikalisch-Technische Bundesanstalt CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CERCA/AREVA - CERCA/AREVA - France CIEMAT - Centro de Investigaciones Energeticas	08/01/2018 28/12/2019	INS-RS	1	Well-characterised active and non-active targets	Material information sheets of a number of well-characterised targets for accurate nuclear data measurements at the JRC GELINA and MONNET facilities, at external acceleration sites under respective CAs and via transnational access requests.	01/12/2018	Reference Material
												2	Well-characterised active and non-active targets	Material information sheets of a number of well-characterised targets for accurate nuclear data measurements at the JRC GELINA and MONNET facilities, at external acceleration sites under respective CAs and via transnational access requests.	01/12/2019	Reference Material
												3	Scientific articles	Scientific publications and conference contributions on preparation and/or characterisation of thin targets for high accuracy nuclear data studies during the period 2018 – 2019.	15/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7448 - SARA JRC.G.2	6414 - NuDIT Nuclear Data for Innovative Technologies	The work package includes three tasks. 1) To measure energy and half-life of the Th-229 nuclear isomer. Th-229 is the only nuclide for which the first excited isomeric state is predicted to be accessible by optical laser excitation. If this is confirmed by experiment, Th-229m could be used for the realization of an overwhelmingly precise optical nuclear clock that, in turn, could find applications in a number of fields, from geodesy to the observation of dark matter, from the detection of gravitational waves to the realization of qubits for quantum computing. The first step in such an investigation is the determination of energy and lifetime of the Th-229 isomer. Aim of the work package is to obtain such information by performing microcalorimetric measurements below 0.1 K on a hetero-structure formed by a thin layer of U-233 deposited on a silicon layer. The determination of the required quantities will be based on measurements of the energy deposited into the micro-calorimeter by the decay product of U-233 and by the decay photon of the Th-229m isomeric state. 2) Provision of a well characterised neutron reference standard based on the neutron output from Cm-244. Such a neutron reference standard will be used for accurate calibration of neutron counters and for cross-certification of other neutron sources. In the first phase the work involves the development	JRC.G.I.5 Rikard MALMBECK	3.3.e	ENER	JRC	n/a	JRC	INFN - ISTITUTO NAZIONALE DI FISICA NUCLEARE IAEA - International Atomic Energy Agency (IAEA)	01/01/2018 31/12/2019	INS-RS	1	Karlsruhe Nuclide Chart	This is the new and updated 10th edition of the Karlsruhe nuclide chart	31/03/2018	Scientific information systems and databases
												2	Characterisation of 244Cm solution to be used as a neutron standard	Scientific publications describing the methods used for isolation and purification of 244Cm as well as its characterisation for use as a neutron standards	20/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7448 - SARA JRC.G.2	6507 - SySTA Surface Systems Studies for Technological Applications	SySTA studies the surface processes on radioactive systems, intervening in important technological applications (nuclear and non-nuclear): fuel handling, nuclear decommissioning and environmental remediation, hydrogen production and hydrogen storage. We provide a specialized laboratory to synthesize those systems at a nano-scale and to study their properties and applications. This laboratory is unique in Europe and is used by member state users to carry out this research in collaboration with us. The work is done in one single instrument (the labstation), where the test systems are synthesised, subjected to reaction conditions (e.g. hydrogen adsorption, water splitting by light) and analysed by surface spectroscopies. Synthesis methods are very flexible, allowing producing classical oxide fuel as thin films, but also advanced fuel types are synthesized (carbides, nitrides). Photoactive materials for hydrogen production are mainly based on Ce oxides modified e.g. by uranium. Interactions with the environment, surface-bulk interdiffusion are studied using specific surface analyses techniques. The stability or alteration of surface exposed to various gases present in the environment are monitored on-line. Reference samples (e.g. single crystals) will be prepared and analysed, to be compared with the results obtained on thin films having similar composition and also to supply them to universities and research institutes, as support to member states. Knowledge transfer of spectroscopic data will be performed to support theoretical modelling needed for unravelling the mechanisms of the surface reactions. A series of collaborations with member state laboratories have been established for that purpose. The modular setup of the instrument can be adjusted to the user's needs (e.g. reaction conditions). Being a unique installation, the lab station is made available within PAMEC laboratory in open access to member states scientists and organization as a user instrument. Many and close collaborations take place with work packages within the nuclear safety department, SARA project, REDECAM project (MASSA, SAFEST), within nuclear decommissioning department, SPEND project, and with G2 unit. Within this WP, we will also explore the potential of novel spectroscopy techniques exploiting	JRC.G.I.5 Thomas GOUDER	3.3.e	JRC	JRC	n/a	EAC	- SKB INTERNATIONAL CONSULTANTS AKTIEBOLAG - BenGurion University of the Negev - UNIVERSITY OF SHEFFIELD - Delft University of Technology - University of Stockholm - COMMISSARIAT A L ENERGIE ATOMIQUE CEN SACLA CU - Charles University Prague INFN - ISTITUTO NAZIONALE DI FISICA NUCLEARE CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives ECP - Ecole Centrale de Paris IAEC - Israel Atomic Energy Commission	01/01/2018 31/12/2019	INS-RS	1	Development of Surface Science Lab Station	The surface science lab station will be finalized and advertised to the scientific community in the EU as open access instrumentation. Outreach reports will be produced and published as technical report, summarizing the output of the surface science laboratory from collaboration and services for external users. They will describe the spectroscopy derived data analyses obtained on samples made in-house, or provided by external users. Second, they will focus on sample synthesis, comprising radioactive and non-radioactive materials. The samples are used as reference materials for stakeholders (European academic and research organizations) and as support to member states. Third, they will describe the latest developments in novel experimental techniques for the characterization of nuclear materials, performed in our laboratory in response to external demands and collaborations.	15/11/2018	Technical systems
												2	Scientific articles	Scientific publications on nuclear fuel and energy conversion materials, focusing on surface electronic structure and reactivity, interactions of nuclear systems with the environment.	30/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												3	Scientific articles	Scientific publication on the role of model surfaces in nuclear safety related research. It will be produced in the frame of workshop, organized in house and focussing on the surface electronic structure, reactivity, and interactions of nuclear systems with the environment. The publication will report the results of the workshop and be dedicated to the optimization of experimental data production for theoretical modellers.	25/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
3.3.f development of knowledge management, training and education:- monitor EU trends in human resources in the nuclear energy field and facilitate their mobility throughout the EU;- develop tools for knowledge management and transparency and the dissemination of information;- preserve, aggregate and disseminate specific scientific and technical knowledge on radiation and nuclear safety, safeguards and security by providing operational support and																
65 - DANTE JRC.G.10	504 - EUFRAT Serving EU and international partner needs through transnational access to JRC facilities	This work package co-ordinates open access to EURATOM specialised nuclear facilities of pan-European relevance located at JRC Geel: -Accelerator based neutron sources: the neutron time-of-flight facility GELINA and the MONNET mono-energetic neutron fields laboratory. -Radionuclide metrology laboratories: a cluster of instruments for accurate radioactivity measurements and the HADES low-level gamma underground laboratory. -Nuclear reference materials laboratories for the preparation and provision of certified nuclear reference materials and reference measurements and targets for nuclear measurements. EUFRAT (European facilities for nuclear reaction and decay data measurements) is a pilot JRC Open Access program – offering opportunities to parties from Member States and partners of the European Union's EURATOM program. It provides quality-based access as defined in the ESFRI Charter on Open Access to Research Infrastructure. Proposals for short-term experiments and preparations of targets, submitted to an open call, are evaluated two times per year by peer review of a panel of international experts representing the stakeholder community (EUFRAT Program Advisory Committee).	JRC.G.2 Peter SCHILLEBEECKX	3.3.f	RTD	JRC	DG ENER D2 Nuclear Energy technology, Nuclear waste and Decommissioning		JAEA - Japan Atomic Energy Agency MS EU - Member states EU US DoE - US Department of Energy (DOE)	01/01/2014 30/12/2020	INS-RS	2001	Final report and conclusion of pilot project Open access	This summary report under Horizon 2020 will include the feedback experience, lessons learned and future roadmap of the Open Access pilot project, including the second user workshop organised in the fall of 2020	30/12/2020	Science-for-policy reports
65 - DANTE JRC.G.10	550 - ET-SN3S Education and training in nuclear data measurements, instrumentation and analysis techniques for nuclear safety safeguards and security	This work package focusses on education and training (E&T) activities related to nuclear data measurements and their associated applications, related instrumentation and analysis techniques. In doing so, this work package contributes to competence development in the areas of nuclear safety, safeguards and security. The presence of the accelerator facilities GELINA and MONNET and the different laboratories for radioactivity measurements, target preparation and mass spectrometry at JRC Geel, allows offering a combination of hands-on experience under realistic conditions and classroom training by experts in the field of nuclear data, radioactivity and mass spectrometry measurements. The E&T activities will be tailored to the audience, reaching out to master and PhD students, (young) professionals and even the general public.	JRC.G.2 JAN HEYSE	3.3.f	RTD	JRC	DG ENER D2 M. Boella (HoU) Nuclear Energy technology, Nuclear waste and Decommissioning	ENER HOME	CERN - European Organization for Nuclear Research CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CEN - European Committee for Standardization CENELEC - European Committee for Electrotechnical Standardization (CENELEC)	01/01/2014 30/12/2020	INS-RS	1811	Trainings in Nuclear Safety and Science Applications	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2018 and their organisation.	31/12/2018	Training

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
7785 - MEDAKNOW JRC.G.II.7	685 - ESARDA ESARDA Operation and Secretariat	Operation and Secretariat of the European Safeguards Research and Development Association, ESARDA. This includes management of Steering Committee and Executive Board's meetings organisation, reporting, networking with members and other organisations; maintenance and development of communication platforms; archiving and library, editing and publication of the ESARDA Bulletin; Annual meetings programme management and publication of proceedings; interaction with WGs and general follow-up of the association's evolution and strategy. The WP liaises with the organisation of ESARDA course.	JRC.G.II.7 Filippo SEVINI	3.3.f	ENER	JRC	P. Meylemans (ENER.E.1)		- Nuclear Research Institute Rez - URENCO NEDERLAND BV* - Hungarian Atomic Energy Authority AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives ENEA - Agenzia Nazionale per le Nuove Tecnologie, L'energia e lo Sviluppo Economico Sostenibile ESARDA - European Safeguards R&D Association FZJ - Forschungszentrum Jülich IAEA - International Atomic Energy Agency (IAEA) IRSN - Institut de Radioprotection et Sûreté Nucléaire NRG - Nuclear Research and consultancy Group, NRG SCK-CEN - Belgian Nuclear Research Centre (SCK-CEN) SNL - Sandia National Laboratories STUK - Radiation and Nuclear Safety Authority UKNNL - National Nuclear Laboratories of the UK	01/01/2014 31/12/2018	INS-RS						
65 - DANTE JRC.G.10	3340 - EHRO-N European Human Resources Observatory for the Nuclear Energy Sector	EHRO-N aims at determining the situation of nuclear-educated Human Resources in Europe, assess the trends and suggest policy options for improvement. It is complemented with an analysis of training & education opportunities in view of preserving and further developing expertise in the nuclear fields. It is a central point for data collection and trend analyses to identify patterns for intra-sectorial mobility, training and education opportunities, identify gaps between competences and skills required among different sectors, evaluate the possible scarcity of resources and bottlenecks in knowledge sharing and knowledge management related to nuclear Human Resources and Nuclear Safety and security expertise in the EU. In this context, the implementation of the ECNET system in the nuclear energy sector plays an important role to achieve results. JRC operates the EHRO-N Steering Board (Community of Practices). The objective are realized through the co-operation between universities, research organisations, regulatory bodies, the industry and any other organisations involved in the application of nuclear science and ionising radiation, as well as established collaboration with the European Nuclear Education Network, ENEN.	JRC.G.10 Birgit CHRISTIANSEN	3.3.f	ENER	JRC	niina palomaki	EAC EMPL NEAR RTD	ENEN - European Nuclear Engineering Network IAEA - International Atomic Energy Agency (IAEA) MS EU - Member states EU NEA-OECD - Nuclear Energy Agency (OECD) Nuc Ind - Nuclear Industry	01/01/2016 30/12/2020	INS-RS	1801	3rd EHRO-N survey report	The report will compare results with the previous two surveys and assess trends; it will also be complemented by gender composition of nuclear workforce and include decommissioning activities. On the education side, the focus will be on comparing results with previous two surveys, dimension of exchange students in universities, gender composition of students and graduates.	31/10/2018	Science-for-policy reports	
												1802	ECVET qualification report	Final report on qualification for decommissioning and for the whole NPP cycle.	30/06/2018	JRC technical reports	
												1803	Scientific outputs	Scientific publication(s) in the field of the WPK	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												1901	Report on E&T in the nuclear energy field in the EU	Contribution to the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL ON SITUATION REPORT ON EDUCATION AND TRAINING IN THE NUCLEAR ENERGY FIELD IN THE EUROPEAN UNION. (date to be confirmed with DG ENER)	30/06/2019	JRC contributions to policy documents	
												1902	Scientific outputs	Scientific publication(s) in the field of the WPK	30/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
65 - DANTE JRC.G.10	4970 - ELINDER European Learning Initiatives for Nuclear Decommissioning and Environmental Remediation	Nuclear decommissioning encompasses all technical and management actions associated with ceasing operation of a nuclear installation and its subsequent dismantling to remove it from regulatory control, including the environmental remediation of the site. Nuclear decommissioning is an industrial reality and significant growth is expected. The availability of motivated, qualified and experienced personnel to support nuclear decommissioning is probably one of the most critical issues to address. To address these pressing challenges, «ELINDER» (European Learning Initiatives for Nuclear Decommissioning and Environmental Remediation) pools and enhances already existing learning programmes of some of the leading institutions within Europe with experience and expertise in nuclear decommissioning.	JRC.A.7 Pierre KOCKEROLS	3.3.f	ENER	JRC	RTD D.G.4	RTD	- University of Birmingham - SOCIETA' GESTIONE IMPIANTI NUCLEARIPER AZIONI - SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA - University of Tartu CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives	01/02/2017 31/12/2020	INS-RS	1904	ELINDER Training courses-2018	Coherent set of generic and specific courses (programme, teachers, expected audience, expected learning outcomes and certification) and their organisation (e.g. Waste Management Summer School, etc.).	31/03/2019	Training	
65 - DANTE JRC.G.10	5262 - ENEN+ European Nuclear Education Network Plus-Attract and Develop New Nuclear Talents	The primary motivation of the ENEN+ H2020 project is to contribute substantially to the revival of the interest of young generations in the careers in nuclear sector. This is to be achieved by pursuing the following main objectives: Attract new talents to careers in nuclear; Develop the attracted talents within and beyond academic curricula; Increase the retention of attracted talents; Involve the nuclear stakeholders within EU and beyond and Sustain the revived interest for nuclear careers. The ENEN+ consortium will focus on the learners and careers in the nuclear engineering and reactor safety, geological disposal, radiation protection and medical physics. Integration of further nuclear disciplines (e.g., nuclear chemistry, decommissioning, fusion engineering ...) and sustainability of the ENEN+ accomplishments beyond the project life of is foreseen within the existing ENEN Association. The overall H2020 projects is organised in 7 work packages. JRC is more particularly involved in:	JRC.G.10 Birgit CHRISTIANSEN	3.3.f	RTD	RTD	Roger GARBIL	EAC	ENEN - European Nuclear Engineering Network	30/11/2017 30/11/2021	CON-IA	1804	Projections of workforce needs	The report will address the projection for future workforce needs in terms of the most required occupations or qualifications within the nuclear sector (three phases of the NPP life cycle (New build; Operation and Decommissioning) and in medical applications).	31/10/2018	JRC technical reports	
												1903	Vocational training schemes and accreditation in nuclear fission	Report on existing vocational European Fission Training Schemes and their accreditation	30/06/2019	JRC technical reports	
268 - K-NUSP JRC.G.10	5263 - NOWMAD Nuclear Knowledge Management and Dissemination	The Work Package aims at managing and disseminating knowledge generated by the scientific units of Directorate G by mapping, collating, analysing, quality checking and communicating in a systematic and digestible way relevant scientific data, methods, tools and to monitor knowledge available worldwide. It includes internal and external briefings, inter-service consultations, and outreach and dissemination activities cross-cutting the various projects led by the Directorate. Particular attention is given to horizon scanning, anticipating knowledge needs, mapping knowledge gaps and suggesting emerging research topics to be considered for the JRC work programme. It bridges and seeks synergies with the activities carried out in Directorate H and other KM units in the JRC.	JRC.G.10 KAISA SIMOLA	3.3.f	JRC	JRC	n/a	DEVCO EAC ENER RTD	ETSON - European Technical Safety Organisation Network IAEA - International Atomic Energy Agency (IAEA) NEA-OECD - Nuclear Energy Agency (OECD)	01/01/2017 01/01/2021	INS-RS	1801	Horizon scanning 2018	Horizon scanning report to identify, discuss and communicate to relevant policy makers potential emerging issues in the nuclear field that might have policy and societal implications for Europe.	20/12/2018	Science-for-policy reports	
												1802	Gap analysis on nuclear fuel safety	Produce a gap analysis on JRC activities in nuclear fuel safety. The gap analysis maps the JRC knowledge and activities in the selected topic, and reflects it to the main research and development activities in this domain in Europe and worldwide. The gap analysis aims at serving as background material for decision making in future orientations of JRC in the specific domain.	01/10/2018	JRC technical reports	
												1803	Briefing / review report on nuclear emerging issue	Briefing note or review report on the status of knowledge and gaps related to an emerging issue of strong policy concern. Topic to be identified in the horizon scanning exercise or during the European Topical Peer Review required under the nuclear safety directive.	31/10/2018	Science-for-policy reports	
												1804	Scientific publications and outreach activity 2018	Scientific publication(s) in the field of the WPK	30/11/2018	Books and monographs with JRC editorship	
												1901	Analysis of JRC-MSs work programmes 2019+	Collect and analyse relevant information concerning Horizon 2020 and Member States' programmes and their outputs and impacts in nuclear safety and security. A workshop will be organised with all MS partners, where each part can present its R&D Programme. The JRC will present a draft of its programme, for 2020+, this will help a lot to clearly define the complementarities and alignments of the JRC Programme with MSs.	30/06/2019	Science-for-policy reports	
												1902	Pilot Database/Webportal of JRC nuclear Knowledge	The aim is to develop a system (database) to be integrated on a web portal gathering all information on JRC nuclear activities and containing the links to existing ad hoc websites. It is primarily designed for JRC internal use, but following further development and assessment could be shared with relevant customer DGs. Interconnectivity with IAEA's Power Reactor Information System (PRIS) will be investigated.	31/10/2019	Scientific information systems and databases	
												1903	Scientific publications and outreach activity 2019	Scientific publication(s) in the field of the WPK	30/11/2019	Article contribution to a monograph or other periodicals	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7303 - MAWADEK JRC.G.III.8	6121 - IKMS Integrated Knowledge Management System	A system is being established for integrating Knowledge Management with Strategic Studies, Guidance and Knowledge Transfer activities. It was originally driven by the needs of the Radioactive Waste Management and Disposal Joint Programming. The application is broadened in order to include also Decommissioning and Remediation, driven by the Indirect Action projects INSIDER, DISARM and ITSP. Additional Strategic Studies are foreseen in the IKMS pilot phase, prior to commencement of RWM&D-JP in 2019. The individual activities can be summarized as: Up-Front: •Developing the overall concept in the form of Deliverable 3.6 within the CSA JOPRAD, •Opening it up for Decommissioning and Remediation through the INSIDER project. In 2018: •Establishing a Steering Committee in order to take principle decisions concerning, for example the structure of the Knowledge Handbook (organically growing with the implementation of different projects and project activities, or having a pre-defined structure where the activities feeding the IKMS are adopted to it); the detailed approach to addressing activity chairs and experts for the different activities, in particular for Strategic Studies, Guides and State-of-Knowledge documents beyond the implementation of R&D projects. •Establishing the WEB platform for managing the IKMS, including decisions with the Steering Committee on actual content structure and access to different areas of information, as well as for Access to the Research Infrastructures of the JRC will foster innovative research and development, dissemination of knowledge, improve related methods and skills, training and foster collaboration at European level. Moreover, it will promote interaction with a wide range of social and economic actors, including industry and public services, in order to maximise the return on the investment of the unique Research Infrastructures of the JRC in terms of the scarce experimental facilities and resources available in Europe. OASIS is a JRC Open Access program – offering opportunities to parties from Member States and partners of the European Union's EURATOM program. It provides quality-based access as defined in the ESFRI Charter on Open Access to Research Infrastructure. Proposals for short-term experiments and preparations of materials, submitted to an open call, are evaluated two times per year by peer review of a panel of international experts representing the stakeholder community (OASIS Program Advisory Committee - OPAC). Operational support is provided by JRC staff to approved proposals. Proposals of interest to the JRC institutional tasks are evaluated for their potential for collaboration.	JRC.G.III.8 GUNNAR BUCKAU	3.3.f	JRC	JRC	n/a	ENER RTD	MS EU - Member states EU	01/01/2018 31/12/2019	INS-RS	0	Establishing the "Integrated Knowledge Management System (IKMS)"	Final report on how the Integrated Knowledge Management System has been developed, establishing the web based management site, implementation of pilot phase activities, application to other areas than radioactive waste management, and its status end of 2018 prior to its full implementation under Radioactive Waste Management and Disposal Joint Programming.	31/12/2018	JRC technical reports
												2	Integrated Knowledge Management System (IKMS)	Administrative framework with WEB platform for managing the IKMS and communicating to the involved experts and a broader interested community. The WEB based system hosts the different IKMS components, i.e. the Knowledge Handbook, the Strategic Studies, the Guides and Knowledge Transfer activities and outcome. It is designed as to maintain and up-date IKMS content and to communicate the overall status and evolution with time.	31/12/2018	Scientific information systems and databases
65 - DANTE JRC.G.10	6415 - OASIS Open Access to JRC Infrastructure for nuclear Safety and Security Research	The present workpackage aims at coordinating the different training courses on nuclear safety, radioactivity environmental monitoring, radiation protection that are provided by JRC mainly on the sites of Petten, Ispra, Geel and Karlsruhe. Beside the provision of training courses on applications, methodologies and tools developed by JRC, this workpackage aims at complementing its building capacities through collaborations and agreements with external competent organisations or pool of experts. The latter addressing trainings and education needs complementary to or which are not yet available through other networks or EU initiatives. Synergies with E&T carried out outside the EU (e.g. IAEA, DG DEVCO programmes) should also be sought for. Indeed, the coordination of these training activities is of utmost relevance to avoid fragmentation and	JRC.G.I.5 Eric COLINEAU	3.3.f	RTD	JRC	n/a	EAC ENER	- W. TRZEBIATOWSKI INSTITUTE OF LOW TEMPERATURE AND STRUCTURE RESEARCH (POLISH ACADEMY OF SCIENCES) - Technical University of Lisboa - Gdansk University of Technology - INSTITUTO TECNOLÓGICO E NUCLEAR - Lancaster University - University of Edinburgh - UNIVERSITY OF BRISTOL - University College London - UNIVERSITY OF SHEFFIELD - UNIVERSITA DEGLI STUDI DI	01/01/2018 31/12/2019	INS-RS	18071	OASIS yearly summary report 2018	The report describes the global activity and management during a calendar year period : calls for proposals, OPAC meetings, Users meetings, Access provided (number of operating days), results of implemented proposals (scientific publications).	28/12/2018	JRC technical reports
												19071	OASIS yearly summary report 2019	Yearly summary report of the programme execution, calls, selection, user experiments, project experience and lessons learned.	31/12/2019	JRC technical reports
65 - DANTE JRC.G.10	6461 - TCB-NUS Training and Capacity Building in Nuclear Safety and Science Applications	The present workpackage aims at coordinating the different training courses on nuclear safety, radioactivity environmental monitoring, radiation protection that are provided by JRC mainly on the sites of Petten, Ispra, Geel and Karlsruhe. Beside the provision of training courses on applications, methodologies and tools developed by JRC, this workpackage aims at complementing its building capacities through collaborations and agreements with external competent organisations or pool of experts. The latter addressing trainings and education needs complementary to or which are not yet available through other networks or EU initiatives. Synergies with E&T carried out outside the EU (e.g. IAEA, DG DEVCO programmes) should also be sought for. Indeed, the coordination of these training activities is of utmost relevance to avoid fragmentation and	JRC.G.10 Franck WASTIN	3.3.f	ENER	JRC	n/a	DEVCO ENER RTD	IAEA - International Atomic Energy Agency (IAEA)	01/01/2018 01/01/2021	INS-RS	1910	Trainings in Nuclear Safety and Science Applications	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2018 and their organisation.	31/03/2019	Training
3.3.g development of nuclear science applications and use of radioisotopes: - develop techniques for medical radiotherapy and radio-diagnosis;- contribute to a resilient and sustainable supply of medical radioisotopes in the EU;- develop industrial and space applications of nuclear science.																
7448 - SARA JRC.G.2	433 - TAT Targeted Alpha Therapy	In its communication (COM(2010)423) the European Commission has identified the securing of supply of radioisotopes for nuclear medicine and the improvement of radiation protection of patients and staff as key challenges. In its 3053rd meeting the European Council has stressed the need for continued efforts to actively investigate economically feasible alternatives to the current radioisotope production methods and the isotopes currently used. This WP will accrue and evaluate data on novel technologies for production and use of radiolabeled compounds in nuclear medicine and support the transfer of successful developments into standardized clinical protocols and routine use for the benefit of cancer patients in Europe and worldwide. In close collaboration with regulatory bodies it will contribute to the development of recommendations and guidelines for the safe use of radiolabeled compounds in nuclear medicine to increase safety of patients and hospital staff. In response to the increasing use of alpha emitting radionuclides in cancer therapy a registry database summarizing the clinical experience with alpha emitters will be further developed and disseminated. Training will be provided for hospital staff on the safe handling of radionuclides in clinical settings to increase safety and reduce radiation dose to patients and staff based on JRC developed training material. Knowledge will be transferred to other relevant parts of the EC and to international organisations such	JRC.G.I.5 Alfred MORGENSTERN	3.3.g	JRC	JRC	S. Mundigl ENER D.3.002	GROW SANTE	- University of Gothenburg - INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE - INSTITUTE OF NUCLEAR CHEMISTRY AND TECHNOLOGY - Delft University of Technology - Medical University of Warsaw - Czech Technical University in Prague - Technische Universität München - KING'S COLLEGE LONDON - ERASMUS MEDICAL CENTER ROTTERDAM - UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA - JOHANNES GUTENBERG	01/01/2014 30/12/2018	INS-RS	1	Standardized protocol for actinium-225 production and targeted alpha	a technology-transfer report describing in detail the protocol for the prostate cancer treatment based on the use of Ac-225 PSMA-617, including the technique for producing Ac-225.	15/12/2018	JRC technical reports
												2	JRC-IAEA support to South Africa and other countries	Transfer of knowledge on targeted alpha therapy to South Africa and other countries with focus on TAT of prostate cancer; provision of training to hospital staff; cooperation with IAEA on organisation of training events and workshops on securing supply of actinium-225 and knowledge transfer to hospitals	15/12/2018	Training
												3	Scientific articles	Diffusion of knowledge by scientific publications and conferences for specialists and general public.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7448 - SARA JRC.G.2	5150 - SMeR Sustainable and Resilient Supply of Medical Radioisotopes in the EU	The supply of radioisotopes for worldwide medical applications is one of the most important aspects of nuclear science. Every year, over 50 million imaging exams are conducted using radiopharmaceuticals; in addition, a growing number of treatments involve radioactive elements combined with specific affinity molecules for targeted therapy. Emerging approaches and technologies, such as personalised medicine, will create an extra burden in the already fragile supply. The production of radioisotopes for medical applications involves a unique, just in time, chain of supply, in which the half-lives of the radionuclides are extremely limited, and which is strongly relying on the availability of nuclear reactors, until now mainly government-subsidized research facilities. Among other factors, the aging of the reactors and the strategic changes in nuclear policy in the EU MS and worldwide contribute to the critical fragilities in the security of supply of medical radioisotopes, highlighted in the severe shortages experienced in 2008-2010. In reply, the EU Council has adopted several conclusions (2009, 2010, 2012 and recently a Dutch Presidency position paper) stressing the importance of medical radioisotopes and urging Member States and the European Commission to take action and define a European solution to ensure the security of supply of medical radioisotopes. In this framework, the EU Council directly asked the Commission to perform a study of the EU market of	JRC.A.7 MARGARIDA GOULART DE MEDEIROS	3.3.g	ENER	JRC	Georgi SIMEONOV	SANTE		01/01/2017 31/12/2018	INS-RS	02	Contribution to EU OSMR and OECD-NEA HLGMR reports	Written contributions and presentations to be delivered in the plenary sessions of the EU observatory on the Supply of Medical Radioisotopes and of the High-level Group on the Security of Supply of Medical Radioisotopes (HLG-MR).	31/12/2018	JRC contributions to policy documents
												04	Sustainable and resilient supply of MR in the EU	Report on the EU market of medical radioisotopes, including analysis of the survey data, current and emerging medical use of radioisotopes in the EU, and recommendations to improve the sustainability and resilience of supply of medical radioisotopes.	30/09/2018	Science-for-policy reports
												05	Sustainable EU Market of Medical Radioisotopes	Scientific publication with data extracted from the commissioned survey and the JRC report on the EU market of medical radioisotopes	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7448 - SARA JRC.G.2	6504 - PANuMA Properties and Applications of Nuclear Materials and Actinides	In this work package, experimental and theoretical studies of actinides and nuclear-fuel related materials are combined in order to expand the knowledge base necessary both for the safety assessment of nuclear fuels and for developing novel functional materials with unexpected properties. Emphasis will be given i) to thermo-electric materials with potential application in radioisotope power sources for space missions and ii) to compounds forming in case of accidental fuel-coolant interactions iii) to materials synthesized and characterised in aqueous and non aqueous phases. Part of the program will be dedicated to the study of unexplained exotic properties exhibited by uranium dioxide, the most commonly used nuclear fuel, whose knowledge is necessary for developing computational models with predictive capability. The influence of structural and chemical defects on the macroscopic properties of uranium dioxide will also be carefully investigated in collaboration with the French CEA. A part of the programme will be performed as a support in the framework of an open access initiative – USERLAB - offering the use of specialised and unique infrastructure for experimental investigations of radioactive materials to scientists from European academic and research organizations. Calls for proposals will be issued twice a year, and users will be selected through a peer-review process on the basis of scientific and educational merit.	JRC.G.I.5 Jean-Christophe GRIVEAU	3.3.g	JRC	JRC	n/a	EAC		01/01/2018 31/12/2019	INS-RS	PANuMA200 1801	Scientific articles	Scientific publications in open journals or in conference proceedings on fundamental properties of nuclear fuels related materials, including structural, magnetic, electronic and thermodynamic features at extreme conditions (very low temperature, high magnetic field and pressure) and of emergent phenomena (magnetism and superconductivity) related to the physics of the actinides elements and compounds for the basic understanding of 5f electrons during 2018.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												PANuMA201 901	Scientific articles	Scientific publications in open journals or in conference proceedings on fundamental properties of nuclear fuels related materials, including structural, magnetic, electronic and thermodynamic features at extreme conditions (very low temperature, high magnetic field and pressure) and of emergent phenomena (magnetism and superconductivity) related to the physics of the actinides elements and compounds for the basic understanding of 5f electrons during 2019.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7448 - SARA JRC.G.2	6509 - Space-PARTY Space Applications/Third party work	Most of the nuclear power sources for space missions are based Pu-238, a nuclide with high decay heat, but expensive to produce and not readily available in Europe. However, for future European space missions to space regions far away from the sun or into the shadow of planetary bodies, the European Space Agency (ESA) has decided to develop a European radioisotope based power source and to choose Am-241 as power providing nuclide. After the successful completion of the Third Party contract NARCO, which systematically investigated the sinter ability of americium oxides in cooperation with NNL, and the Exploratory Research EPSO-Space, which culminated in a small scale prototype of an Am-241 based Radioisotope Heating Unit at the End of 2017, the research will now be continued in the frame of Space-PARTY. The project will be conducted in close collaboration with NNL and ESA and be based on lessons learned from EPSO-Space. In the frame of SPACE-Party pellet manufacturing parameters will be further optimized, a full scale americium sesquioxide pellet will be prepared, systematic interaction test on P130Rh cladding material in contact with Am2O3 will be performed, safety relevant physical and chemical properties of americium oxide will be assessed, a full scale RHU cladding will be developed and welding procedures will be qualified. Finally a full scale prototype RHU will be manufactured and a safety analysis report will be prepared.	JRC.G.I.3 DANIEL FREIS	3.3.g	GROW	JRC	n/a		- German Aerospace Center - DLR - EUROPEAN SPACE AGENCY UKNLL - National Nuclear Laboratories of the UK	01/01/2018 31/12/2019	INS-CAS	201801	Investigation and optimisation of the sintering behaviour of AmO2 for space application	The report summarises the results of the sintering experiments and the systematic optimization of the sintering behaviour of americium oxide. The outcome of these experiments will enable the definition of manufacturing parameters for a full scale americium oxide pellet to be produced as prototype heat source for ESA.	15/11/2018	JRC technical reports
												201901	Final summary report on the preparation of a full scale prototype Radioisotope Heating Unit for deep space missions	The report describes the development, qualification and fabrication of a full scale RHU for ESA future exploratory space missions. A full scale americium oxide pellet will be manufactured. A cladding will be developed and welding procedures will be qualified. Finally a full scale prototype RHU will be manufactured.	15/11/2019	JRC technical reports
												201902	Scientific articles	Scientific publications or conference contributions related to studies of the RHU process published during the period 2018 – 2019.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
7448 - SARA JRC.G.2	7303 - Ac-PSMA Actinium-PSMA	The aim of this project is to develop a protocol for standardized synthesis and stabilization of the radiopharmaceutical 225Actinium-PSMA-617 and to extend its applicability to high activity levels required for multiple patient doses.	JRC.G.1.5 Alfred MORGENSTERN	3.3.g	JRC	JRC	n/a	GROW SANTE	- Technische Universität München - Medical University of Warsaw Uni Hei DE - University Hospital Heidelberg	01/03/2018 28/02/2019	INS-PC	1	Stabilized formulation of Actinium-225- PSMA-617	Report on teh development of a formulation for Actinium-225-PSMA-617 with a shelf-life of several days.	28/02/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
4. A deeper and fairer internal market with a strengthened industrial base																	
4.1. Internal market, industry, entrepreneurship and SMEs																	
4.1.a strengthening the industrial base in the EU single market - provide support to industrial policy development, notably to support standardisation, reference measurements and materials (including nanomaterials); support the proper functioning of the single market for food products (key orientation 7.1.b); contribute to material efficiency and circular economy; analyse advanced manufacturing and key enabling technologies; SMEs and innovative																	
326 - EE JRC.C.2	189 - SILC Crosscutting Valorisation of SILC	The aim of this WPK (Administrative Arrangement) is to provide support to DG GROW for the valorisation and dissemination of the results of projects funded by the Sustainable Industry Low Carbon (SILC) initiative. SILC aims to help industrial sectors to achieve reductions in the intensity of greenhouse gas emissions while maintaining the European industrial competitiveness.	JRC.C.7 Evangelos TZIMAS	4.1.a	GROW	GROW	Mr. Aurelien GENTY	CLIMA ENER ENV RTD		01/09/2012 02/04/2019	CON-AA						
433 - SciNANO JRC.F.2	373 - HOT-NANO Harmonisation Of Tools for sound regulatory assessment of nanomaterials	HOT-NANO supports the establishment of a sound, science-based and balanced regulatory framework for nanomaterials (NM) (e.g. under REACH, Cosmetic Products, Food & Food Contact Materials, Biocides, Pharmaceuticals) to support innovation, growth, EU/global trade, and consumer acceptance, while ensuring a high level of protection for human health (also in occupational settings) and the environment, and clear and accurate information to all stakeholders. HOT-NANO supports EU regulatory processes via the harmonisation of assessment tools such as test methods, guidelines, guidance (physico-chemical, human health, environment) and safety assessment methodologies (e.g. non-testing approaches such as grouping and read-across) for NMs and other chemicals. It also supports development of international test guidelines and standards, EU policy making and international consensus-reaching on risk assessment methodologies for chemical substances focusing on NMs, e.g. at OECD and ISO levels. The work involves active participation in international fora, such as OECD (playing a leading role in the Working Party on Manufactured Nanomaterials and representing the Commission in the Test Guidelines Programme, which govern global harmonisation of methods) and ISO/CEN, to represent EU interests/priorities. Results are fed via EU working groups into technical and policy documents of Commission Services, EU Agencies and other actors, supporting EU legislation such as the Test Method Regulation or the update of chemicals legislation to specifically address NMs. Nanomedicines are addressed via work with the IPRF. Moreover, HOT-NANO manages the JRC Nanomaterials Repository to provide benchmark materials for the scientific development and regulatory implementation of methods for which reference materials are not (yet) available, and the NANOhub database. The objectives and work of HOT-NANO are underpinned by research activities and complementary collaborative research projects, particularly on physical/chemical/biological characterisation of NMs. It is important that EU regulations on NMs, as requested by the EU Parliament and other EU bodies and stakeholders, are adapted in a scientifically sound way to support safety, consumer confidence, access to information, a level playing field, and the single market without stifling innovation or growth. EU regulators, industry and the public, all benefit from this. The WPK addresses SciNano objectives related to industrial NMs and chemicals.	JRC.F.2 Juan RIEGO SINTES	4.1.a	GROW	JRC	GROW D.1 (M.Puolamaa, P. Baricic); ENV A.3 (A.Kobe, K.Kilian); SANTE (R.L. Perez Berbejal) RTD (G.Katalagarianakis) EMPL(J. Costa- David)	CNECT EMPL ENV RTD SANTE	CEPIC - European Chemical Industry Council (CEPIC) CEN - European Committee for Standardization Chem Cos Pharm Food Agri - Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry Cosmetics Europe - European Cosmetics Association ECHA - European Chemicals Agency (ECHA) EFSA - European Food Safety Authority ICCR - International Collaboration of Cosmetics (ICCR) ISO - International Organization for Standardization (ISO) OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2016 31/12/2020	INS-RS	14 17 19 20 22 23 24	Representative Test Materials 2017 Analytical work supporting the grouping/read across for nanomaterials Supporting EU & International harmonisation on EHS for NM (2018) Adaptation to Technical Progress - 10 Representative Testing Materials 2018 supporting EU & International harmonisation on EHS for NM (2019) Adaptation to Technical Progress- 11	Representative Test Materials delivered from and included in the JRC Repository of Nanomaterials in 2017. Development and implementation of internationally harmonised Test Guidelines for nanomaterials assessment relies on the availability of benchmark (or representative) materials both for the method developers and for the users. JRC hosts the first set of thoroughly tested nanomaterials for use as benchmarks for research and regulatory tests development and implementation In support to the core policy-related work of HOT-NANO, there are ongoing laboratory activities related to the development of the JRC's nanomaterials repository, characterisation of these materials, methods for determination of the interaction of nanomaterials with biological systems or the environment, and grouping/read-across methods. As under REACH, every single nanoform of a nanomaterial must be assessed. The work should deliver further guidance on the application of grouping and read-across to nanomaterials to avoid the need of massive testing Report of contribution and output of activities supporting EU & International harmonisation on EHS for NM in EU NCM-44, OECD WNT-30, OECD WPMN, ISO and CEN meetings, the EU Competent Authority Sub-group on Nanomaterials (CASG Nano), the Nanomaterials Working Group and other fora related to the implementation of REACH and other regulations related to nanomaterials. Report on contributions and output to the Inter-Service Group on Nanotechnology, the ICCR and other Commission Working Groups This deliverable will ensure coherence of EU test methods with international guidelines by providing the test methods for the 10th ATP for the Test Method Regulation (number and dates tbc). The number of methods depends on a regular priority setting and developments in the scientific area. The exact date of approval by the EU National Coordinators is not predictable and, in addition, the exact date of the official voting and adoption in the comitology process is even less predictable. Representative Test Materials delivered from and included in the JRC Repository of Nanomaterials in 2018. Development and implementation of internationally harmonised Test Guidelines for nanomaterials assessment relies on the availability of benchmark (or representative) materials both for the method developers and for the users. JRC hosts the first set of thoroughly tested nanomaterials for use as benchmarks for research and regulatory tests development and implementation. In addition, Scientific publications detailing how surface analytical methods have been applied to the physico-chemical characterisation of materials from the JRC nanomaterials repository will be produced. These will serve the wider scientific community with analytical data giving added value to the numerous studies which have been/will be undertaken using materials supplied from the JRC nanomaterials repository, and will be complemented by JRC Technical Reports. Contribution and output of activities supporting EU & International harmonisation on EHS for NM in EU NCM-44, OECD WNT-30, OECD WPMN, ISO and CEN meetings, the EU Competent Authority Sub-group on Nanomaterials (CASG Nano), the Nanomaterials Working Group and other fora related to the implementation of REACH and other regulations related to nanomaterials. Contributions and output to the Inter-Service Group on Nanotechnology, and other Commission or EFSA Working Groups. This deliverable will ensure coherence of EU test methods with international guidelines by providing the test methods for the 11th ATP for the Test Method Regulation (number and dates tbc). The number of methods depends on a regular priority setting and developments in the scientific area. The exact date of approval by the EU National Coordinators is not predictable and, in addition, the exact date of the official voting and adoption in the comitology process is even less predictable	28/02/2018 15/12/2018 30/11/2018 30/11/2018 15/03/2019 30/11/2019 30/11/2019	Reference Material JRC contributions to policy documents JRC contributions to policy documents JRC contributions to policy documents Reference Material JRC contributions to policy documents	
167 - EST JRC.C.1	495 - STORIC Competitiveness and Innovation of Energy Storage Technologies	The objective of this work package is, through use and extension of existing experimental testing infrastructure, to perform robust pre-normative experimental performance and safety evaluation of energy storage devices. This science-based work package contributes to the objectives of the EST project to achieve European Union policy goals pertaining to low-carbon, safe and sustainable transport and energy storage by following 3 lines of activities: (1) robust support towards safe and sustainable low-carbon mobility and energy storage related policy and international regulations; (2) harmonisation of standards for energy storage test methods to facilitate innovation; (3) underpinning innovation and EU industry's competitiveness through technology validation and stimulating commercialisation by enhancing safety and consumer acceptance. Activities in this work package comprise experimental testing and numerical modelling. These competences are supplemented with knowledge management activities to identify opportunities for integration of Europe's research and innovation contributions which will increase the competitiveness of European industry. To achieve its objectives this work package exploits JRC's independence as a warranty to ensure impartial and robust support to related standards, regulations and innovation. This work package also contributes to the implementation phase of Key Action 7 of the Integrated SET Plan. R&I actions needed to achieve the strategic research and innovation targets and priorities are anticipated and the effectiveness of invested efforts to achieve these targets needs to be assessed. To achieve or maintain an industrial leadership position in Europe, barriers across the whole value chain need to be addressed; pre-normative research will be performed in collaboration with industry for	JRC.C.1 Beatriz ACOSTA IBORRA	4.1.a	ENER	JRC	TRICAS AIZPUN Antonio (MOVE C1); VANNSON, Philippe (RTD G2); BROERT JES Peter (GROW C4)	GROW MOVE RTD	CEN - European Committee for Standardization CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EGVIA - European Green Vehicles Initiative Association EUROBAT - Association of European Automotive and Industrial Battery Manufacturers IEA-HIA - IEA HIA International Energy Agency Hydrogen Implementing Agreement IEC - International Electrotechnical Commission IPHE - Partnership for Hydrogen and Fuel Cells in the Economy ISO - International Organization for	01/01/2018 31/12/2019	INS-RS	STORIC1 STORIC2 STORIC4	SET plan Action 7 Contributions to safety standards for energy storage Open access to Energy Storage Lab for scientists and industry for R&D	Support to Phase 2 of the Integrated SET plan Action 7 - identifying, planning and implementing the necessary research, innovation and competitiveness (R&I&C) activities to achieve agreed European battery performance, cost and manufacturing targets. Report on contributions to standardisation related to energy storage technologies through, among others, feeding in results of in-house PNR and risk assessments and by participating to the drafting of the standards. Whenever possible, results of the related underpinning scientific work will be published in peer-reviewed scientific journals. This deliverable will make available to researchers the Energy Storage (GasteF, FCTest and BESTEST) facilities. In collaboration with Dir A access will be granted through open calls and proposals will be evaluated by a Selection Panel, considering the priority topics defined by a Steering Committee. Depending on the proposal, the labs will provide technical assistance, testing of specimens, data acquisition, support in the use of analytical tools. The tangible outputs will consist of a series of reports containing results, methodology and experimental details for each of the selected projects. If in agreement with the specific users, experimental results will be published in co-authorship in peer reviewed scientific journals.	31/07/2019 31/01/2019 31/12/2019	JRC contributions to policy documents JRC contributions to standards JRC technical reports	
219 - Photovoltaic Energy JRC.C.2	579 - PVREF Photovoltaics Standards, Performance and EU Research Infrastructure	This work package targets a series of themes of high relevance to the implementation of EU policies on renewables, on innovation and on competitiveness: a) Develop European and international standards to promote a transparent market of manufacturers and investors, and to promote innovative PV technologies. b) Pre-normative R&D to improved accuracy of the technical measures of the performance and reliability of PV products, which underpin investments, EU electricity markets, trade regulations and other legal measures. c) Provide a hub for European PV research efforts, providing training, promoting best practices in performance assessment using round robins and intercomparison, hosting of trainees and visiting scientists d) Provide independent reference measurements for EU research projects, national laboratories and industry. e) Technical coordination of the annual European Photovoltaic Solar Energy conference (EU PVSEC) The European Solar Test Installation (ESTI) provides the platform for the experimental research and focal point for JRC's support to developing our largest and most competitive source of sustainable electricity.	JRC.C.2 Ewan DUNLOP	4.1.a	GROW	JRC	GROW.B.3 "Standards for Growth" (Hein BOLLENS, DHOu)	ENER RTD	CENELEC - European Committee for Electrotechnical Standardization (CENELEC) EERA - European Energy Research Alliance IEC - International Electrotechnical Commission PV Ind EU - Photovoltaic industry EU R&D Inst Int - Governmental and independent R&D institutions SET-Plan Com - SET-Plan Community	01/01/2014 31/12/2018	INS-RS	1706 1801 1802 1807	PV Deployment Potential in the EU PV Standards Status 2018 Assesment of PV Products for Near Zero Energy Buildings Levelised Cost of Electricity Generation from Small PV Systems in the EU	Update the analysis of the distribution of the levelised cost of electricity generated by small PV systems over the EU (in collaboration with work packages PV-GIS and RE-PORT). The report will address other factors affecting deployment, including land availability and suitability, storage options and also administrative barriers. Finally it will provide a summary assessment for each Member State. Annual report on technical standards for PV products and systems, based on JRC contributions to: - International Electrotechnical Commission Technical Committee 82 activities - European Committee for Electrotechnical Standardisation (CENELEC) TC-82 activities - IECRE (IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications) - International PV Quality Assurance Forum All new buildings in the EU will be required to be Near Zero Energy from 2021 on (already from 2019 for public buildings). PV is one of the few options for on-site or near-site energy production. However the availability of appropriate products, information on their performance and integration standards are a source of concern. The report will assess these aspects and provide recommendations for short-to-medium actions. It will use results of lab investigations as well as market surveillance. Update the analysis of the distribution of the levelised cost of electricity generated by small PV systems over the EU (in collaboration with work packages PV-GIS and RE-PORT). The report will address other factors affecting deployment, including land availability and suitability, storage options and also administrative barriers. Finally it will provide a summary assessment for each Member State.	28/02/2018 31/12/2018 30/06/2018 31/12/2018	Science-for-policy reports Science-for-policy reports Science-for-policy reports Science-for-policy reports	
	610 - ELSALab	To design, set up and carry out large-scale experimental test campaigns for scientific and policy support projects ensuring high standards of management, safety and quality. Perform tests for work packages SLA4F4E and BUILD-CIP. Give Transnational and Open Access to Research Projects within work packages SEERIA 4 EU and ELSA OPEN, respectively. To maintain, operate efficiently and keep up to date the Reaction Wall and HOPLAB facilities. This includes regular and improved maintenance, strategic planning for new investments, implementation of					Marzena Rogalska, Head of Unit, ELSA	ENER	CEN - European Committee for Standardization ESFRI - European Strategy Forum on Research Infrastructures				10	ELSALab operation and strategic report 2019	Experiments planning and control, review of strategic planning for new investments, implementation of safety standards, successful re-certification according to ISO 9001 quality management assessment of the effects of planning and control, as well as on the implementation of protocols for qualification, of the performance of the Laboratory.	15/12/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
JRC.E.4	energy efficiency requirements on building design and retrofit	about the development, maintenance and upgrading the existing building stocks to achieve a global improvement of safety, energy efficiency and sustainability with reference to available resources and investment plans. In practice, the tool could be used to study the different alternative scenarios, i.e., the options for the improvement of safety, energy performance and sustainability of typological buildings, or any combination of the above, including demolition and reconstruction. The output would be in terms of costs, so that for each alternative solution investments could be compared with expected savings.	Paolo NEGRO	4.1.a	GROW	JRC	Raffaelli, Acting Head of Unit, DG GROW, C.1	ENV REGIO	Standardization	30/12/2019	INS-RS	3	Report on pilot implementation of the method for most efficient allocation of resources	A partner interested in applying the tools developed for implementing the methodology will be identified. The partner will provide the necessary data and details for the pilot implementation. The significances of the results will be assessed against the needs of the partner. The report will pave the way for wider application of the method.	16/12/2019	JRC technical reports
433 - SciNANO JRC.F.2	2191 - NANOREG II Development and implementation of Grouping and Safe-by-Design approaches within regulatory framework	This work package contributes to the design and implementation of a regulatory system which can deal with a rapidly diversifying system of manufactured nanomaterials (MNM) over time. This system has to be flexible enough to be able to deal with new targets and requirements in the future on the basis of the development and introduction of Safe by Design (SbD) principles. Coupling SbD to the regulatory process, NANOREG II will demonstrate and establish new principles and ideas based on data from value chain implementation studies and establish SbD as a fundamental pillar in the evaluation of a novel MNM. NanoREG II will develop NM grouping and categorisation concepts and related guidance documents to support industries or regulatory agencies but would also strongly support commercial launch of new innovative MNM and applications of Nanotechnologies	JRC.F.2 Juan RIEGO SINTES	4.1.a	GROW	RTD	GROW – Otto LINHER (GROW.D.2) ; RTD - Georgios KATALAGARIANAKIS (RTD.D.3)	ENV RTD	CEFIC - European Chemical Industry Council (CEFIC) CHEM Industry - Chemicals Industry Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry ECHA - European Chemicals	01/09/2015 31/08/2018	CON-IA	4	Safe Innovation Approach for Nanomaterials	Safe Innovation Approach integrating Safe by Design concept and Regulatory Preparedness	31/08/2018	JRC technical reports
190 - PRESERVE JRC.C.4	2248 - LowBraSys A Low environmental impact Brake System	The LOWBRASYS H2020 project aims at demonstrating a novel and low environmental impact brake system that will reduce micro and nanoparticles emissions by at least 50% both in number (PN) and in mass, whilst improving the measurement and understanding of their effects on health and the environment and providing recommendations to policy makers. In the LOWBRASYS project JRC will be responsible for the task regarding the definition of real drive brake patterns and consequently the definition of a laboratory tests procedure to assess real drive brake emissions (RDbe). JRC will also lead the task having the objective of proposing recommendations for policy makers in order to define a standard limit and procedure for particulate emissions deriving from brakes. These activities suit well with the expertise of JRC to provide scientific support to EU policies.	JRC.C.4 Giorgio MARTINI	4.1.a	GROW	RTD	Nikolaus STEININGER	ENV		01/09/2015 31/08/2018	CON-IA	1	New real-drive brake cycle for chassis dynamometer	As responsible for Task 2.5 on Standards & Technology Requirement, JRC will steer the definition of real drive brake patterns and of a laboratory tests procedure to assess real drive brake emissions. JRC will also collect the inputs on strengths and weaknesses raised during the project with the aim of defining recommendations for future European Legislation, including emissions of brake particles and measurement procedure	30/06/2018	Science-for-policy reports
158 - SPC Economics JRC.B.5	2746 - GreenImpact-E2KLEMS Toward Green Competitiveness: Explaining and Predicting Productivity Impacts of Environmental Policy	This project builds a multi-industry framework for modelling & analysis of international competitiveness and environmental efficiency of EU industries. It integrates in a seamless manner the analysis of the industry' production technology and its environmental effects in the form of the environmental output production function. It will include environmental effects into Total Factor Productivity for the same sectors as the EU-KLEMS database	JRC.B.5 TEODORA CORSATEA	4.1.a	GROW	JRC	Francisco Caballero (DG GROW)	ECFIN ENER ENV ESTAT RTD	ENV gov - Government organisations for environment, forestry, river and catchments, land use and environmental impact MIN Eco Energy EU - Ministries of Economy and Energy, Energy Authorities EU	01/01/2015 29/12/2018	INS-ER	6	Academic publication of the E2KLEMS research	Environmentally Extended KLEMS Model for Analysis of Sustainable Productivity and Competitiveness. Publication in an economic or environmental policy research journal, where the results of the project are presented.	28/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
158 - SPC Economics JRC.B.5	3241 - ELIOD Environmental and labour accounts linked to a global input-output database	Production of labour and environmental accounts in extension of the EU and global multi-country input-output tables in order to contribute to the follow-up of the WIOD project. These extensions are complementary to the institutional production of international and global accounts by Eurostat, OECD and other international agencies.	JRC.B.5 Peter EDER	4.1.a	GROW	GROW	Aurelien GENTY	CLIMA ECFIN ENPL ENV ESTAT		16/12/2015 30/11/2018	CON-AA	3	Final Report	Summary report on data conversion, projection and production as well as an analysis case study	30/09/2018	JRC technical reports
158 - SPC Economics JRC.B.5	3320 - CompTrade Economic analysis of industrial competitiveness and trade	This work package supports policy making and better regulation by + economic analyses for the BREXIT negotiations + methodologies, data and analyses for assessing industrial competitiveness in the European Semester + quantitative analysis and modelling of the socio-economic and environmental impacts of trade (including analysis of the effects of EU exports on employment and income, and analysis of the servicification process of EU trade)	JRC.B.5 Peter EDER	4.1.a	GROW	JRC	Francisco De Asis CABALLERO SANZ	EMPL ENV SG TRADE				3	Analysis of global value chains	Analysis of global value chains with respect to EU and Member States industrial competitiveness, integration in the internal market, and EU international trade with key trade partners	31/12/2019	Science-for-policy reports
												5	Contributions to impact assessments and evaluation	Modelling and analytical support to policy evaluations and impact assessments related to different industrial sectors, the REFIT programme or new policy initiatives	31/12/2020	JRC contributions to policy documents
159 - Waste Management JRC.B.5	3321 - FertilisersCriteria1 Quality criteria for recovered materials used in fertilising products	This WP develops European-wide quality criteria for recovered materials used in fertilising products. Based on the results DG GROW will develop the Fertiliser Regulation into a more favourable legal framework for the production of fertilisers from biological and waste materials with the aim to give them access to the entire EU market. This initiative will support the circular economy and create the conditions for investment in the EU-located production of sustainable fertilisers.	JRC.B.5 Peter EDER	4.1.a	GROW	GROW	LIEGEOIS Eric (GROW), DELVAUX Vincent (GROW), JAMERS An (GROW)	ENV		01/12/2015 30/11/2018	CON-AA	3	Final report on quality criteria	Final report on quality criteria for recovered materials used in fertilising products	30/11/2018	Science-for-policy reports
565 - IPChem-NextGen JRC.F.7	3503 - STANPAHs Developing methods to determine migration of PAHs from materials used in consumer products	The European Commission (DG GROW) has a binding obligation to revise the restriction of Polyaromatic Hydrocarbons (PAHs) in plastic and rubber used in consumer articles (as set out in (EU) No. 1272/2013, amending entry 50 of Annex XVII to the REACH regulation), taken into account new information including migration of PAHs. In support of that, the WPK aims at developing standard testing methods to determine the migration of carcinogenic PAHs, from plastic and rubber under conditions simulating to the extent possible dermal and oral contact. The analytical method performance will be evaluated. The methodology shall be robust, capable of being applied by commercial laboratories and should be developed to a state where it can be taken up for harmonisation by the European Standards Organisations, ensuring the correct	JRC.F.2 Josefa BARRERO	4.1.a	GROW	GROW	Mr Klaus Berend (HoU), Mr. Enrique Garcia John (policy officer) GROW.DDG1.D.1, REACH	EMPL ENV JUST SANTE	CEFIC - European Chemical Industry Council (CEFIC) CENELEC - European Committee for Electrotechnical Standardization (CENELEC) ECHA - European Chemicals Agency (ECHA) ISO - International Organization for Standardization (ISO)	10/05/2016 08/03/2018	CON-AA	2	Migration of PAHs from plastic and rubber	Final report on the studies on migration of PAHs from plastic and rubber materials and the method development and (in house) validation for their determination	10/02/2018	JRC technical reports
341 - Reference Materials JRC.F.6	3567 - MRM Management of Reference Materials	Reference Materials (RMs), including Certified Reference Materials (CRMs), are crucial measurement standards and quality benchmarks for the implementation and monitoring of many EU policies, such as (EC) 1829/2003 (GMOs in food/feed), (EC) No 2073/2005 (microbiological food criteria), DIR 98/79/EC (in-vitro diagnostics), (EU) No 51/2013 (animal protein in feed), 2000/60/EC (water), (EU) 1169/2011 (food labelling), 97/23/EC (pressure equipment). This WPK comprises the management of all non-nuclear RMs, which were/are developed at the JRC site in Geel, but also of the 'legacy' RMs that were entrusted to the JRC by the European Commission's BCR (Bureau Communautaire de Reference) and those RMs deriving from BCR follow-up programmes such as the SM&T (Standards, Measurement and Testing programme). This includes their storage under controlled conditions.	JRC.F.6 Andrea HELD	4.1.a	GROW	JRC	Jean-Francois AGUINAGA (GROW B.3); Hans INGELS (DG GROW B.1)	AGRI ENV RTD SANTE	CEN - European Committee for Standardization ISO - International Organization for Standardization (ISO) ISO REMCO - ISO Committee on Reference Material			181	Training on the use of reference materials	A training course on the selection and use of reference materials, including aspects of measurement uncertainty estimation, will be given.	31/12/2018	Training
												182	Distribution of reference materials	A report will summarise the distribution activities related to Reference Materials and Certified Reference Materials, including customer support activities.	31/12/2018	JRC technical reports
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	3810 - ELSA OPEN Opening ELSA to scientists and industry for R&D	ELSA will make available to researchers and industry the Reaction Wall and HOPLAB facilities and will associate to the European Strategic Forum for Research Infrastructures. Access will be granted through open calls and proposals will be evaluated by a Selection Panel, considering the priority topics defined by a Steering Committee. Depending on the proposal, ELSA will provide technical assistance, testing of specimens, data acquisition, support in the use of analytical tools, a web-based data repository and tele-presence. The work package supports the Commission's objective for a deeper and fairer internal market with a strengthened industrial base. It will put together top researchers with leading industry, spearheading innovation, including the development of e-infrastructure, resource efficiency issues and resilience of critical infrastructures. It will have a positive impact on the normative developments and on the competitiveness of the European construction sector. The activities are relevant to the Disaster Risk Management and the Territorial Policies Knowledge Centres and to the JRC Initiative on Cities.	JRC.E.4 Georgios TSIONIS	4.1.a	GROW	JRC	Marzena Rogalska, Head of Unit, Fulvia Raffaelli, Acting Head of Unit, DG GROW, C.1		CEN - European Committee for Standardization ESFRI - European Strategy Forum on Research Infrastructures			4	Progress Report on ELSA Open - 2018	The deliverable will include the results of the evaluation by a User Selection Committee, according to the evaluation criteria and priority topics. It will present the final detailed design of the specimens, experimental set-up, testing sequence, instrumentation and data acquisition system for the selected projects. It will report on the progress of execution and technical results of the selected projects, depending on the time schedule and the type of project.	21/12/2018	JRC technical reports
												5	Progress Report on ELSA Open - 2019	The deliverable will include the results of the evaluation by a User Selection Committee, according to the evaluation criteria and priority topics. It will present the final detailed design of the specimens, experimental set-up, testing sequence, instrumentation and data acquisition system for the selected projects. It will report on the progress of execution and technical results of the selected projects, depending on the time schedule and the type of project.	20/12/2019	JRC technical reports
603 - CC-ME JRC.I.1	3946 - CC-ME.GROW CC-ME GROW	The purpose of this WP is to provide scientific expertise, methodological support in the context of the assessment of the progress in the implementation of structural reforms or CSRs. This WP is developed in collaboration with DG GROW Unit A.2. Its expected outcome is to provide a review of existing measures to assess the degree of implementation of the CSRs and to provide an analysis on the determinants of CSRs implementation that can be used in the annual reports on integration and competitiveness or in DG GROW's contributions to the Annual Growth Survey and the European Semester, in line with "A New Boost for Jobs, Growth and Investment" of the Commission. Input from JRC colleagues already working on related topics will be sought.	JRC.I.1 LEANDRO ELIA	4.1.a	GROW	GROW	Frank SIEBERN-THOMAS					02	Review of the methods to assess CSRs implementation	The deliverable will provide a review of the methods currently in use by the core policy DGs that participate in the European Semester, for the assessment of CSR implementation. This will touch upon past and recent methods and also discusses newly proposed ones. The review will be then expanded with a sensitivity analysis comparing different methods in order to examine whether overall evaluation of CSR implementation is driven by the method used	31/03/2018	JRC technical reports
												GROW1	Analysis of CSR implementation	The study aims to provide an estimation of CSR implementation probabilities over years. The analysis will focus on CSR for which one can construct an implementation path throughout time.	30/03/2018	JRC technical reports
												GROW2	Impact evaluation of structural reform measures	Conditionally on the possibility to access suitable data sets, an impact evaluation of selected structural reform measures favouring integration of markets for goods and services among EU Member States, promoting competitiveness, industrial policy measures and/or improving the business environment will be carried out. According to the scope of the policy, the study will be country/sector-specific and/or take an EU-wide perspective. Moreover, cross country comparisons will be attempted.	30/11/2018	JRC technical reports
												GROW3	Analysis on competitiveness or entrepreneurship	Conditionally on the possibility to access suitable data sets, an econometric study on enhancing SME competitiveness in the EU and its Member States, with a specific focus on SMEs, and/or policy measures that promote entrepreneurship and facilitate the creation of start-ups will be carried out. According to the scope of the policy, the study will be country/sector-specific and/or take an EU-wide perspective. Moreover, cross country comparisons will be attempted.	19/12/2018	JRC technical reports
661 - COIN JRC.I.1	3961 - COIN_GROW Monitoring the national implementation of the Small Business Act	The Small Business Act for Europe (SBA) reflects the European Commission political will to recognize the central role of SMEs in the EU economy and puts into place a comprehensive SME policy framework for the EU and its Member States. The objectives of this workpackage are: (a) to design one (or more) composite indicator(s) to monitor the national implementation of the Small Business Act (SBA) for Europe, (b) to define and analyse clusters of Member States according to SBA performance, (c) to compare the SBA framework of indicators established for the EU to the World Bank's Doing Business framework.	JRC.I.1 Michaela SAISANA	4.1.a	GROW	GROW	Ludger ODENTHAL	RTD		01/02/2016 31/01/2018	CON-AA	201801	SBA Factsheets 2017 - Main conclusions	The note will include the main conclusions and recommendations on the refinements made to the SBA thematic indicator and an update of the cluster analysis and the econometric analysis.	31/01/2018	JRC contributions to policy documents

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
433 - SciNANO JRC.F.2	4200 - OPEN-NANO-LAB Opening JRC Nanobiosciences laboratories to scientists and industry for R&D	Key Enabling Technologies (KETs) underpin innovation, growth and job creation in many industrial sectors. The JRC has in the recent years built up state-of-the-art laboratories that are ideal for the characterisation of nanotechnology based advanced materials, including nanomedicines and nanosystems for health application. These laboratories will be made available to researchers and industry (especially SMEs) and will be associated to the European Strategic Forum for Research Infrastructures. Access will be granted through open calls, and proposals will be evaluated by a Selection Panel, with priority topics being defined by a Steering Committee. JRC staff will provide expert assistance to visiting users. The WPK supports the Commission priorities for jobs, growth and a stronger industrial base, by promoting innovation, in particular in advanced technology industries, such as health, energy and security. It will have a positive impact on normative developments, in particular in the health sector.	JRC.F.2 Pascal COLPO	4.1.a	GROW	JRC	Marzena Rogalska, DG GROW Unit C1	CNECT ENV RTD SANTE	CEFIC - European Chemical Industry Council (CEFIC) Chem Cos Pharm Food Agri EU - Competent Authorities of EU Member States Chemicals, Cosmetics, Pharmaceuticals, Food, and Agrochemicals Industry EFPIA - European Federation of the Pharmaceutical Industries and Associations (EFPIA) EMA - European Medicines Agency (EMA) ERC - European Research Council (ERC)	01/06/2017 30/06/2020	INS-UR	11	Operation of the Open Nano-Lab 2019	This deliverable will summarize the 2019 Open-Nano-Lab activity including details of the calls for proposals, the selection and the implementation of the open access projects, and a summary of scientific outputs. In addition to the main report the deliverable will be associated with more detailed technical documents describing the motive for the experiments, planning and experimental design, achievements and conclusions of each granted access. When appropriate project results will be submitted for joint scientific publications with users, as additional scientific outputs linked to the deliverable.	15/12/2019	JRC technical reports
												2260745	Operation of the Open Nano-Lab 2020	This deliverable will summarize the 2020 Open-Nano-Lab activity including details of the calls for proposals, the selection and the implementation of the open access projects, and a summary of scientific outputs. In addition to the main report the deliverable will be associated with more detailed technical documents describing the motive for the experiments, planning and experimental design, achievements and conclusions of each granted access. When appropriate project results will be submitted for joint scientific publications with users, as additional scientific outputs linked to the deliverable.	01/06/2020	JRC technical reports
												9	Operation of the Open Nano-Lab 2018	This deliverable will summarize the 2018 Open-Nano-Lab activity including details of the calls for proposals, the selection and the implementation of the open access projects, and a summary of scientific outputs. In addition to the main report the deliverable will be associated with more detailed technical documents describing the motive for the experiments, planning and experimental design, achievements and conclusions of each granted access. When appropriate project results will be submitted for joint scientific publications with users, as additional scientific outputs linked to the deliverable.	15/12/2018	JRC technical reports
341 - Reference Materials JRC.F.6	4281 - CONSTRUCT Validation of standards for construction materials	Some Member States are introducing national requirements for emissions from construction materials which creates new barriers to trade. Further, there is no coherence in test methods used which makes comparison of performance levels and/or test results very difficult. DG GROW has requested the JRC to support a CEN mandate on test methods for construction material by organising the method validation in order to obtain standardised methods which have a higher level of reproducibility and reliability not only with regard to national test methods but also to international standards (e.g. ISO) thus making the European standards more competitive at global level.	JRC.F.6 Andrea HELD	4.1.a	GROW	GROW	Manfred FUCHS (GROW C1)		CEN - European Committee for Standardization	11/03/2016 10/09/2019	CON-AA	10	Progress report to DG GROW	Intermediate progress report to DG GROW summarising the work undertaken in the first year of the administrative arrangement	10/03/2018	JRC technical reports
												20	First report to CEN/TC351	First report with evaluated data of stage I of the validation delivered to CEN/TC351	10/03/2018	JRC contributions to standards
												30	Validation of methods for construction materials	In the frame of the administrative arrangement with DG GROW the JRC will coordinate the validation of methods developed by CEN/TC351. A report with the validation data (stage II) will be delivered to the technical committee and a final report will be delivered to DG GROW.	10/03/2018	JRC contributions to standards
190 - PRESERVE JRC.C.4	4440 - EMILE S&T Support to the Preparation and Implementation of the LDV and HDV legislation	The Work package focuses on providing technical and scientific support to DG-GROW for the development of the European emissions legislation concerning L-category vehicles, light duty vehicles (M and N category) and heavy duty vehicles. This in particular includes the development/fine tuning of the new Real Driving Emission (RDE) legislation, the review of the Euro VI provisions for heavy duty vehicles with specific focus on cold temperatures and on-road particle emissions, the contribution to the environmental effect study of the Euro 5 step for L-Cat vehicles. The AA also foresees a series of tests on vehicles available on the market to check the impact of the RDE regulation on actual emissions of passenger cars and to identify any potential shortfall of this piece of legislation in order to prepare corrective measure if needed. The specific tasks are defined in the technical annex to the Administrative Arrangement. This work package focuses mainly on specific immediate policy needs and is complemented by an institutional one (WP 659) which includes more looking forward activities with a broader scope.	JRC.C.4 Giorgio MARTINI	4.1.a	GROW	GROW	Panagiota Dilara (DG GROW C4)			01/06/2016 31/12/2018	CON-AA	1	Final Report	Final report describing all the work carried out in the context of the Administrative Arrangement.	18/12/2018	JRC technical reports
219 - Photovoltaic Energy JRC.C.2	4540 - ESTI-TPW European Solar Test Installation Third Party Work Contracts	European Solar Test Installation (ESTI) is a European reference laboratory for the verification of the power and energy generation of PV devices. The lab has a Type "A" Liaison with the International Electrotechnical Commission and is fully accredited under ISO 17025. One of its activities is to provide a commercial calibration service for reference devices and for innovative technologies. This work package is dedicated to such work performed under ESTI price list contracts (see Ares(2016)694526 - 09/02/2016).	JRC.C.2 Harald MUELLEJANS	4.1.a	GROW	n/a	n/a		- EUROPEAN PHOTOVOLTAIC INDUSTRY ASSOCIATION	08/04/2016 31/12/2018	CON-TW	1801	State of the Art for Solar Energy Production	This is an annual report that a) provides an update on the adequacy of measurement methods used to assess the electrical performance of PV products and prototypes. b) verifies the status of ESTI's unique independent traceability chain for irradiation measurements c) summarises results of calibrations performed for EU industry and research organisations, as well as benchmarking activities with peer external organisations.	30/11/2018	Science-for-policy reports
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	4640 - EFIResources Resource Efficient Construction towards Sustainable Design	The main goal of this project is the development of a performance-based approach and model for sustainable design, which enable to assess the efficient use of resources in buildings throughout the complete life cycle of the building, and to comply with the design rules and reliability provisions of the Eurocodes. The JRC provides scientific & technical support to DG GROW in the area of policies and standards for sustainable construction, including the Eurocodes. In this context JRC accumulated expertise and vision for further steps to be performed at European Level, needed to successfully supervise the study. The JRC develops a database with case studies on resource efficient construction to be used in the work on the project. At the same time, the planned research will enrich the JRC contribution to the analysis of technical & standardisation needs to better address resource efficient construction & renovation, and contribute to the promotion of best practices & available technologies	JRC.E.4 Silvia DIMOVA	4.1.a	GROW	RTD	Fulvia RAFFAELLI	ENV	REA - Research Executive Agency of the European Commission	01/09/2016 31/08/2018	CON-IA	3	Approach to sustainable design	An approach to sustainable design of buildings will be developed, consistent with the Eurocodes. The environmental performance of a building, focusing on the indicators for resource efficiency previously selected (Deliverable 2), will be compared with a target performance based on the benchmarked values. The distance to the target value will be considered as an estimate of the resource efficiency achieved.	30/05/2018	JRC technical reports
												4	Recommendations and guidelines for sustainable design of buildings	A set of recommendations and guidelines to foster research, standardization and design practice for resource efficient and safe design of buildings, will be defined.	31/08/2018	Science-for-policy reports
190 - PRESERVE JRC.C.4	4845 - REDEEM Real driving emissions of new diesel vehicles	The overall objective of this Administrative Arrangement is to gain targeted independent evidence and assessments about the sector's progress in reducing real driving levels of air pollutants exhaust emissions in new vehicles put on the EU market. Efforts will focus on testing and assessing the most popular new diesel models on the market, as these are assumed to contribute most to total emissions, especially in urban areas. This will provide further technical input to vehicle emissions policy considerations by the Commission, particularly in relation to considerations towards setting up a voluntary system for identification of low emission vehicles. Furthermore it will provide a better indication of the current state of real drive emissions to the Commission and the public at large. DownToTen will seek to develop a reliable and robust methodology to enhance the regulatory approach in the assessment of particle number emissions in the sub 23nm region (down to at least 10nm), focusing on state-of-the-art automotive powertrains with direct injection gasoline engines, but also diesel ones, under real-world operation conditions. To this end, DownToTen will first investigate and quantitatively describe the nature and the characteristics of nanoparticles <23 nm (formation, origin, physical and chemical character), and will set up a synthetic aerosol bench for fundamental studies at instrument level for the facilitation of metrology and evaluation purposes. Existing, proposed and under development instruments will be evaluated against rigorous criteria for the measurement of sub 23 nm particles, with emphasis on their applicability as portable emissions systems (PEMS). The best candidate systems will then be thoroughly tested in a well defined set of criteria and under varying conditions of challenging aerosol from a variety of sources, to select the most promising combinations for further usage. At the next steps, a PN-PEMS demonstrator will be selected	JRC.C.4 Maria ASTORGA-LLORENS	4.1.a	GROW	ENV	ZLATKO KREGAR			01/01/2017 31/12/2018	CON-AA	2	Emission factors	Report including: the emission factors determined, relevant post-processing after vehicle testing, and a comparison procedure to ensure consistency for all vehicles.	31/12/2018	JRC technical reports
190 - PRESERVE JRC.C.4	4847 - DownToTen Measuring automotive exhaust particles from 10 nm	DownToTen will seek to develop a reliable and robust methodology to enhance the regulatory approach in the assessment of particle number emissions in the sub 23nm region (down to at least 10nm), focusing on state-of-the-art automotive powertrains with direct injection gasoline engines, but also diesel ones, under real-world operation conditions. To this end, DownToTen will first investigate and quantitatively describe the nature and the characteristics of nanoparticles <23 nm (formation, origin, physical and chemical character), and will set up a synthetic aerosol bench for fundamental studies at instrument level for the facilitation of metrology and evaluation purposes. Existing, proposed and under development instruments will be evaluated against rigorous criteria for the measurement of sub 23 nm particles, with emphasis on their applicability as portable emissions systems (PEMS). The best candidate systems will then be thoroughly tested in a well defined set of criteria and under varying conditions of challenging aerosol from a variety of sources, to select the most promising combinations for further usage. At the next steps, a PN-PEMS demonstrator will be selected	JRC.C.4 Barouch GIECHASKIEL	4.1.a	GROW	RTD	Panagiota DILARA			01/10/2016 30/09/2019	CON-IA	1	Proposal for measurement of particle emissions	Contribution to the proposal for a robust PN emissions measurement procedure for both laboratory and RDE conditions; the main target of the method will be to take into account the potentially different particle characteristics of state-of-the-art automotive powertrains (i.e. existence of particles <23nm), without compromising the measurement repeatability and reproducibility for regulatory purposes	30/06/2019	JRC technical reports
190 - PRESERVE JRC.C.4	4851 - PaREGEN Particle Reduced, Efficient Gasoline Engines	PaREGEN addresses the short term scope of the GV-02 call via research into and the innovation of gasoline engines for light duty vehicles. Specifically, engines used in mid to premium passenger cars will be addressed. Through using state of the art techniques, like optical engines, modelling & simulation tools (for new control strategies or understanding particle formation) and applying new engine componentry, the optimal trade-off between efficiency & emissions will be found. Of attention will be the control of particle numbers between 10 to 23nm. This learning will be used in two, manufacturer lead vehicle demonstrations. These demonstrators will use downsized engines not yet on the market. The two approaches will use different combustion, dilution, fuel injection, boosting and aftertreatment systems. Completion of the project will show the way forward to a 15% CO2 reduction along with real driving emissions limits. As well as improving EU competitiveness, a valuable contribution from PaREGEN will be new tools: to benefit engine design, development & control in general, long after project completion. The JRC will contribute to the	JRC.C.4 Giorgio MARTINI	4.1.a	GROW	RTD	Panagiota DILARA			01/10/2016 30/09/2019	CON-IA	1	Contribution to the deliverables of the project	This generic aggregate deliverable includes the following outputs: contribution to interim reports and final report, presentations, participation to workshops etc. directly linked to the project execution.	30/09/2018	JRC technical reports
159 - Waste Management JRC.B.5	4923 - FertilisersCriteria2 Impacts of quality criteria for recovered materials used in fertilising products	This WP assists DG GROW in assessing ex-ante the impacts of European-wide quality criteria for certain recovered materials used in fertilising products under the Fertiliser Regulation. The materials covered by the assessment are struvite, biochar and ash-based products. The dimensions of the impact assessment are environment and human health, economy, market and legislation. This WP is closely related to WPK 3321 (FertilisersCriteria1), which covers the development of the technical quality criteria for struvite, biochar and ash-based products.	JRC.B.5 Peter EDER	4.1.a	GROW	GROW	Eric LIEGEOIS	AGRI ENV		01/01/2017 30/11/2018	CON-AA	2	Final report on impacts of quality criteria	Final report on impacts of quality criteria for recovered materials used in fertilising products	30/11/2018	JRC contributions to policy documents
158 - SPC Economics JRC.B.5	4938 - FIGARO ACT I Full International and Global Accounts for Research in Input-Output Analysis Continued Support	The WPK aims at supporting Eurostat in the annual production of EU Multi-country Input-Output Tables and a five-yearly production of EU Multi-country Supply, Use and Input-Output Tables (EU-MC-SUIOTs). This database will support the analyses of the economic, social and environmental consequences of globalisation in the EU by means of studies on competitiveness, growth, productivity, employment, environmental footprints and international trade.	JRC.B.5 Peter EDER	4.1.a	ESTAT	ESTAT	Isabelle REMOND-TIEDREZ	ECFIN ENV GROW TRADE	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2020	CON-AA	3	EU Multi-country Input-Output Tables	Report on supporting the annual production of EU Multi-country Input-Output Tables and a five-yearly production of EU Multi-country Supply, Use and Input-Output Tables.	31/12/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												4	Technical Report on Aging of EV-batteries in view of Vehicle-to-Grid respectively Vehicle-to-Home bidirectional flow	Report in collaboration with C.1: Describes literature and experimental evidence for EV-battery capacity window usable when applying bi-directional power flow between EVs and Smart Homes / Grids without severely shortening the battery cycles per lifetime (avoidance of deep discharge etc.)	30/06/2019	JRC technical reports
167 - EST JRC.C.1	6358 - KIWA-GasTeF JRC research infrastructure - Hydrogen Cycle Tests according to UN R134 for KIWA	The Third Party Work Contract No. 34741 between KIWA Nederland BV (KIWA) and the Joint Research Centre Directorate C Energy Transport and Climate (JRC) refers to the execution in the JRC GASTeF Facility of hydrogen cycle tests according to UN Regulation No. 134 on Type 4 composite reinforced on-board tanks provided by KIWA. The work will consist on the testing of different cylinders following the pneumatic test sequence described at the UN R134 - Global Technical Regulation on Hydrogen and Fuel Cell Vehicles (GTR No.13) sections 5.1.3.2 and 5.1.3.3. It is expected to perform 3 or 4 campaigns of approx. 7 weeks duration each. The campaign's experimental procedure and the test results will be assessed by both KIWA and the JRC and only after positive evaluation the next campaign will be scheduled. The test campaigns will be carried out upon KIWA request. KIWA will supply the test samples (type 4).	JRC.C.1 Beatriz ACOSTA IBORRA	4.1.a	GROW	n/a	n/a			01/06/2017 31/12/2018	CON-TW	KIWA1	Tests for KIWA NL BV	This deliverable consists in the execution of pneumatic cycling tests aiming at on-board hydrogen tank certification according to GTR No. 13, clause 5.1.3.2 and 5.1.3.3. Upon completion of the test campaign(s) JRC will issue a report to KIWA	30/11/2018	JRC technical reports
167 - EST JRC.C.1	6359 - SEC Safety of energy storage technologies	This WP supports deployment of energy storage technologies and utilisation of energy carriers through pre-normative research and standardisation work focusing on safety. To balance the commercial interest of industrial stakeholders whilst ensuring public safety, the independence of the JRC is required to support the formulation of standards and to assess the safety of these technologies. A safety assessment of gaseous large scale energy storage (natural gas, hydrogen) will be performed, as well as safety of energy carrier in mobility and energy storage applications. To ensure the overall safety of vehicles equipped with a battery containing flammable electrolyte, vehicle occupants should not be exposed to hazardous environments resulting from battery thermal propagation. In the context of the Phase 2 of the Global Technical Regulation on Electric Vehicle Safety (GTR EVS), experts have acknowledged the safety risks associated with short circuiting and release of material from batteries and recognise that regulatory coverage is of crucial importance. As co-chair of the UNECE Informal Group DG GROW has solicited JRC's continued support to the development of the GTR EVS. Research performed in this WP complements the research performed in WP BaTProp. Safety of fuel cell electric vehicles is covered by Global Technical Regulation on	JRC.C.1 Lois BRETT	4.1.a	GROW	JRC	n/a	MOVE	EUROBAT - Association of European Automotive and Industrial Battery Manufacturers UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE US DoE - US Department of Energy (DOE)	01/01/2016 31/01/2019	INS-RS	SEC01 SEC02	Report on safety of selected energy carriers Contributions to global technical regulation (GTR) drafts on type approval of hydrogen and electric vehicles	Report on safety of energy carriers with focus on the alternative fuels covered by the alternative fuels infrastructure deployment directive. The report will consist of a review of the current status and identification of gaps on safety for the various applications, such as automotive, maritime, rail and aviation. Whenever possible, results of the underpinning scientific work will be published in peer-reviewed scientific journals. S&T support, upon request of DG GROW. This deliverable consists of: a) Provision to DG GROW of expert technical advice, especially on safety aspects of hydrogen and battery electric vehicles b) Verification of selected testing procedures. c) Contributions to the preparation of the informal draft GTR. This work is based on the already established modus operandi adopted for the first phase of HFCV and EV GTRs. Whenever possible, results of the underpinning scientific work will be published in peer-reviewed scientific journals.	31/12/2018 31/01/2019	JRC technical reports Science-for-policy reports
145 - Global IRI-TEC JRC.B.3	6366 - KeyTER Key Enabling and Emerging Technologies for Territorial development and Competitiveness	Analysis of the capability of the EU to develop new technologies which are critical to the transformation of strategic industries and to the emergence of new ones. The aim is to better understand how technical solutions emerge and spread across different technologies, territories (at the sub-national level) and strategic knowledge based industries. It builds on the analysis of economic, R&D and patent data of top companies in the EU, their localisation and interaction with local/regional innovation actors/policies and their benchmark against worldwide competitors. A particular focus will be put on the analysis of key enabling and advanced manufacturing technologies for the modernisation of the EU industry. Patent analysis will be complemented with expert insight on selected industries, as well as with cross-analysis on regional innovation strategies and actors.	JRC.B.3 Alexander TUEBKE	4.1.a	GROW	JRC	n/a	CNECT REGIO RTD	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2019	INS-RS	1 2	2018 Report on Keyter activities 2019 Report on Keyter activities	2018 Report on Keyter activities 2019 Report on Keyter activities	31/12/2018 31/12/2019	Science-for-policy reports Science-for-policy reports
7650 - SEF2018 JRC.B.7	6427 - SEF_KM Scale ups and future of work - KM	The WP will consolidate the project work on policies facilitating access to finance and progressively add other policy areas (entrepreneurship policies and human capital policies). It will support the JRC project on the future of work (through a scoping review of literature and analysis of the policy responses) given the importance of scale ups for the creation of new employment. The work would involve the creation of a community of practice within JRC and subsequently open to all EC DGs focused on the work on high growth innovative firms/scale ups (in partnership with DG GROW). The JRC-lead research CoP would support with evidence a more policy-driven, already active Connected group on the Start-up and Scale-up Initiative (SUI) led by GROW or merge with it if suitable. The WP will foster established and new cooperations with leading research institutions (e.g. World Bank and OECD, EIB research arm, NESTA); curation of existing evidence on HGIE (project evidence, other JRC units' evidence incl. notably B1, B3 and B6 as well as outside evidence. It would also include dissemination of the results of the project in carefully chosen workshops, conferences and online communities. It would aim at reaching a wide array of stakeholders: industry through networks and associations such as the EBN Innovation Network, the European Enterprise Network, academia (also through dedicated small contracts with leading researchers in the field), policy makers (line policy DGs, Member States and regions) and interested citizens' initiatives (e.g. scale up and start up associations). Building on the 2016-2017 work, the policy analysis will also involve the continuation of t assessment of the effect of EU-level support instruments on young innovative companies' growth (H2020 SME	JRC.B.7 Katarzyna SZKUTA	4.1.a	GROW	JRC	n/a			01/01/2018 31/12/2019	INS-RS	SEFKM1 SEFKM2 SEFKM3	Public policies supporting high growth innovative enterprises Impact of HGIE support. Evidence from evaluations synthesis Impact of HGIE support. The evidence from SME instrument	This report will provide an overview of the effects of facilitation of access to finance and human capital policies to support fast growth of young innovative enterprises. It will consolidate the work on HGIE carried out in 2016-2018 that is based on the novel evaluation synthesis methodology (a systematic procedure for organizing findings from several disparate evaluation studies, which enables evaluators to gather results from different evaluation reports). The evidence for national and European policy instruments' effectiveness and economic impact on beneficiary companies was analysed in 2016-2017 and will be synthesised in a way to give indications on how to optimize their design. It will both provide an analysis of the EU policies' effectiveness and the national/regional policies taking into account their local institutional setting. Led by B7 with a contribution from B6 and B3. The report will be accompanied with a succinct policy brief. The 2016-2018 work on HGIE will be translated into two/three academic papers that will be presented at leading scientific conference and submitted to leading journals (e.g. Research Policy, Industrial and Corporate Change). The results will be presented in a short JRC Science for Policy Report co-authored by the B7, B3 and B6 units. The appropriate scope and suitable publication outlet for a scientific publication will be also chosen after a careful considerations based on the preliminary results (e.g. Research Policy).	31/10/2018 30/06/2018 31/10/2018	Science-for-policy reports Article contribution to periodicals or to conference proceedings listed in SCOPUS Science-for-policy reports
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	6501 - SPSS-C1 Support to policies and standards for sustainable construction Y1	The work planned is under Administrative Arrangement DG GROW on support to policies and standards for sustainable construction. The planned tasks are focused on: 1. Further harmonization and evolution of policies and technical tools in the field of sustainable construction: +IT support for the implementation and monitoring of the Eurocodes and other policies/tools +Facilitating the practical implementation and harmonized use of the Eurocodes and other policies/tools +New fields of application (adaptation of structural design to climate change, design of underground structures, technical needs for resource efficient construction,...) 2. Promotion of the construction sector outside the EU: +Fostering and coordinating promotion of the Eurocodes, European energy efficiency and resource efficiency policies and tools outside the EU The work will be performed in synergy with B.5 and E.1.1 units and in collaboration with Disaster Risk	JRC.E.4 Silvia DIMOVA	4.1.a	GROW	GROW	n/a	CLIMA DEVCO ENV NEAR		01/07/2018 30/06/2019	CON-AA	1 323	Report on the state of policies and standards for sustainable construction -2019 State of harmonized use of the Eurocodes	The deliverable summarises the main achievements in the JRC work on the Administrative Arrangement with DG GROW (2018-2019). It encompasses the four contractual deliverables: Report on the maintenance of the Eurocodes IT tools; Report on the state of implementation and harmonized use of the Eurocodes; Report on the activities and findings in the new fields of application; Report on the activities and state of the promotion of the construction sector outside EU. The report implements the Commission Recommendation 2003/887/EC, which requires comparison of the NDPs accepted by the different Member States and assessment of the technical differences due to choice of NDPs. It summarises the results of the JRC work on the analysis of the NDPs chosen by the EU Member States and on the reliability levels of design achieved. The results will be basis for a decision by DG GROW on the need of a new Commission Recommendation.	30/06/2019 20/12/2018	JRC technical reports JRC contributions to standards
661 - COIN JRC.I.1	6506 - COIN-GROW II Monitoring the national implementation of the Small Business Act II	The Small Business Act for Europe (SBA) reflects the European Commission political will to recognize the central role of SMEs in the EU economy and puts into place a comprehensive SME policy framework for the EU and its Member States. The objectives of this workpackage are: (a) to design one (or more) composite indicator(s) to monitor the national implementation of the Small Business Act (SBA) for Europe, (b) to define and analyse clusters of Member States according to SBA performance to derive realistic as well as ambitious enough benchmarks for EU Member States, and (c) to assess the effects of the Small Business Act on main economic outputs (namely value added and employment) of SMEs. This work is a continuation of the AA 34144.	JRC.I.1 CLAUDIA GHISETTI	4.1.a	GROW	GROW	n/a	RTD		01/02/2018 30/01/2020	CON-AA	201801 201901	Small Business Act Principles Scoreboard 2018 Small Business Act Principles Scoreboard 2019	The JRC report will describe the development of the SBA thematic indicator and an analysis as to whether an overall index of the ten SBA principles is meaningful. It will include the literature review and the technical steps undertaken to develop the composite indicator(s) and eventually a cluster analysis. The report will also investigate how SBA framework is related to the main indicators that measure countries' economic structural indicators. The basis of the analysis will be the 9 dimensions of the SBA framework as well as the main structural economic indicators on SMEs such as the number of enterprises, the number of employees and the value added. The findings will help to shed light on the inter-linkages between SBA framework on the one side and economic indicators on the other. The JRC report will describe the development of the SBA thematic indicator and an analysis as to whether an overall index of the ten SBA principles is meaningful. It will include the literature review and the technical steps undertaken to develop the composite indicator(s) and eventually a cluster analysis. The report will also investigate how SBA framework is related to the main indicators that measure countries' economic structural indicators. The basis of the analysis will be the 9 dimensions of the SBA framework as well as the main structural economic indicators on SMEs such as the number of enterprises, the number of employees and the value added. The findings will help to shed light on the inter-linkages between SBA framework on the one side and economic indicators on the other.	30/10/2018 30/10/2019	JRC technical reports JRC technical reports
167 - EST JRC.C.1	7262 - UNGRHy UNECE GTR HFCV Expert Contribution	The aim of this Administrative Agreement is to support the development of hydrogen safety provisions within the scope of Phase 2 of the GTR No.13. JRC will analyse critical technical issues with the objective of revising the applicable test methods, or establishing new ones where appropriate. In this context the JRC will gather conclusions from relevant European research activities and generate experimental data using its High Pressure Gas Testing Facility (GasTeF) for testing compressed hydrogen storage systems.	JRC.C.1 Beatriz ACOSTA IBORRA	4.1.a	GROW	GROW	n/a	MOVE RTD	UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE US DoE - US Department of Energy (DOE) - FUEL CELLS AND HYDROGEN JOINT UNDER	28/02/2018 27/02/2021	CON-AA	GTRH2P	Scientific and technical analysis on topics relevant to Phase 2 of GTR on HFCV	Scientific support and advice to DG GROW to support the development of hydrogen safety provisions within the scope of Phase 2 of the UNECE GTR No. 13: - In agreement with GROW C.4, provision of S&T analysis as input to the Informal Working Group Meetings and, when relevant, will provide additional assessment on proposals made by other stakeholders. - When appropriate execution of experimental tests using GASTeF facility to address / corroborate technical issues relevant to the Phase 2 of the GTR No.13 and to verify suitability of the suggested test methods.	26/02/2021	JRC contributions to policy documents
4.1.b space strategy - provide support for Galileo and the European global navigation satellite systems, including signal, receivers and technical support for policy development and the management of R&D assets and resulting intellectual property rights; provide technical support for applications, implementation and further development of services, including Galileo Public Regulated Service and security, spatial information analysis and data dissemination																
564 - CESAR	750 - EOSS Earth Observation Support to	EOSS supports the EU long-term objective to guarantee accuracy and reliability of information on marine environment and security. It consequently contributes to benefiting from the huge Copernicus investment in Earth Observation (EO) technology and space missions. Specifically, within the context of the Copernicus Marine Environment Monitoring Service and of the marine component of the Climate Change Service, EOSS ensures policy support and science deliverables through: I. Access and application of highly accurate in situ reference data for the permanent calibration and validation (cal/val) of marine EO data products by relying on consolidated know-how, laboratories and distributed infrastructures allowing to perform autonomous measurements at a number of fixed sites in European seas and manned measurements through oceanographic campaigns in collaboration with Member States; II. Standardization of field and laboratory measurement methods for the generation of highly accurate in situ data by focusing on the reduction of uncertainties through the comprehensive characterization and calibration of instruments; III.	JRC.D.2	4.1.b	GROW	JRC	Maria FACCHINI	CLIMA ENV	- EUROPEAN SPACE AGENCY NIST - National Institute of Standards and Technology CEOS - Committee on Earth Observation Satellites (CEOS) EUMETSAT - European Organisation for the Exploitation of Meteorological Satellites	01/01/2016	INS-PS	201801	Fitness-for-Purpose of Copernicus EO Marine Climate Data	The Technical Report will summarize results from the assessments of Copernicus EO ocean color (including Sentinel-3) climate and environmental data products at global and regional scales, with emphasis on European Seas and the Arctic Ocean. Results will comprise analyses from: i. comparisons with state-of-the-art in situ reference measurements from autonomous systems and occasional oceanographic activities, all performed in collaboration with Member States and applying standardized methods; ii. comparisons with Climate Quality EO data, performed in a BigData context, with emphasis on marine algal biomass, productivity and water quality for climate and ecosystem applications; iii. radiative transfer simulations and bio-optical modelling focusing on the quality of regional marine products in areas of political and economic relevance, but characterized by challenging observation conditions; iv. comprehensive quantification of uncertainties affecting both EO and in situ reference data.	31/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
JRC.D.6	Copernicus Climate and Marine Services	Generation of EO state-of-art ocean colour reference data sets of Essential Climate Variables (ECV) by composing multi-mission EO data products accounting for carefully quantified uncertainties; IV. Assessment of EO marine data candidate to the creation of Climate Data Records (CDR) through direct comparisons of EO and in situ data, and with the aid of radiative transfer simulations; V. Development and application of advanced statistical methods to evaluate ocean biosphere variability and trends through the application of EO data products. EOSS activities at large will benefit of the JRC representation in international organizations and additionally of collaborations supported by agreements with international institutions and agencies. It is restated that the EOSS activities are fundamental to ensure confidence in Copernicus EO data products and to support the international effort to create CDRs from multi-mission EO data, both essential for policy makers. It is finally mentioned that presently no EU institution has the same level of know-how and infrastructure for an equivalent comprehensive execution of the work-package.	Giuseppe ZIBORDI					ENV	(EUMETSAT) GCOS - Global Climate Observing System (GCOS) NASA - NASA - National Aeronautics and Space Administration NOAA - National Oceanic and Atmospheric Administration	31/12/2019		201901	Fitness-for-Purpose of Copernicus EO Marine Climate Data	In agreement with the need for continuous calibration and validation of Copernicus EO data products, a Technical Report will further assess the fitness-for-purpose of ocean color climate and environmental data products. Specifically, the Report will summarize achievements on the assessment of EO data products at different geographic and temporal scales for the European Seas and the Arctic Ocean. Results will include: i. comparisons with time-series of in situ reference measurements performed in various seas in collaboration with Member States; ii. analyses of EO multi-mission CDR data addressing carbon cycle studies for climate and environmental applications; iii. analyses resulting from radiative transfer simulations targeted to system vicarious calibration of the space sensor and bio-optical modelling centered on the improvement of satellite products in coastal regions; iv. experimental and theoretical quantification of uncertainties affecting both EO and in situ reference data.	31/12/2019	JRC technical reports
346 - GALILEO JRC.E.2	848 - GALINNOVA Innovative Solutions to Support the EU Navigation Programmes	In application of the Reg. (EU) No 1285/2013, DG GROW, Dir J, is responsible for the management of the EU GNSS programmes, Galileo and EGNOS. JRC will continue to develop its know-how and expertise to support these two Programmes carrying out technical studies and measurement campaigns to support the development of services and of technologies relevant to Galileo and EGNOS. This WPk will be developed in close collaboration with the partners of DG GROW, Dir J, and will include specific support to activities such as the study of robust approaches for improving GNSS resilience. An additional objective of the WP is the anticipation of future policy needs in the EU GNSS programmes. In this respect, approaches complementary to GNSS will be investigated and the integration between GNSS and technologies such as chip-scale inertial devices will be analysed. Both statistical and combinatorial approaches will be considered. Potential issues and needs for legislative intervention on the exploitation of new navigation and positioning devices and new techniques for the integration of GNSS data will be investigated. In this respect, the integration of different technologies is considered fundamental for improving the resilience of EU GNSSs. This WP targets the scientific excellence in selected strategic topics of interest to the GNSS Programmes, which may lead to operational policy support activities. This scientific excellence will be achieved through technical and experimental work. Finally, the JRC will continue to contribute to joint educational and outreach activities (ESA/JRC Int'l GNSS Summer School).	JRC.E.2 Carlo FERIGATO	4.1.b	GROW	JRC	Matthias PETSCHKE	CNECT ENER HOME	- EUROPEAN SPACE AGENCY EUROCONTROL - European Organisation for the Safety of Air Navigation (EUROCONTROL) GSA - European GNSS Agency	01/01/2017 31/12/2019	INS-RS	D1	Policy options for new navigation and positioning	In the near future, the development of precise chip-scale devices for timing and inertial navigation will reach a cost-effective trade-off. This will be sufficient for a wide commercial exploitation. This report will investigate potential issues and needs for legislative intervention on the exploitation of these new navigation and positioning devices including new techniques for the integration with satellite data. The commercial availability of these new devices will be monitored for the whole	31/12/2019	Science-for-policy reports
												D3	ESA/JRC International GNSS summer school -2018	The JRC will continue co-organizing the ESA/JRC summer school on GNSS. The deliverable will consist of the organization of this annual event and of the preparation of lectures and labs.	30/09/2018	Training
												D4	ESA/JRC International GNSS summer school -2019	The JRC will continue co-organizing the ESA/JRC summer school on GNSS. The deliverable will consist of the organization of this annual event and of the preparation of lectures and labs.	30/09/2019	Training
												D8	Integration of GNSS and inertial measurements	A survey on new commercial devices exploiting modern physics concepts and their reliability with respect to GNSS navigation will be conducted. Data integration strategies will also be investigated with techniques from robust statistics.	31/12/2018	JRC technical reports
												D9	Position resilience using GNSS	A demonstrator able to effectively integrate different data types from GNSS, inertial and opportunistic sources will be developed. The demonstrator will provide insight on the level of resilience which may be achieved integrating different data sources.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
346 - GALILEO JRC.E.2	861 - GALSPACE Underpinning the adoption of the Galileo and its ionospheric correction model	JRC will continue to develop its know-how and expertise to support the EU Global Navigation Satellite Systems (GNSS) Programmes assessing the impact of ionospheric disturbances, underpinning the adoption of the Galileo ionospheric model Nequick-G, assessing the present backup radionavigation aids available across the EU, and facilitating the access to the JRC's GNSS testing facilities to Commission's R&D Actions, Member States and other interested third parties. This WP will address three main priorities: 1) Noting that the ionosphere is the major source of positioning errors that are greatly corrected using correction models, JRC will maintain and upgrade an in-house reference software (SW) implementation of the Nequick-G model developed under a JRC's Proof of Concept project, making it publicly available to the community of receiver manufacturers. JRC will continue to monitor and evaluate EC R&D Actions implementing ionospheric forecasting services to be transferred to the Galileo Service Centre. JRC will continue to investigate novel uses of SW radio platforms to monitor and record GNSS observations during severe ionospheric disturbances. JRC will maintain and operate a network of monitoring stations located in the Equatorial and Polar Regions. JRC will continue to upgrade and maintain an online reference library of ionospheric scintillation datasets. JRC will continue its collaboration with NOAA investigating the impact of space weather related ionospheric disturbances. 2) In the framework of the present implementation of Commission's Space Strategy, JRC will identify potential synergies between the EU GNSS Programmes and other Commission initiatives such as the Copernicus Programme (Regulation (EU) No 377/2014), defined as "Europe's eyes on Earth", aims to monitor the global environment for civil protection and security, and to maximise socio-economic benefits and growth (Art. 4). Fully supporting the role of the Commission in the governance of Copernicus (Art. 9), this WPk ensures the implementation and further evolution of the Global Land Component of the Copernicus Global Land Service, especially addressing needs for the Sustainable Development Goals (SDGs), food security and international initiatives such as Reducing Emissions from Deforestation and Forest Degradation* (REDD+) as well as applications and analysis tools. Technical support to the mid-term evaluation of the Copernicus Programme is foreseen, as required in the Regulation by the end of 2017. The WPk maintains and reinforces relationships with third countries and international organisations (as required by the Regulation), and contributes to the development of the new "European Strategy for International Relations in Space".	JRC.E.2 Joaquim FORTUNY GUASCH	4.1.b	GROW	JRC	Matthias PETSCHKE	CNECT HOME MOVE	- EUROPEAN SPACE AGENCY EUROCONTROL - European Organisation for the Safety of Air Navigation (EUROCONTROL) GSA - European GNSS Agency NOAA - National Oceanic and Atmospheric Administration	01/01/2017 30/12/2019	INS-RS	D10	Network of monitoring stations and cooperation NOAA	The JRC will continue to maintain and operate a network of ionospheric scintillation stations in sites located in the Equatorial Region and in Antarctica. Efforts will continue aimed at continuing the cooperation with NOAA under the current Implementation Agreement. A progressive optimization and upgrade of the data collection hardware will continue to make it more efficient and capable of detecting and classifying events automatically.	14/12/2018	Technical systems
												D11	Operation, maintenance and upgrade of GNSS testing facilities	JRC's GNSS testing facilities are currently being made accessible to third parties including: Project Consortia running R&D Projects under the EU GNSS Programmes and GNSS receiver/antenna manufacturers. Additionally, JRC will use these facilities to conduct testing campaigns in the context of ad-hoc technical studies agreed with DG GROW. JRC will continue to maintain and upgrade the EMSL and GNSS laboratories, which are instrumental facilitators of the work under all the WPs of the Galileo.	30/12/2019	Technical systems
												D9	Validation and deployment of ionospheric prediction service	GROW tasked JRC to monitor the progress and review an H2020 project developing an ionospheric prediction service (IPS). In this context, JRC has agreed to complete a validation of the forecasting products delivered by the H2020 project prior to its planned deployment at the Galileo Service Centre. After this validation phase, JRC will then support the transfer of the forecasting products to the Galileo Service Centre such that they become fully operational. A technical report summarising the results of the validation campaign at JRC and the support to the deployment of the forecasting products at the Galileo Service Centre will be produced	15/12/2019	JRC technical reports
564 - CESAR JRC.D.6	900 - SPACE-CIS Space Policy and support to the Implementation of the Copernicus Climate and Global Land Services	The project will develop: a robust generic system for the QA of satellite and in-situ algorithms and data records that can be applied to all ECVs in a prototype for future sustainable services in the frame of the GMES/Copernicus Climate Change Service; multi-use tools and SI/community reference standards; quality-assured multi-decadal Climate Data Records for 3 atmospheric ECV precursors (NO2, HCHO, and CO) and 3 land ECVs with full uncertainty metrics for every pixel ready for model ingestion.	JRC.D.6 Michael CHERLET	4.1.b	GROW	JRC	Mauro Facchini mauro.facchini@ec.europa.eu DDG3 I2	AGRI CLIMA DEVCO ECHO ENV	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) GCOS - Global Climate Observing System (GCOS) GEO - The Group on Earth Observations UNCCD - United Nations Convention to Combat Desertification (UNCCD) UNEP - United Nations Environment Programme (UNEP) WMO - World Meteorological Organization (WMO)	02/01/2017 31/12/2019	INS-RS	201801	Implementation of Copernicus Global Land Service	Implementation of the Global Land Component of the Copernicus Land Service as per the sub-delegation agreement between DG GROW and the JRC, in support of Art.9 of Reg.(EU)No377/2014, and including contract management activities and technical and operational activities as specified in Ares(2015)1881967-04/05/2015, section B.c.. This deliverable is linked to WPs CLEO, GMES&Africa and EO&SS@BD (Dir.I).	20/12/2019	Science-for-policy reports
												201802	Evolution of the Copernicus Global Land service	Supporting the Commission on the appropriate evolution and development of Copernicus Services, Reg.(EU)No377/2014-Art.9.4; Potential near-mature products are ramped up to pre-operational stages, building value-chain approaches. Including HR land surface water occurrences, phenological variables, land system productivity and degradation and land cover dynamics. Products support SDGs and international partners such as UNCCD. This deliverable is linked to WPs CLEO, GMES&Africa.	20/12/2019	JRC technical reports
												201803	Relationships with third countries & intern.org.	Supporting the Commission's role on the governance of Copernicus, Reg.(EU)No377/2014-Art.9.2.: reporting & advice to the EU's space dialogues provided through partnerships with space agencies and EO users outside the EU. Input to CEOs, GEO, WMO, GCOS, promoting and providing feedback to the Copernicus Programme on appropriate international engagement. Contributes to the GMES & Africa process by establishing roadmaps to implement thematic action plans & workshops. Links to CLEO, GMES&AF.	20/12/2019	JRC contributions to policy documents
564 - CESAR JRC.D.6	1707 - QA4ECV Quality Assurance for Essential Climate Variables	The project will develop: a robust generic system for the QA of satellite and in-situ algorithms and data records that can be applied to all ECVs in a prototype for future sustainable services in the frame of the GMES/Copernicus Climate Change Service; multi-use tools and SI/community reference standards; quality-assured multi-decadal Climate Data Records for 3 atmospheric ECV precursors (NO2, HCHO, and CO) and 3 land ECVs with full uncertainty metrics for every pixel ready for model ingestion.	JRC.D.6 Nadine GOBRON	4.1.b	GROW	n/a	Mauro Facchini, GROW.I.2	AGRI CLIMA ENV	GCOS - Global Climate Observing System (GCOS) GEO - The Group on Earth Observations WMO - World Meteorological Organization	01/01/2014 31/03/2018	CON-IA	201701	Performance of field protocols (D3.7)	QA of retrieval in-situ protocols for Land ECVs	31/03/2018	JRC technical reports
												201703	QA of land ECVs (D5.4)	Report with quality assessment of Land ECV data products (D5.4)	31/03/2018	JRC technical reports
225 - EO&SS Big Data JRC.I.3	2276 - P4BIDEO Platform for Earth Observation and Social Sensing Big Data Processing	Benchmark, extend, and optimise the prototype platform for analysing the massive Earth Observation (EO) data streams delivered by the Copernicus programme and other free and open data, including in situ and social sensing data. The platform will be tuned to continuously offer both the data collections and processing/analysis capabilities required by selected projects in the Knowledge Production units. The platform shall provide a unique environment for discovery, processing, analysis, and visualisation of the available data and produced information. It will foster knowledge sharing and thus facilitate the collaboration between Knowledge Production and Management units. In a subsequent scaling-up phase, the system will be extended to provide large-scale storage and processing capabilities while populating the input storage space by ingesting data from all relevant data streams of interest to the Knowledge Production units.	JRC.I.3 Pierre SOILLE	4.1.b	GROW	JRC	Andreas Veispak	AGRI CNECT DEVCO ECHO ENER ESTAT MARE REGIO SANTE	CERN - European Organization for Nuclear Research ESA - European Space Agency - Italia EUMETSAT - European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) EUSC - European Union Satellite Centre	01/01/2017 31/12/2020	INS-UR	201801	JEODPP infrastructure and data evolution	This deliverable covers all activities related to the management, benchmarking, optimisation, and evolution of the petabyte storage and processing technical system.	31/12/2018	Technical systems
												201802	Interactive data visualisation and mining	Expand the functions of the interactive geospatial data visualisation, analysis, and mining also including the possibility to integrate data originating from other sectors (cross-sector data and knowledge combination). Link Earth Observation data with social sensing and also with other additional data sources.	31/12/2018	Technical systems
												201803	Big Data from Space conference cycle	Co-organise the Big Data from Space conference cycle with the European Space Agency and the EU Satellite Centre (to be hosted by DLR in Muenchen in Spring 2019).	01/05/2019	Books and monographs with JRC editorship
												201804	Scaling-up the user basis and enlarging the JEODPP scope	Following the successful integration of the initial use-cases, this deliverable will scale-up the user basis of the platform and in turn widen the data portfolio as well as the processing and analysis functionalities of the platform. The users will originate from the knowledge production projects related to geospatial data not involved in the initial prototyping phase. Other users from entities collaborating with JRC will also be considered. In addition, the scope of the JEODPP will be enlarged by considering other applications domains that could benefit from the JEODPP developments. The suitability of deploying selected applications on private and public clouds will also be investigated. For Copernicus data, the deployment of selected applications on the Copernicus DIASes will be tested.	31/12/2019	JRC technical reports
												201805	Transfer of Pilot environments to dedicated Competence Centre	JRC Big Data EO and Social Sensing Node is established as part of the emerging international network of Big Data nodes and called the JRC Earth Observation Data Processing Centre (JEODPC). Stress tests and trials with wider user partner community will be operated throughout the test phase. The JEODPC will serve as a basis for a new competence centre for Spatial data analytics and will be transferred to that new entity. Networking/resources sharing with other big data centres including those envisaged in the Communication from the Commission on the European Cloud Initiative (COM/2016) 178 final).	31/12/2019	Technical systems
		DG GROW has established a number of delegation agreements with the European GNSS Agency (GSA) for the conduct of several tasks (see section II.4 of the GSA Work Programme in attachment). At the same time GROW has requested JRC to provide technical support to GSA under some strategic delegated tasks.									GSA05	Support to GSA - Second Semester 2017	As agreed in the technical annex to the SLA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the first semester of 2017, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/01/2018	Project management related documents/reports identified as outputs of	

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
346 - GALILEO JRC.E.2	3578 - GALGSA Technical and Policy Support to European GNSS Agency (GSA) on EU Satellite Navigation Programmes	Upon this specific request of DG GROW and following on the 2012 JRC-GSA Memorandum of Understanding (in attachment), JRC will provide technical support to the GSA in many different areas. Some relevant examples are: Galileo user segment operational readiness (Galileo receivers testing and validation in JRC labs), H2020 and Galileo Fundamental Elements (definition, evaluation and follow up of the most relevant research calls related to GNSS technology), Galileo Security and PRS (User Segment development, Pilot Projects definition and implementation), Galileo and EGNOS Exploitation (Service provision, system evolution, cooperation with other GNSS).	JRC.E.2 MATTEO PAONNI	4.1.b	GROW	GROW	Matthias PETSCHKE	GSA - European GNSS Agency	24/09/2016 23/09/2019	CON-AA	GSA06	eCall Modules Testing Campaign	The JRC team will perform an extensive testing campaign on eCall modules. The work will include a verification of the technical requirements for compatibility of eCall in-vehicle systems with the positioning services provided by the Galileo and EGNOS systems. In a second phase the complete testing setup will have to be defined, including the receivers under test, the constellation simulator and Labview scripts to allow for an automation of the various testing procedures. Test will assess positioning accuracy in autonomous static mode, in dynamic mode and also for movement in shadow areas, areas of intermittent reception of navigation signals and urban canyons. The automatic chain will allow recording the NMEA messages simultaneously on the different receivers for the three different scenarios.	31/07/2018	JRC technical reports	
											GSA07	Support to Galileo Service Validation	JRC will support the GSA Exploitation Department in the context of Service Validation activities, addressing Signal-In-Space performance (e.g. after a system delivery or service declaration, support a service validation campaign through measurement campaigns at JRC and/or reviewing the results provided by other actors, such as ESA or WP1). Main outcomes of this long-term activity will be documented in one or more JRC Technical Reports.	31/12/2018	JRC technical reports	
											GSA08	Support to PRS user segment development	Within this deliverable JRC will document the technical support provided to GSA under various procurement actions for the development of PRS user segment (GSA P3RS2 and PRISMA projects), as well as the development of a test bed for Server-based PRS applications (DISPATCH project). JRC is providing continuous support to GSA for the technical follow-up of this projects.	31/12/2018	JRC technical reports	
											GSA09	Support to GSA - First Semester 2018	As agreed in the technical annex to the SLA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the first semester of 2018, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/07/2018	Project management related documents/reports identified as outputs of the JRC Work Programme	
											GSA10	Support to GSA - Second Semester 2018	As agreed in the technical annex to the SLA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the second semester of 2018, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/01/2019	Project management related documents/reports identified as outputs of the JRC Work Programme	
											GSA11	Maritime Receivers Testing Campaign	Under this deliverable a testing campaign targeting Maritime navigation and radio communication equipment, including Global navigation satellite systems (GNSS) receivers, and Galileo in particular, will be carried out. The work will include a first phase during which a consultation with the manufacturer will take place and a test plan will be produced. In the second phase, taking place most probably in 2018-2019, the actual testing campaign will be performed.	01/07/2019	JRC technical reports	
											GSA12	Support to GSA - First Semester 2019	As agreed in the technical annex to the SLA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the first semester of 2019, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	01/07/2019	JRC technical reports	
											GSA13	Support to GSA - Second Semester 2019	As agreed in the technical annex to the SLA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the second semester of 2019, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	23/09/2019	JRC technical reports	
541 - SEED JRC.E.1	3805 - FLOODS Supporting resilience to floods at local, national, European and global level	The main aim of the work package FLOODS is to contribute to the evolution and management of the flood early warning component of the Copernicus Emergency Management Service through its European and Global Flood Awareness Systems (EFAS & GloFAS). In addition, the work package enhances the EU's capacity for managing and adapting to flood risks through the analytical support to DG ECHO's Emergency Response Coordination Centre, assessments for DG REGIO's Solidarity Fund or the support to the implementation of the Floods Directive. The work spans the entire risk management cycle (prevention, preparedness, crisis management and recovery) and throughout different stages of the policy cycle (anticipation, implementation and ad hoc support). New research such as large scale data assimilation of satellite observations into flood early warning systems, the pre-activation of satellite mapping based on early warning information, or the incorporation of seasonal forecasts will be done considering the feedback of a large variety of stakeholders through expert meetings, workshops and collaborations. The WP will also perform underpinning research to develop impact-based coastal hazard early warning tools as a measure to increase preparedness for severe flood events and thus reduce the associated risks for the citizens, property and economy. This includes setting up and validating modelling tools for forecasting extreme coastal water levels including the effects of tides, waves and storm surges. These stakeholders range from policy and decision makers (e.g. DG ECHO, ENV, national civil protection), to national and local authorities (e.g. hydro-meteorological authorities), international organizations (e.g. ECMWF, Red Cross/Red Crescent Climate Center, ICPDR) and research institutions (e.g. CEMADEN, Dartmouth Flood Observatory, University of Reading, NCAR). The WP contributes to the Disaster Risk Management Knowledge Centre and underpins contractual work (PESETA and ERCC series of AA) and contributes to international frameworks such as the UNISDR Sendai Framework for Disaster Risk Reduction and the Global Flood Partnership.	JRC.E.1 Peter SALAMON	4.1.b	GROW	JRC	Mauro Facchini (HoU), Françoise Villette	CLIMA ECHO ENV REGIO	01/01/2016 30/12/2020	INS-RS	201801	Management and new developments for the Copernicus flood EWS	This deliverable contains two main tasks: 1.) Research & development of new products for the Copernicus flood early warning systems: To ensure the further evolution of the Copernicus flood EWS new products will be developed based on feedback from various end-users such as the ERCC, national authorities and the Copernicus user forum. This includes new data assimilation algorithms, improved hydrological models, integration of social media - impact based forecasts as well as the linking with multi-hazard EWS. 2.) Management of the Copernicus flood early warning systems: The JRC is the entrusted entity to manage the Copernicus Emergency Management Service (CEMS) of which the European and Global Flood Awareness Systems (EFAS & GloFAS) are part. This task contains the drafting and follow up of framework & specific contracts, quality control of the delivered services, regular reporting and the ensuring of linkages and synergies with other Copernicus services or other relevant initiatives	30/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
											201802	Knowledge sharing and ad-hoc support related to floods	Knowledge sharing with other international networks to foster uptake of science into decision and policy making on a better flood risk management is essential. Therefore, this deliverable includes the fostering of networks such as the Global Flood Partnership or the EFAS partnership, the collaboration with key partners under numerous JRC collaboration agreements such as the EU-Brazil dialogue, the JRC-NCAR collaboration, and JRC-Angola-EU Joint Action Plan and the contribution to DG ENV WG-F meetings, the ICPDR flood expert group and contributions to the DRMKC. In addition, DG ECHO's ERCC and DG REGIO's EUSF will be provided with specific scientific ad-hoc support in the case of exceptional floods.	30/12/2018	JRC technical reports	
											201806	Impact-based coastal flood forecasting	Scientific publication reporting on the development and application of a prototype impact-based module for Europe to forecast socio-economic impacts of coastal extreme events.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
											201901	Management and new developments for the Copernicus flood EWS	This deliverable contains two main tasks: 1.) Research & development of new products for the Copernicus flood early warning systems: To ensure the further evolution of the Copernicus flood EWS new products will be developed based on feedback from various end-users such as the ERCC, national authorities and the Copernicus user forum. This includes new data assimilation algorithms, improved hydrological models, integration of social media data as well as the development of impact based forecasts. 2.) Management of the Copernicus flood early warning systems: The JRC is the entrusted entity to manage the Copernicus Emergency Management Service (CEMS) of which the European and Global Flood Awareness Systems (EFAS & GloFAS) are part. This task contains the drafting and follow up of framework & specific contracts, quality control of the delivered services, regular reporting and the ensuring of linkages and synergies with other Copernicus services or other relevant initiatives.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
											201902	Knowledge sharing and ad-hoc support related to floods	Knowledge sharing with other international networks to foster uptake of science into decision and policy making on a better flood risk management is essential. Therefore, this deliverable includes the fostering of networks such as the Global Flood Partnership or the EFAS partnership, the collaboration with key partners under numerous JRC collaboration agreements such as the EU-Brazil dialogue, the JRC-NCAR collaboration, and JRC-Angola-EU Joint Action Plan and the contribution to DG ENV WG-F meetings, the ICPDR flood expert group and contributions to the DRMKC. In addition, DG ECHO's ERCC and DG REGIO's EUSF will be provided with specific scientific ad-hoc support in the case of exceptional floods.	31/12/2019	JRC technical reports	
											201903	Storm Surge forecasting model	Scientific publication on the preparation and setting up of a storm surge forecasting model at European scale which couples storm surge, tides and waves. The paper will include an analysis and validation of the results and will provide an outlook on the future integration into EFAS as part of the Copernicus Emergency Management Service.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
GROW04	Support to EU GNSS Programmes - 02/17	In application of the Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European Global Satellite Navigation Systems (GNSS) (OJ L 347, 20.23.2013, p.1), DG GROW, Directorate J, is responsible for the European GNSS programmes. Through this project JRC is supporting the EU Satellite Navigation Programmes at DG GROW, ensuring continuity with the support activity already provided in the last few years in response to the increasing demand for scientific/technical support on GNSS coming from GROW. Activity focus will be on a wide variety of technical tasks, including GNSS security, performance assessment, international cooperation, compatibility and interoperability, technical										GROW04	Support to EU GNSS Programmes - 02/17	As agreed in the technical annex to the GALGROW AA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the second semester of 2017, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/01/2018	Project management related documents/reports identified as outputs of
												GROW05	Galileo and GNSS Monitoring	Under the support to EU GNSS Programmes JRC is engaged in a permanent activity aiming to monitor the performance of Galileo and of other GNSS. In this context JRC will conduct a number of ad-hoc analysis (e.g. in case of anomalies). The results of such analyses will be documented in one or more JRC technical reports.	31/12/2018	JRC technical reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
346 - GALILEO JRC.E.2	4869 - GALGROW Technical and policy support to DG GROW on EU Satellite Navigation Programmes	activities towards the Galileo exploitation phase as well as the evolution of Galileo and EGNOS. Other relevant aspects on which support will be provided are the monitoring of Galileo and GNSS signals, user segment testing and the exploitation of the Galileo Space Service Volume (SSV). By means of the JRC GNSS security test infrastructure within the EMSL laboratory and its technical expertise the JRC will also continue to collaborate with GROW on the definition of technical specifications, the evaluation and the technical monitoring of numerous H2020 projects with subject on GNSS research and technology. Other tasks will be carried out in response to the requests of DG GROW. The activity is entirely funded by competitive budget from a 3-year JRC-GROW Administrative Arrangement signed in 2016 for the years 2017-2019.	JRC.E.2 MATTEO PAONNI	4.1.b	GROW	GROW	Matthias PETSCHKE		GSA - European GNSS Agency	01/01/2017 31/12/2019	CON-AA	GROW06	Galileo Compatibility, Signals and Interoperability	JRC is providing specific support to GROW in the context of the Galileo Compatibility, Signals and Interoperability Working Group (CSI WG). In this context JRC will assist GROW on CSI WG meetings preparation, also through the execution of dedicated technical analysis. Also, JRC will support GROW in the framework of negotiations with GNSS and non-GNSS providers through the execution of specific technical analysis on the compatibility between Galileo and other systems.	31/12/2018	JRC technical reports
												GROW07	Support to EU GNSS Programmes - 01/2018	As agreed in the technical annex to the GALGROW AA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the first semester of 2018, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/07/2018	JRC technical reports
												GROW08	Support to EU GNSS Programmes - 02/2018	As agreed in the technical annex to the GALGROW AA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the second semester of 2018, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	15/01/2019	JRC technical reports
												GROW09	Scientific and Technical Support in the context of Galileo Enhanced Services	Following the declaration of Early services in 2017, within the timeframe 2018-2019 a new milestone is planned for Galileo to increase its commitment in terms of user performance. In this context JRC will support GROW through measurements and performance analysis first to shape the new commitment targets and second to verify that the commitments are kept. New figures of merit will be defined and verified, including Position Dilution of Precision and Position Accuracy. Several Technical and Policy reports will be prepared under this deliverable.	01/07/2019	JRC technical reports
												GROW10	Support to EU GNSS Programmes - 01/2019	As agreed in the technical annex to the GALGROW AA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the first semester of 2019, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	01/07/2019	JRC technical reports
												GROW11	Support to EU GNSS Programmes - 02/2019	As agreed in the technical annex to the GALGROW AA, JRC has to produce half-yearly progress reports. With this deliverable JRC will document the activity performed in the second semester of 2019, providing an overview of the tasks and of all the produced outputs. Project management aspects will be also covered.	31/12/2019	JRC technical reports
												GROW12	Support to EU Radio Navigation Plan Initiatives	The JRC will support the policy initiatives led by DG GROW towards the establishment of the first EU Radio Navigation Plan. The expected market uptake of Galileo will strongly depend on the future of present radionavigation infrastructures and the entrance of new players in the coming. A radio navigation plan should clearly map this new scene and thus becomes instrumental when setting the strategy of the EU GNSS Programmes. JRC will contribute to this mapping exercise. After the publication of a first edition of the ERNP as a staff working document possibly by the end of 2017, the work will continue targeting the possible publication of a second edition as a EC Strategy document.	31/12/2018	Science-for-policy reports
564 - CESAR JRC.D.6	4871 - CLEO Copernicus Land Observation quality assurance	This work package aims to ensure the quality assurance of space- and ground-based land products and their retrieved methodologies. Fitness for purpose of the Copernicus data records will be ensured. The tasks include a state-of-the-art model-based approach for achieving reference data used for product validation. Web-based quality assurance tools are envisaged.	JRC.D.6 Nadine GOBRON	4.1.b	GROW	JRC	Mauro FACCHINI	ENV	CEOS - Committee on Earth Observation Satellites (CEOS) GCOS - Global Climate Observing System (GCOS) WMO - World Meteorological Organization (WMO)	01/01/2017 31/12/2020	INS-RS	200803	Terrestrial ECVs	Global land reference datasets of Essential Climate Variables (ECVs) complemented by metadata and uncertainty estimates. On a yearly basis the activity will continue to update and expand the JRC's benchmark Earth Observation (EO) database created to support land and climate studies, and to interdependently address the fitness-for-purpose of EU Sentinel-3A and Sentinel-3B land products.	31/12/2018	Scientific information systems and databases
												200804	Knowledge Management of EO ECVs quality	The knowledge of accuracy of past and current ECVs estimates needs to be assessed, in particular with respect to their sensitivity to perturbing factors. A comprehensive evaluation of the quality of ECVs will consolidate confidence in their uses. There is also a need to check their intrinsic physical consistency.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201801	Quality assurance of validation protocol	Model-based quality assurance framework to overcome limitations in the quality control for validating ECV protocols.	31/05/2018	PHD thesis
												201802	Benchmark platform	An automatic knowledge management platform that provides the results of benchmarking between international and Copernicus terrestrial satellite products. This will allow for the checking of fitness for purpose against accuracy requirements.	31/12/2018	Technical systems
153 - DT JRC.B.6	4884 - EOValue Socio-economic value of EO Research and Innovation	This work package will support DG RTD in the coordination and support of the evolution of the (GEOSS) Common Infrastructure (GCI) and address the needs of GEOSS users particularly in the GEOSS initiatives or "flagships". These new developments in the GCI will include its adaptation in view of the delivery of Earth Observation (EO) services and products in the different GEO Societal Benefit Areas (SBAs) in particular by the commercial sector. The developments will include measures to sustain the GCI in the long term, and coordination between the European GEOSS Data Hub (Horizon 2020 project), the initiative of the 2017-2019 GEO Work Programme (GEOSS-EVOLVE) and the European Space Agency (ESA) GEO portal enhancement. The evolution of the GCI should be compatible with the European Open Science Cloud (EOSC). The improvement brought to the GCI will contribute to leverage into GEOSS services, data of the Copernicus programme, and applications developed through Horizon 2020 EO projects such as MYGEOSS, including through promoting the use of existing apps and in developing new ones to foster the EO market.	JRC.B.6 Massimo CRAGLIA	4.1.b	RTD	RTD	Michel SCHOUPE	CNECT DIGIT GROW		15/12/2017 14/12/2020	CON-AA	20181	Interoperability pilot (INSPIRE and Copernicus)	The pilot will test the interoperability between INSPIRE infrastructure and the GEOSS Common Infrastructure including Copernicus dissemination services.	01/09/2018	JRC technical reports
												20191	Private sector exploitation of Open GEO data	This technical report analysis the opportunities and perceived limitations in the exploitation of open Earth Observation (EO) and GEOSS open data CORE by the European private sector, and SMEs in particular. This activity is based on the results of a survey focus group and workshop held to elicit the views of the private sector and make recommendations to DG RTD and the GEO Programme Board.	02/09/2019	JRC technical reports
												20201	Evolution of the GEOSS Common Infrastructure	A final report on the evolution of the GEOSS Common Infrastructure.	01/09/2020	JRC technical reports
564 - CESAR JRC.D.6	5045 - Copernicus 2 Administrative Arrangement on Technical support to Copernicus Programme	Multi-annual Administrative Arrangement with DG GROW on the JRC technical support to the Copernicus Programme. Including: management of the Copernicus operational services for Emergency Management and Global Land; detached staff to the Copernicus Units in DG GROW, data information architecture support, quality control and evaluation of Copernicus Services, in-situ reference datasets for calibration and validation, fitness for purpose of Copernicus Products and Services for EU Policy	JRC.D.6 Mark DOWELL	4.1.b	GROW	GROW	Mauro FACCHINI	AGRI CLIMA CNECT DEVCO ECHO ENER		01/10/2017 30/09/2020	CON-AA	2018	Yearly report	Copernicus 2 AA 2018 report	30/10/2018	JRC technical reports
												2019	Yearly Report	Copernicus 2 AA 2019 report	30/10/2019	JRC technical reports
												2020	Yearly Report	Copernicus 2 AA 2020 report	30/10/2020	JRC technical reports
564 - CESAR JRC.D.6	5600 - METEOC 3 Metrology for Earth Observation and Climate 3	The overall objective of this project is to build on the successes of the previous MetEOC projects (http://www.emceoc.org/), and contribute to the establishment of the necessary metrology infrastructure, tailored to climate needs in readiness for its use in climate observing systems. Within the framework of a European metrology 'centre of excellence' network, the research in this project will help to facilitate uncertainties at levels needed to monitor Essential Climate Variables (ECV) and climate change mitigation. To maximise impact the objectives will be addressed through case studies aligned & coordinated with the priorities and activities of the international community, WMO, CEOS, GCOS, and in partnership with organisations such as ESA, EU (Copernicus) & EUMETSAT. METEOC-3 responds to a EURAMET (European Association of National Metrology Institutes) European Metrology Programme for Innovation and Research (EMPIR).	JRC.D.2 Frederic MELIN	4.1.b	GROW	RTD	Mauro Facchini, GROW.I.2	CLIMA ENV	ESA - European Space Agency - Italia NIST - National Institute of Standards and Technology CEOS - Committee on Earth Observation Satellites (CEOS) EUMETSAT - European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) GCOS - Global Climate Observing System (GCOS) NASA - NASA - National Aeronautics and Space Administration NOAA - National Oceanic and Atmospheric Administration	01/09/2017 31/08/2020	CON-IA	D201901	Uncertainty estimates of marine reflectance	The activity will provide revised uncertainty estimates of marine reflectance for reference sites and available satellite missions. The results will be analyzed as a function of a certain number of elements (wavelength, season, water type) to achieve progress in producing space- and time-resolved uncertainty estimates for marine reflectance.	31/07/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												D202001	Definition of calibration performances tests	Building on results from the assessment analysis of hyper-spectral absolute radiometric calibrations, the activity will provide guidelines aiming at standardizing calibration performance tests for in situ hyperspectral radiometers with the final objective to minimize lengthy and expensive laboratory efforts, still ensuring high quality to in situ reference measurements for the validation of satellite ocean color products. This includes investigating differences in absolute calibration performance of single- versus multi-point optical radiometric calibrations.	15/08/2020	JRC technical reports
												D202002	Uncertainty analysis of atmospheric correction	The activity will build a proper software environment to analyze the different modules of a standard atmospheric correction scheme. This will allow the construction of uncertainty budgets for OC atmospheric correction, with application to SVC and in general an improved assessment of uncertainty in the measurement of the OC ECV.	15/08/2020	JRC technical reports
225 - EO&SS Big Data JRC.I.3	5980 - openEO Common open source interface between Earth Observation data infrastructures & front-end applications	openEO is an H2020 project funded by the EO Big Data Shift call (H2020-EO-2017) and coordinated by the Technical University of Wien, Austria. openEO aims at designing and implementing a common, open source interface between high-level descriptions of data mining chains to be applied to geospatial data collections and the platforms capable of performing the requested analysis. It shall also ensure that reproducible results are obtained across the platforms running the considered data mining chains. The planned contribution of JRC to the project shall focus on the definition of the specifications of the open application programming interface between front-end users and back-end platforms. Cross-testing to ensure that reproducible results are obtained when performing the same functions on different back-end platforms will also be performed.	JRC.I.3 Pierre SOILLE	4.1.b	GROW	JRC	Pierre Soille		01/10/2017 30/09/2020	CON-IA	1	openEO API	Contribution to the specification, testing, and optimisation of the common and open application programming interface between various front-end users and back-end platforms for the analysis of Earth Observation data at scale and for a variety of use-cases. Contribution to cross-testing to ensure that reproducible results are obtained when performing the same data analysis on two or more platforms equipped for this analysis.	30/09/2020	Technical systems	

4.1.c medical devices and cosmetics - provide scientific and technical support in regard to the revised medical devices and in vitro diagnostic medical devices regulatory framework; provide technical support to the cosmetics regulatory framework which includes promoting alternative methodologies to animal testing.

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
275 - MedicalTechnology JRC.F.2	4881 - MD-EVIDENCE-PRE Improving evidence generation and management of medical technology in the premarket space	Clinical data on medical devices play a critical role for providing evidence on the safety and effectiveness / performance of devices. Appropriate clinical data are necessary for presumption of conformity in agreement with legal / regulatory provisions and thus for allowing market access of devices (CE marking). Moreover, they are fundamental for an informed and evidence-based risk-benefit evaluation in view of decision-making, both on an individual level (e.g. by patients, health practitioners for choosing devices/procedures) and on a wider level of health technology assessments (HTA) for regional and national health systems. It is clear that clinical evidence should be obtained in agreement with principles of scientific integrity and rigour, i.e. be, ideally, reliable and unbiased / objective. Yet, despite the importance of reliable clinical evidence, the framework for generating and managing clinical data in the EU (and internationally) shows at present several drawbacks. These include (1) data paucity and issues with the quality of clinical data, (2) technical gaps and scientific weaknesses with regard to reporting and effective monitoring of adverse events, (3) insufficient consistency across MS with respect to the practices and approaches concerning the evaluation of applications for clinical investigations by manufacturers/sponsors. MD-EVIDENCE-PRE will focus on key scientific and technical issues related to clinical data generation in the premarket space. The WPK	JRC.F.2 Hubert CHASSAIGNE	4.1.c	GROW	GROW	Hans Erik HANSSON; Paul PISCOI; Jean-François ROCHE; Salvatore D'ACUNTO	COMP RTD SANTE	COCIR - European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) EDMA - European Diagnostic Manufacturers Association (EDMA) EPF - European Patients Forum (EPF) EUCOMED - Eucomed represents the Medical Technology industry in Europe IMDRF - International Medical Device Regulators Forum (IMDRF) Medtech Europe - Medtech Europe	01/08/2017 31/07/2020	CON-AA	MDE1	Science for policy tools for improved clinical data generation, assessment, evaluation and IT tools (MDR EUDAMED) in the premarket space	Advice, guidance, templates, procedures, process flows and co-design of specific legislation to enhance the consistency of the assessment of clinical trial applications, to enhance the quality of clinical trial data and their subsequent assessment, to enhance the continuous process of clinical evaluation throughout the life cycle of devices, to enhance member state cooperation in this area and ensure an efficient design of the clinical module of the future EU central database on Medical Devices (MDR EUDAMED). The deliverable will encompass a series of key outputs: 1) Co-design of functionalities of clinical subsystem of MDR EUDAMED 2) Device specific guidance on coronary stents 3) Device specific guidance on transcatheter aortic valve implants 4) Other device specific guidance or common specifications 5) Co-design of specific legislation (Implementing Acts) addressing clinical investigation applications and 6) relevant coordinated procedure	30/06/2020	JRC contributions to policy documents	
275 - MedicalTechnology JRC.F.2	6375 - MD-EVIDENCE-POST Improving evidence generation and management of medical technology in the postmarket space	The vigilance of medical devices and in vitro diagnostic medical devices suffers from several drawbacks at present: (1) there is a variety of approaches and practices in member states with regard to their vigilance work stream, hampering collaboration and action at EU level. Such fragmentation of approaches across MS is unacceptable in the existing single market for medical devices; (2) in contrast to the pharmaceutical field, there is a considerable lack of explicit criteria, processes and tools for efficient and effective detection of novel risks (signals) and their evaluation; (3) there is a complete absence of agreed and consistently employed data structure regarding the reporting of adverse events. This severely limits the use of statistical methods for monitoring larger sets of incident data and for mining these data in view of pattern recognition (e.g. use-adversity). This concerns incident reports, but also other sources such as patient registers or periodic summary reports; (4) Not all relevant data sources that may point to novel risks are consistently and systematically exploited for vigilance and market surveillance (illustrated by the PIP or metal-on-metal hip implant cases). Taken together, these drawbacks unnecessarily put patients at risk and also hamper the development and improvement of safer novel device designs. To address these issues, the WPK focuses on key scientific & technical topics linked to the science-	JRC.F.2 Claudius GRIESINGER	4.1.c	GROW	GROW	n/a	COMP RTD SANTE	COCIR - European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) EDMA - European Diagnostic Manufacturers Association (EDMA) EPF - European Patients Forum (EPF) EUCOMED - Eucomed represents the Medical Technology industry in Europe IMDRF - International Medical Device Regulators Forum (IMDRF) Medtech Europe - Medtech Europe	01/10/2017 30/09/2020	CON-AA	MDPOST1	Science for policy tools for improved vigilance workstreams in the postmarket space including advancement of a novel anticipatory regulatory paradigm (open conceptual framework)	Advice, guidance, templates, procedures, process flows and co-design of specific legislation to enhance the consistency and completeness of vigilance work streams, to enhance member state cooperation in this area including through development of an "Open Conceptual Framework" and Integrated Approaches for signal detection and management, to ensure efficient exploitation of all relevant information sources, to ensure an efficient design of the vigilance module of the future EU central database on Medical Devices (MDR EUDAMED). The deliverable will encompass a series of key outputs: 1) Co-design of the vigilance subsystem of MDR EUDAMED depending on prioritisation by MDCG and relevant subgroups 2) Open Conceptual Framework for signal detection and management 3) Integrated approach for signal detection and management 4) IT tool for collection, categorisation, translation of global regulatory safety information (collaboration with I.3) 5) Co-design SCHEER mandate (nanomaterial)	30/06/2020	JRC contributions to policy documents	
275 - MedicalTechnology JRC.F.2	6377 - MD-CONVERGENCE The convergence of novel technologies in medicine and medical devices	Medicine's progress over the last century was made possible through the dramatic pace of discoveries in both basic and applied sciences in a wide variety of disciplines, namely biological research, molecular biology and biotechnology. The pace at which discoveries are made is accelerating and so is the speed at which medical practice is being transformed. Recently, further acceleration stems from the fact that technologies and discoveries from various areas increasingly 'converge', giving rise to novel products that are often difficult to categorise (borderline products) based on traditional regulatory concepts. Examples are cyber-physical medical devices, 3D-printing of devices, novel materials (e.g. nano) or regenerative medicine based on bioprinting and synthetic biology. This has benefits for patients and holds great potential for economic opportunities in the EU and world markets. However, it isn't fully clear whether regulatory assessment frameworks that are rooted in sectorial separation are ready to evaluate effectively the safety & performance of products based on converging technologies. Further, market surveillance and enforcement are challenged by new production processes with a possible multiplication of actors and dilution of responsibilities (e.g. home-	JRC.F.2 Josefa BARRERO	4.1.c	GROW	JRC	n/a	COMP RTD SANTE	COCIR - European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) EDMA - European Diagnostic Manufacturers Association (EDMA) EPF - European Patients Forum (EPF) EUCOMED - Eucomed represents the Medical Technology industry in Europe IMDRF - International Medical Device Regulators Forum (IMDRF) Medtech Europe - Medtech Europe	01/01/2018 31/07/2020	INS-UR	1	Convergence of novel technologies in medicine and medical devices: drivers, scientific challenges, gaps and possible solutions to ensure the continuous adaptation of regulatory science to innovation	Conceptual framework assisting risk detection/management of novel technologies and their convergence in the medical device sector, consisting of a variety of discrete but interrelated modules (e.g. novel materials, production processes, risk benefit assessment at the early phase, data integration, use of HTA frameworks for improving design, production and use of products based on converging technologies). The framework should be flexible thus facilitating the adaptation to new technological developments and regulatory preparedness.	30/06/2020	JRC technical reports	
275 - MedicalTechnology JRC.F.2	6378 - MD-EXPERT Establishment of novel scientific structures as required by the Medical Device Regulation and cross-cutting issues of medical technology management	The new Medical Device (MD) Regulation (EU 2017/745 of 5. May 2017) introduces a complete paradigm shift with respect to the use of scientific expert advice and verification. It foresees two novel scientific expert structures: (1) Expert Panels (EP) and (2) Expert Laboratories (EL). EP and EL will play a key role for the assessment of clinical evaluation reports on high risk medical devices (the so-called "scrutiny procedure") and will provide views on the performance evaluation of specific high-risk in vitro diagnostic medical devices. They have additional important roles such as providing scientific, technical and clinical assistance to the Commission and the future core committee (the "MD Coordination Group") composed of Commission (GROW, JRC, SANTE) and Member States Competent Authorities. The work package MD-EXPERT will focus on the establishment of expert panels (EP) and expert laboratories (EL). The WPK will develop this work in three distinct steps: Step 1: based on a scoping paper developed by JRC on the novel expert structures under the new legislative framework a, JRC will undertake a structured dialogue with MS (i.e. a survey) to address key technical questions	JRC.F.2 Claudius GRIESINGER	4.1.c	GROW	GROW	n/a	COMP RTD SANTE	COCIR - European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) EDMA - European Diagnostic Manufacturers Association (EDMA) EPF - European Patients Forum (EPF) EUCOMED - Eucomed represents the Medical Technology industry in Europe IMDRF - International Medical Device Regulators Forum (IMDRF) Medtech Europe - Medtech Europe	01/10/2017 30/09/2020	CON-AA	MDexpert1	Establishment of expert panels and expert laboratories as foreseen in Article 106 of the novel Medical Device Regulation.	The deliverable will consist of a series of milestones and outputs: 1) Report on survey of MS on expert panels and expert laboratories (landscape, fee structure, equipment) and MDCG discussions 2) Published call document for experts/advisers (Official Journal of EU) - see Article 106 of the MDR 3) Published call document for expert laboratories (Official Journal of EU) - see Article 106 of the MDR 4) Co-design of specific legislation (Implementing Acts) for designation of expert panels including (a) structure of fees levied by Expert Panels and (b) outlining procedures for managing conflicts of interests of experts / advisers 5) Co-design of specific legislation (Implementing Acts) for designation of expert laboratories (Article 106 of the MDR), including structure of fees to be levied by Expert Laboratories 6) International regulatory science projects for effective risk management and fostering global regulatory collaboration.	30/06/2020	JRC technical reports	
275 - MedicalTechnology JRC.F.2	6395 - IVD-EXPERT Expert guidance and advice on establishing EU Reference Laboratories on in vitro diagnostic medical devices	IVD-EXPERT will focus on the JRC guidance and advice on the establishment of EU reference laboratories (EURL) foreseen in the new EU Regulation on in vitro diagnostic medical devices (REGULATION (EU) 2017/746 of 5 May 2017). EURLs will play a key role concerning (1) the verification of the claimed performance of high risk IVDs and (2) will conduct testing of high risk devices/batches. In addition EURLs have other tasks, such as provision of scientific and technical assistance, coordination of national reference laboratory networks, contribute to development of common specifications and international standards. The WPK will tackle the work in three distinct steps: (1) based on a scoping paper developed by JRC on the novel expert structures under the new legislative framework and covering Expert Panels, Expert Laboratories and EU Reference Laboratories, JRC will undertake a structured dialogue with MS (i.e. a survey) to address key questions. (2) Based on the survey results and consultation with MS, JRC will develop the necessary documents (to be published in the Official Journal) concerning the call for application as EU Reference Laboratories. (3) Based on selection of Reference Laboratories (in	JRC.F.2 Heinz SCHIMMEL	4.1.c	GROW	GROW	n/a	COMP RTD SANTE		01/08/2017 31/07/2020	CON-AA	IVDexpert1	Establishment of EU reference laboratories as foreseen in Article 100 of the novel Medical Device Regulation.	The deliverable will consist of a series of milestones and outputs: 1) Report on survey of MS on EURLs for in vitro diagnostic medical devices (landscape, fee structure, equipment) and summary of discussions with Member States (MDCG and subgroups) 2) Published call document for EURLs for Official Journal of European Union as foreseen in Article 100 of IVDR 3) Co-design of specific legislation (Implementing Acts) for designation of EURLs in the area of in vitro diagnostic medical devices as foreseen in Article 100 of IVDR, including (a) structure of fees to be levied by EURLs for verification of performance and batch testing and (b) criteria and process for controls e.g. through on-site visits and audits of the EURLs in line with Article 100(9) of the IVDR.	30/06/2020	JRC technical reports	
4.1.d raw materials - help to implement actions and EU policies and monitor the progress of the implementation plan for the European innovation partnership on raw materials. Monitor and analyse primary and secondary raw materials at European and global levels, contributing to the raw materials scoreboard and circular economy indicators. Support the management of the EU knowledge base on raw materials by developing the raw materials information																	
443 - Raw Materials JRC.D.3	3441 - MICA Mineral Intelligence Capacity Analysis	The objective of MICA is to develop a methodology, workflows and associated tools to make the best use of available data on mineral resources in Europe to support scientific and policy questions. MICA is a follow up (Minerals4EU) that created European minerals knowledge base (information system) + the permanent EU mineral information network. MICA is planned to strengthen this knowledge base on EU mineral resources by adding ontology based information on the best available technologies (BAT) including visualisation inspired by the JRC MIDAS (Model Inventory and Database Access Services) project.	JRC.B.6 Robert TOMAS	4.1.d	GROW	RTD	Slavko SOLAR (GROW. C.2)			01/12/2015 31/01/2018	CON-IA	201702	Raw Materials Intelligence Capacity Platform	Delivery (implementation and operation) of the Raw Materials Intelligence Capacity platform (EU-RMICP system), fully integrated to the EU Raw Materials Knowledge Base	31/01/2018	Scientific information systems and databases	
		Objectives: - This WPK will contribute to the EU's secure and sustainable access to raw materials, particularly in the context of criticality, resource efficiency, resource saving and recycling. How the WPK contributes to the achievement of project's objectives? - The WPK contributes to the project as it supports effective identification of Critical Raw Materials and the 3rd pillar of the Raw Material Initiative "Resource efficiency and supply of secondary raw materials through recycling". It also supports specific actions of the Circular Economy Action plan related to secondary raw materials and critical raw materials. Methods developed in this WPK are necessary to prepare meaningful information and data on resource efficiency and recycling to be inserted into the Raw Materials Information System, including for use in the Raw Materials Scoreboard. What will be done in the WPK? - The WPK is to explore important parameters used in relation to criticality assessment, particularly in relation to security of supply and resilience. A first block of activities concerns the analysis of stocks of raw materials (looking at particular sectors) and of secondary raw materials, including critical ones. Another block aims at exploring the potential of options and tools for mitigation of supply risks, through e.g. resource saving, recycling and resource efficiency standards. Short description of main methodologies (experiments, modelling, workshops,...) to be used? - Most of the work will be done through analysis of the current situation (e.g. analysis of statistics, of practices), modelling of current and future material flows and stocks (using e.g. Material Flow										201801	Better data on high quality Secondary Raw Materials. SUPPORT TO CIRCULAR ECONOMY ACTION IV.7 (Further development of RMIS) and ACTION VII (Monitoring Framework). The Raw Material Initiative identified end-of-life products/components (e.g. EEE, batteries, vehicles) as valuable sources of secondary raw materials. This deliverable will provide an analysis aiming (1) to identify which waste streams can be source of high-quality secondary raw materials; (2) to quantify the flows of lost resources (e.g. by misplaced waste from households, differences of waste practices across the EU and third party country (e.g. emerging and developing economies), or by (illegal) export outside of the EU); and (3) to estimate the potential of these flows to produce secondary raw materials, also to increase EU resilience towards supply risks. The deliverable focuses specifically on some waste streams (e.g. those containing CRMs), addressing all sustainability aspects (environmental, social and economic). It is also related to RMIS and to the RM Scoreboard.	15/12/2018	Scientific information systems and databases		
									- EUROPEAN COPPER INSTITUTE - European Consumers' Organisation - TECHNISCHE UNIVERSITAET BERLIN EGS - Eurogeosurveys CEN - European Committee for Standardization CENELEC - European Committee for Electrotechnical Standardization				201802	Analysis of critical and base raw material flows in supply chains	Flow and stock data are required for circular economy and raw material monitoring. This work focuses on (1) development of the material flow knowledge/ database component that is a backbone to the EC Raw Materials Knowledge Base and of JRC RMIS. The deliverable will include how to represent flow and stock data considering international harmonisation activities, as well as a summary of modelling approaches and key data sources. It will support the further development of related monitoring indicators (EU RM Scoreboard, CE Monitoring).	20/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
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443 - Raw Materials JRC.D.3	3767 - RAW-MAT-CEA Raw Materials: Criticality and Efficiency Assessments	Analysis), and proposal and test of new indicators. Why is this work needed? Why is it important? This work is at the heart of the Raw Materials Initiative, it supports the EU Knowledge Base on Raw Materials (including RMIS), the Raw Materials Scoreboard, and the Circular Economy Monitoring framework.	JRC.D.3 FABRICE MATHIEUX	4.1.d	GROW	JRC	Gislew; GROW, C1 (Fulvia Raffaelli & Cesar Santos); ENV (Hugo Sschally & Ferenc Pekar); ENER (Paul Hodson; Paolo Tosoratti)	CNECT DEVCO ENER ENV SG	(CENELEC) EAA - European Aluminium Association EUROFER - European Confederation of Iron and Steel Industries (EUROFER) KUL - Katholieke Universiteit Leuven MS EU - Member states EU ORGALIME - European Engineering Industries Association PlasticsEurope - Association of Plastics Manufacturers (PlasticsEurope)	02/01/2017 31/12/2019	INS-RS	201901	Standards to support resource efficiency. SUPPORT TO CIRCULAR ECONOMY ACTION V.3.2&3. SUPPORT TO THIRD PILLAR OF RAW MATERIALS INITIATIVE. SUPPORT TO IMPLEMENTATION OF WEEE DIRECTIVE	SUPPORT TO CIRCULAR ECONOMY ACTION V.3.2&3 (Sectorial Action: Critical Raw Materials: exchange of information; standards for material efficient recycling). SUPPORT TO THIRD PILLAR OF RAW MATERIALS INITIATIVE. SUPPORT TO IMPLEMENTATION OF WEEE DIRECTIVE. Report analysing the need for, and the necessary components of, new standards to enhance resource efficiency. In particular, shared and agreed methods to measure the material efficient recycling of products (especially of electronic equipment containing CRMs) to maximise the output of secondary raw materials will be discussed. The deliverable will address exchange of information between manufacturers and recyclers, and the definition of reference values of recycling rates of materials (including CRMs). It will also address the assessment of resource accounting, including resource savings and use of CRMs in the MEErP method. It will be based on the 3 years (2016-19) JRC' contributions to the preparation/execution of CEN/CENELEC mandates.	30/09/2019	Science-for-policy reports
												201902	Analysis of efficient circulation of raw materials for various recovery strategies in several sectors.	SUPPORT TO CIRCULAR ECONOMY ACTION V.3.1 (critical raw materials in the circular economy). The recovery strategies to be analysed based on data coming from real practices include: optimised recycling of CRMs contained in photovoltaic panels; recycling of phosphorous streams; extension of lifetime of Cobalt and Lithium through re-purposing of electric vehicles batteries (spin-off of SASLAB Exploratory project, collaboration with C.1).The deliverable contains journal papers addressing the efficiency of various recovery strategies in various sectors, taking a circulation of raw materials perspective.	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
443 - Raw Materials JRC.D.3	3818 - RMIS Raw Materials Information System	The secure and sustainable supply of raw materials is essential to EU competitiveness and growth. The Raw Materials Initiative, the European Innovation Partnership, and the Circular Economy Action Plan therefore foresee the necessity of a Knowledge Base and of Monitoring to support related EU policy needs. This work package, RAW-KBM, facilitates the commitment of the JRC to develop the Raw Materials Information System (RMIS) and, thus, monitoring indicators. The RMIS will have a central role in the EU's Knowledge Base on Raw Materials. Principally, the RMIS will facilitate the knowledge required by EU policy in the context of raw materials. This will account for the supply chains of both primary and secondary (recycled) raw materials for key sectors. Focus is mainly on abiotic materials, but some biotic materials are equally addressed in terms of security of supply and resilience. Knowledge will account for trade, social, and environmental considerations. Complementing this principle role, the RMIS will provide direction on key knowledge needs for policy, as well as facilitate coherent inputs, from organisations such as the Geological Surveys of Europe (EGS), the European Institute of Innovation and Technology – Raw Materials, and selected Horizon 2020 projects and COST Actions. International interactions are foreseen with the UNEP International Resource Panel and the United State Geological Survey, amongst other key knowledge providers.	JRC.D.3 SIMONE MANFREDI	4.1.d	GROW	JRC	Mattia PELLEGRINI	DEVCO ENV ESTAT RTD TRADE	EGS - Eurogeosurveys UNEP - United Nations Environment Programme (UNEP) USGS - U.S. Geological Survey	01/01/2016 31/12/2019	INS-RS	201801	Analyses for enhancing the raw materials profiles in RMIS	Europe relies on reliable and robust knowledge on raw material stocks and flows for policy support. Related policies include to identify raw materials that are critical to the EU economy but at high risk of supply disruption and related resilience. Material flows are also a backbone to sustainability analyses. The deliverable will address the need for further enriching the raw materials profiles in the RMIS with reliable data. Linkages will be made with results from Horizon 2020 projects.	20/07/2018	JRC technical reports
												201802	Economic, Social and Environmental Assessment of material supply chains	The sustainable supply of raw materials is fundamental to EU competitiveness, with increasing policy emphasis on economic resilience and security of supply, social and environmental fairness. This work will contribute to the needs of the Raw Materials Information System and to the Raw Materials/Circular Economy monitoring. It will build upon information to account for geographical distribution of trade along supply chains of products rich in CRM content, hence related social and environmental considerations. Market elements will also be enhanced (prices, trade barriers). Cross-comparisons will also be made on other sources of information from different analyses perspectives. The information will enhance the country profiles included in the JRC RMIS.	30/11/2018	JRC technical reports
												201901	Further development of the EC Raw Materials Information System (JRC RMIS)	The JRC has launched the Raw Material Information System to support EU policy needs, to highlight needs to the broader community, and to facilitate interaction and coherence. A key element of this development is interaction with stakeholders, in particular with member states and with industry. This includes knowledge supporting multi-disciplinary knowledge needs for the security and sustainability of supply of raw materials to many sectors, both from primary sources via extraction as well as from secondary sources through e.g. recycling. Targeted workshops will therefore present the main developments in the RMIS. They will bring together knowledge from JRC and other DGs, member states, industry, and key European/international organisations. Focus will be on the further development of country profiles, raw materials profiles and gateway to knowledge providers, as well as to secondary and critical RM.	29/11/2019	JRC technical reports
443 - Raw Materials JRC.D.3	4303 - RM- EIP Raw Materials – Support to European Innovation Partnership	This work implements the Administrative Arrangement between JRC and DG GROW in support of implementation of the Raw Materials European Innovation Partnership (RM-EIP). This Partnership was established to implement the Raw Materials Strategy in the context of Industrial Renaissance, in particular to increase competitiveness and hence growth and jobs. Focus is on non-energy and non-food raw materials; both biotic and abiotic. It accounts for raw material supply chains, including in particular knowledge and analyses associated with primary raw materials that are extracted, as well as secondary raw materials that are recovered from waste through e.g. urban mining, recycling, etc. This work package complements, and necessary interacts with, institutional work packages such as RAW-KB (now RMIS), Success, and others in the Raw Materials Project 443.	JRC.D.3 David PENNINGTON	4.1.d	GROW	GROW	Patrice Millet, Mattia Pelligrini	ENV ESTAT TRADE		13/10/2016 30/11/2018	CON-AA	D13	Analysing availability of trade data	This deliverable will contribute to the inclusion of trade data in RMIS. JRC will make an analysis of the data needs starting from the list below and create an overview of which data sources are the best suited to meet the agreed needs.	01/03/2018	JRC technical reports
												D14	Preliminary assessment of selected pilot country's raw materials potential and trade patterns	Prepare for the inclusion of trade data in RMIS and to deliver coherent country, product and material-specific trade data on raw materials to fill in the existing knowledge gaps and to link this information with the material flows analyses.	01/05/2018	JRC technical reports
												D15	Trade fiches for at least three pilot countries	A set of three country fiches will be delivered based on D13 and D14. Countries will be selected by DG GROW in consultation with JRC.	01/05/2018	Datasets
												D16	Making trade fiches available online for 3 countries	A set of three country fiches will be made available online. These will build on the trade information developed in Deliverables 13,14 and 15 of this AA. This includes raw materials information on production, foreign investment, import data, export data, export restrictions, trade balance, and trade commitments.	01/05/2018	Scientific information systems and databases
												D2	EIP-RM Annual Monitoring Report 2017	Production of the European Innovation Partnership on Raw Materials' Annual Monitoring Report 2017, consisting of: D2.1. Review and modifications to the survey and D2.2. Annual Monitoring Report	30/03/2018	JRC contributions to policy documents
												D4	draft fiches per priority area	The SIPID will consist of a concise key document with general conclusions that will be accompanied by an annex that includes 7 fiches (one per Priority Area). These fiches will provide an inventory, action by action, of research projects and initiatives undertaken by potential players during the mandate of the EIP, including the Raw Materials Commitments, EU funded projects (FP7, Horizon 2020), EC initiatives, MS funded projects and MS initiatives.	01/04/2018	JRC contributions to policy documents
												D7	Raw Materials Scoreboard - 2018	The Raw Materials Scoreboard provides quantitative data on the EIP's general objectives and on the raw materials policy context. It presents relevant and reliable information that can be used in policymaking in a variety of areas (e.g. monitoring of the circular economy). The purpose of the 2018 Scoreboard is to widen and deepen the analysis presented in the 2016 Scoreboard, so as to provide even better insights in the raw materials policy context.	27/04/2018	JRC technical reports
												D9	MSA analysis for at least three bulk materials	The MSA analysis of at least three bulk materials (e.g., iron, copper, and aluminium, with consideration of nickel and zinc pending on feasibility) will start with (a) JRC's proposal for MSA simplifications / optimisation of flows, (b) the data collection of data and creation of excel sheets, (c) evaluation by relevant experts and (d) finally integration into the MSA website of RMIS.	23/02/2018	JRC technical reports
443 - Raw Materials JRC.D.3	4740 - SCREEN Solutions for critical raw materials - A European expert network	SCREEN aims at gathering all European initiatives, associations, clusters, and projects working on Critical Raw Materials into an Expert Network. This Network, built as a two tier layer structure (the Consortium and External Experts) includes public authorities and civil society representatives, in order to allow a multi-stakeholder dialogue on a topic with such key societal, economic, geopolitical and environmental implications.	JRC.D.3 SIMONE MANFREDI	4.1.d	GROW	GROW	Milan Grohl (GROW.C.2)		- Geological Survey of Denmark and Greenland - UNITED NATIONS UNIVERSITY INSTITUTE FOR ENVIRONMENT AND HUMAN SECURITY	01/01/2017 30/04/2019	CON-IA	1	Knowledge Mapping and evaluation	Results of the Knowledge Mapping and evaluation of data/knowledge provided by other WPs. A thorough list of knowledge already existing within the consortium and knowledge to be acquired from external sources will be elaborated. This list will be then used along the project in order to determine the explicit and tacit knowledge to be retrieved by the knowledge manager from WP leaders.	28/07/2018	JRC technical reports
443 - Raw Materials JRC.D.3	6086 - ORAMA Optimising quality of information in Raw Materials data	The JRC is supporting the DG GROW's raw materials policy by developing or contributing to several policy support instruments, such as (1) the Raw Materials Scoreboard presenting relevant and reliable information usable in policymaking, (2) Critical Raw Materials (CRM) list defining critical raw materials to European economy and society and (3) the Raw Materials Information System (RMIS) web based knowledge platform. The RMIS, as central part of the JRC involvement in Commission's raw materials policy, cannot provide all data and information, and therefore needs strong cooperation with other data providers and services. The ORAMA project proposal is aiming in creating the network among data providers and data services outside Commission and the JRC (RMIS) and at jointly identifying and implementing some improvement potentials for datasets concerning primary and as on secondary raw materials. The ORAMA consortium gathers together the main European stakeholders (National surveys, waste collections schemes, academia) active in data collection of raw materials. This project is hence crucial to ensure that RMIS will be in the future a natural outflow of European raw material knowledge and will be interoperable with other existing tools (e.g. European Geological Data Infrastructure).	JRC.D.3 FABRICE MATHIEUX	4.1.d	GROW	RTD	n/a		- Bureau de Recherches Geologiques et Minieres - BRGM - UNITED NATIONS UNIVERSITY INSTITUTE FOR ENVIRONMENT AND HUMAN SECURITY - GEOLOGICAL SURVEY OF FINLAND - Universiteit Leiden	01/01/2018 27/12/2019	CON-IA	D2	Final report on the analysis of data collection methods and implementation of prioritised recommendations for improving SRM datasets	Based on the identification of data gaps and barriers from Task 2.1, structuring of both general recommendations and specific recommendations from existing and ongoing EU projects is made. The structuring is made per (waste) sector in the form of specific short and long term strategies to enhance data quality and availability with regard to: i) product compositions and mining waste content, ii) stocks and (waste) flows information and iii) final recovery rates at (re)processing for relevant commodities, especially the CRMs. The following criteria are applied: Harmonisation, Standardisation, Knowledge level and (human and monetary)	21/12/2018	JRC technical reports
												D5	Analysis of the mapping of EU funded projects, initiatives and identification of synergies	the information resulting from the mapping exercise will be analysed with the ORAMA team with the aim of targeting more closely those projects and initiatives estimated to bear potential for significant synergies in cooperation. This will also allow to verify that the inputs of data, information and knowledge from any of the ongoing projects will be available in a timely manner to be incorporated into the ORAMA work plan. This characterisation of initiatives will provide a list of desired synergies and form input for Task 5.3. The list will distinguish projects and initiatives that will participate in clustering activities, and those that will simply be kept informed of ORAMA's achievements. The analysis of the mapping will receive input from ORAMA consortium and be updated during the entire duration of the project.	29/06/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
443 - Raw Materials JRC.D.3	6089 - RM-EIP II Supporting the monitoring and evaluation of the European Innovation Partnership (EIP) on Raw Materials	Technical assistance supporting the monitoring and evaluation of the European Innovation Partnership (EIP) on Raw Materials; This action shall cover the delivery of the following items: -the EIP Annual Monitoring Report on "Raw Materials Commitments", for 2018-2021; the completion of the third EIP Call for commitments (preparation of the call and analysis of proposals); -the preparatory work and the finalisation of the EIP Strategic Implementation Plan (SIP) Implementation Document 2018-2021 (e.g. involving stakeholder consultation/meetings, via a Europe-wide questionnaire); -the preparatory work (e.g. data extraction, development of new indicators) and the finalisation of the Raw Materials Scoreboard 2020 (e.g. involving stakeholder consultation/meetings); -support to the selection process for the 2020 List of CRMs; -support to further development of information and standardization aspects on secondary market for critical raw materials; -integrating and developing the elements of the EU Raw materials Knowledge base in the Raw materials Information System.	JRC.D.3 David PENNINGTON	4.1.d	GROW	GROW	n/a			01/07/2018 01/10/2021	CON-AA	1	Technical assistance supporting the monitoring and evaluation of the European Innovation Partnership (EIP) on Raw Materials	This action shall cover the delivery of the following items, on an annual basis (at least three deliverables, one in each year, covering this function): -the EIP Annual Monitoring Report on "Raw Materials Commitments" for years 2018, 2019,2020, -the preparatory work and the finalisation of the EIP Strategic Implementation Plan Implementation Document (SIPID) 2018-2020 (e.g. involving stakeholder consultation/meetings, via a Europe-wide questionnaire); -support to the completion of the third EIP Call for commitments (preparation of the call and analysis of proposals);	26/02/2021	JRC contributions to policy documents
												3	Integrating the elements of the EU RM Knowledge Base in the EC JRC Raw Materials Information System	Integrating of results from Horizon 2020 projects related to raw materials into the JRC-maintained RMIS; further development of the raw materials profiles and of country profiles, based on information collected from publicly available sources, European and EU national official statistics, projects financed by Horizon 2020 programme.	13/12/2019	Science-for-policy reports
7596 - Resilience4EU JRC.B.1	6310 - MDU Materials for Dual Use AA	The EU resilience to supply of materials along the whole supply chain - from raw materials (RM) to components and systems - is standing high in the political agenda today. The strong EU dependency on supply of RM and components from beyond Europe, particularly from China, Japan and Korea, can become a serious bottleneck in the long-term transition towards low carbon EU. If such bottlenecks for specific materials affect also the EU security - and in particular the defence sector - this issue becomes even more urgent, requiring immediate actions and the development of future strategies. In this context, the main objective of this WPK (an AA with DG GROW) is to identify bottlenecks and	JRC.C.7 Darina BLAGOEVA	4.1.d	GROW	GROW	n/a			01/01/2018 31/12/2018	CON-AA	1	Bottlenecks and supply risks to dual use materials	Report on the bottlenecks and supply risks linked to raw materials and advanced processed materials that are needed for the development of key emerging technologies, such as advanced batteries, fuel cells, solar modules, robotics and sensors required in both defence and civil applications.	31/12/2018	Science-for-policy reports
7534 - C2ART JRC.C.4	6682 - SMART Sustainable use of Materials through Automotive Remanufacturing to boost resource efficiency in the road Transport system	The research "SMART" contributes to the Exploratory Research (ER) Programme. This research aims at developing and evaluating promising strategies to boost resource efficiency in the transport sector, with a specific focus on passenger cars, which represent the majority of vehicles on EU roads. We target the contribution of remanufacturing, an industrial process that consists of restoring end-of-life vehicles and components to useful life, therefore achieving reuse and circularity of materials. The project will study how remanufacturing, aiming at extending lifetime of components and materials, and innovative mobility models, aiming at increasing the vehicle use intensity (e.g. mobility as a service, electrification and autonomous vehicles), can be integrated to provide benefits in terms of resource efficiency and sustainable use of materials.	JRC.D.3 FULVIO ARDENTE	4.1.d	MOVE	JRC	n/a	ENV		01/01/2018 31/12/2019	INS-ER	01	Final technical report	The Final technical report will summarise all the findings of the project. A mid-term technical report will be produced at the end of first year	31/12/2019	JRC technical reports

4.1.e EU defence research - support the future EU defence research programme through relevant security and dual-use research activities.
4.2. Customs risk management policy and the fight against fraud

4.2.a customs risk management and the fight against fraud - carry out research and analysis, and develop and test new technologies, prototype, applications as well as data infrastructure and systems to help manage safety, security, financial and other customs risks connected with the cross-border movement of goods, combat fraud and other types of criminal activity, e.g. enhance customs risks analysis and anti-fraud investigation by using trade data on the

215 - SITAF-ST JRC.I.3	285 - SITAF- CORE Statistics and Information Technologies for Anti-Fraud - Core Methods and Dissemination Tools	Building on JRC's extensive experience in modelling, developing & implementing statistical procedures for detecting patterns in frauds against the budget of the EU and MS, SITAF-BASE improves & updates statistical and data mining methods for fraud detection & extends their application to other domains and policies. SITAF-BASE's research activities cover improving versatility of statistical procedures to handle data of different formats; improving their computational efficiency & scalability, and their accessibility to users. The WP will also: (1) Expand the scope of application of the reference web platform for all SITAF-ST statistical tools (WebAriadne), beyond anti-fraud, in order to make it a general-purpose data mining and statistical processing tool. This will help increase the user base and visibility of the application, which in turn will be instrumental in broadening the range of application of SITAF-ST's tools. (2) Re-design THESEUS, the web-based resource used to disseminate results of applications of the SITAF-ST statistical suite for authorized users in the EC and Member State anti-fraud services. THESEUS will have a brand-new user-centric workflow with a view to becoming a collaborative tool for sharing and working on specific results among THESEUS users (either part of the users' team or the whole THESEUS community).	JRC.I.3 Domenico PERROTTA	4.2.a	OLAF	JRC	Nicholas SHAW	GROW TAXUD	Cust Aut MS - MS Customs Authorities	01/01/2017 15/12/2021	INS-RS	201801	Integrated statistical framework and exploratory work for trade data	The detection of patterns in frauds against the EU budget should take into account complex features (e.g. transformations, dense areas, multiple groups, sub-populations of different variabilities). We will build a module capable of recognizing automatically the presence of these features and applying the most appropriate model to the data. This will be achieved by integrating into a unique framework adaptive trimming, robust clustering, thinning methods and robust transformations. We will also consolidate in a position paper our experience in trade-based money laundering, in view of opening collaboration with relevant institutions (EUROPOL, national banks).	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201802	Price indices and economic models from EU customs data	Official statistics research computes import and export price indices using results of survey data. SITAF is in the unique position to access complete sets of import and export declarations for a number of MS, which can be used to monitor trade prices and volumes without resorting to survey exercises. These data, processed by robust statistics to cope with errors, seasonality and trends, will be used to build import/export price indices for EU market commodities. In addition, we will extend our previous forward-looking studies on flexible statistical models for describing international trade volumes to products relevant to the EU common market, e.g. coffee, steel and oil. The work goes in support of public institutions (e.g. DG GROW, ESTAT, TRADE & national statistical offices) and private trade operators interested in the dynamics of international trade and their effects on the market.	16/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201901	Collaboration with other JRC Units and Projects	(1) Collaborate with Unit B1 (PRJ 340-FINSTAR) and Unit E2 on novel applications of Robust Statistics. Applications, mainly selected by the partner Unit, include (i) segmentation of banking data, (ii) robust imputation of financial data, (iii) communities' detection in large networks, (iv) applicability of graph theory and network analysis to complex trade flows (carousels and deflection of trade). (2) Assist other JRC units in exploiting SITAF's competencies in statistical modeling and results on trade analysis. - GI17, WPK STANP. Estimate robust trade prices and detect inconsistencies in export data of selected products related to strategic goods. Results will be used by the IAEA, DG TRADE, DG DEVCO and MS customs. - E5, WPK 297-CTR-ANA: robust trade price estimates and methods for outlier detection & clustering. - E1, WPK 287-CMTT - Statistics for timely and robust tsunami alerting systems. (3) Contribute to the project 7599-JRC-Data4Policy (WPK 6521-JRC-Data4Policy).	15/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												202101	FSDA	Flexible Statistics Data Analysis (FSDA) is an open MATLAB software library in support of a robust and efficient statistical analysis of data sets, ensuring an output unaffected by anomalies in the provided data or deviations from model assumptions. The project is jointly run since 2006 with the University of Parma and is now internationally recognized as a unique tool for robust statistical modelling. The deliverable's work ensures the continuous enrichment of FSDA and its wide applicability	15/12/2021	Scientific information systems and databases
												202102	From THESEUS to my-THESEUS	THESEUS is a web-based resource to disseminate results of application of the SITAF-ST statistical suite for authorized users in the EC and Member State anti-fraud services. The deliverable consists of (1) continuous annual enrichments with new features and signals; (2) a brand-new user-centric workflow with a view to becoming a collaborative tool for sharing and working on specific results among THESEUS users. This requires code refactoring, new functional requirements & user needs evaluation.	15/12/2021	Technical systems
												202103	The WebARIADNE statistical processing platform	This deliverable progressively expands WebAriadne's scope of application beyond anti-fraud, in order to make it a general-purpose data mining and statistical processing tool. Intermediate tasks include: export of results to Theseus, user group management, advanced management of datasets and results, finer-grained control of applications and datasets access, support for R, packaged WebAriadne installations, real-time analysis of results from multiple runs, additional statistical procedures.	15/12/2021	Scientific information systems and databases
												353 - ConTraffic JRC.E.5	297 - CTR-ANA Analytics on container traffic data	Research and prototype development of analytics tools and techniques for the more efficient use of information on the movement and status of shipping containers. The main type of data covered is expected to be the Container Status Messages collected based on the (EU) 2015/1525 reforming (EC) 515/97 but other types of data can be included if and when they become available. The methods and prototype tools will advance the state-of-the-art for IT systems used by customs for risk management and antifraud by providing effective ways to use the new data on the movement and status of containers. The work extends and complements the work done in other work packages of ConTraffic on improving customs risk management and the efficient implementation of (EU) 2015/1525 by exploring further research ideas. The work will mainly focus on developing data mining techniques as well as visual analytics tools that can support these domains. The prototype tools will cover also situation awareness needs through the provision of up-to-date statistical information on the flow of shipping containers, their means of transport and the goods transported. Such situation awareness information can be useful for crisis management, trade policies, transportation policies as well as for EUROSTAT. Research activities will focus on data mining, visual analytics, risk assessment, statistical analysis and anomaly detection in large datasets describing the transportation of goods in shipping container. This Work Package will also maintain the main IT infrastructure of ConTraffic that is needed to collect, store, index and process the data. This includes not only the hardware and IT systems but also the software and	JRC.E.5 Aris TSOIS	4.2.a
4	Visual analytics and data mining for toolkit	Extend the work of the previous years and by talking account the results in other Work Packages of ConTraffic (CTR-REG-3, CTR-RISK) work on the finalization of data mining and visual analytics tools related to shipping containers based also on the feedback received from MS Customs on the usage of previous prototypes. This deliverable may be decided to be implemented under a separated Administrative Arrangement with OLAF or DG TAXUD. This work may also lead to the publishing of research articles.	06/12/2019	JRC technical reports												
5	ConTraffic data for trade, transport & statistics	Study the applicability and usefulness of ConTraffic data for providing up-to-date situation awareness information to authorities dealing with trade, transport or other statistics involving shipping containers. The work may include the development of additional tools and visualization methods in ConTraffic to provide the required statistical information on the flows of containers and goods. The work includes collaboration with DG TRADE, DG MOVE and EUROSTAT, subject to their availability.	06/12/2019	JRC technical reports												
353 - ConTraffic JRC.E.5	746 - FP7-CORE Consistently Optimized Resilient Secure Global Supply Chains	This WPK represents the participation of JRC in the FP7 CORE demonstration project. CORE will consolidate, amplify and demonstrate EU knowledge and capabilities and international cooperation for securing supply chains whilst maintaining or improving business performance. CORE is driven by requirements of the customs and law enforcement communities to increase cooperative security risk management and of the business communities to integrate compliance and trade facilitation concepts. This big project unites the grand majority of all relevant supply chain security partners. The work of JRC aims to strengthen security and protection of citizens and supply chain security while	JRC.E.5 Aris TSOIS	4.2.a	TAXUD	HOME	Agnieszka MARCINIAK (REA)	GROW MOVE OLAF	Cust Aut MS - MS Customs Authorities WCO - World Customs Organization	01/05/2014 30/04/2018	CON-IA	5	2018 JRC contribution to CORE	Technical report consolidating the contribution of JRC to the CORE (FP7) project in 2018	30/04/2018	JRC Technical reports

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215 - SITAF-ST JRC.I.3	3365 - WP2 - AMT5 Phase II AUTOMATED MONITORING TOOL (AMT) STEP 5 - Phase II	This is the fifth in a sequence of support projects which began with the Enlargement of the EU in 2004. The general aim of the AMT series is to develop and apply novel statistical methods to anti-fraud relevant data and disseminate results via a purpose built web-based platform, THESEUS. This project will further advance applications and development work in the systematic statistical detection of patterns of anti-fraud relevance in large volumes of trade and other relevant data and will further disseminate the derived results in OLAF, the Member States and other interested services. In Phase II priority goes to the study of the deflection of trade problem and the analysis of trade data at disaggregated level, i.e. import/export declarations containing the value and quantity of individual transactions into the EU.	JRC.I.3 Domenico PERROTTA	4.2.a	OLAF	OLAF	Nicholas Shaw		Cust Aut MS - MS Customs Authorities	03/11/2016 02/11/2018	CON-AA	201801	Enhanced EU Fraud detection capability - III	The second deliverable of the AMT phase II focuses on the detection of specific patterns in declaration level data. These are clusters and systematic under/over-valuation and price outliers for heteroscedastic populations. This work is meant to intensify the support to Member States, especially in view of the revision of the 515/97 Regulation.	31/10/2018	Project management related documents/reports identified as outputs of the JRC Work Programme
353 - ConTraffic JRC.E.5	3782 - CTR-RISK ConTraffic for Customs Risk Management	Collaboration with DG TAXUD and MS Customs authorities in implementing action 6.2 of COM(2014) 527 for improving the customs risk management. Focusing on R&D techniques and prototype systems related to the usage of Container Status Messages collected under Reg (EC) 515/97. Support DG TAXUD in defining how this new type of information can be linked to the existing customs systems and used in an operational manner. The work is expected to have an impact on Customs policy and the Customs 2020 programme. This work requires the continued operation of the ConTraffic IT system based on which the various pilot developments will take place.	JRC.E.5 Aris TSOIS	4.2.a	TAXUD	TAXUD	HORAN Colin (TAXUD)	HOME OLAF	Cust Aut MS - MS Customs Authorities	16/04/2016 15/04/2019	CON-AA					
353 - ConTraffic JRC.E.5	4240 - CTR-REG-3 Scientific and technical support for developing analytics functions in the EU Antifraud System (AFIS)	Scientific and technological support for the development of advanced analytics modules in OLAF's AFIS system. The first module will implement an EU-wide system for the automatic and systematic origin verification of customs import declarations (SAD) based on Container Status Messages (CSM), similar to the ConTraffic-SAD pilot system developed by JRC. The second module, a data mining visual analytics tool, will allow users to interactively analyse and visualize CSM data and related customs data, like SAD declarations or transit data.	JRC.E.5 Enrico CHECCHI	4.2.a	OLAF	OLAF	Jose Perdigao	TAXUD	Cust Aut MS - MS Customs Authorities	01/01/2018 31/12/2018	CON-AA	1	Implementation of advanced analytics in AFIS	JRC will support OLAF in the implementation of advanced analytic functionalities in the Anti-fraud information system (AFIS). The objective is to develop and put in production a module for the systematic origin verification of customs import declarations (SAD) based on Container Status Messages (CSM) and a visual analytic module for the CSM and other data visualisation and exploration. The report will document the support provided by JRC and the results achieved.	14/12/2018	JRC technical reports
5133 - Illicit JRC.F.4	5720 - CLEN2SAND2 Identification of New Psychoactive Substances (NPS) and unknown chemicals part II	CLEN2SAND2 addresses the needs of DG TAXUD and of the Customs laboratories European Network (CLEN) for the identification of illicit substances in imported goods, such as new psychoactive substances (NPS), drug precursors or diverted medicines. In coordination with key EU and International organisations (Customs, European Network of Forensic Science Institutes, NIST, EMCDDA) the project contributes to establish guidelines for analytical methods and interpretation of data of new unknown substances found on the market and to set up an efficient ICT system at EU and international level for efficient sharing of data and knowledge on these chemical substances. The high level analytical facilities of the JRC are used for providing scientific and technical support for identification of unknown chemicals that Member States customs laboratories could not identify.	JRC.F.4 Claude GUILLOU	4.2.a	TAXUD	TAXUD	Herve SCHEPERS	GROW HOME OLAF	Cust Aut MS - MS Customs Authorities EMCDDA - European Monitoring Centre for Drugs and Drug Addiction	28/11/2016 27/11/2018	CON-AA	40	Annual report to DG TAXUD	Annual report to DG TAXUD summarising scientific developments aimed to improve knowledge of NPS and unknown chemicals covering items like new analytical and informatics based approaches for the identification of new drugs, scientific tools for their classification as analogues of already controlled drugs also in the view to support the legitimate trade. The report will present a summary of all the activities performed also as participations in Customs or other relevant workshops or meetings.	30/03/2018	Science-for-policy reports
												50	Contribution to harmonised European information systems for collection and sharing of analytical data and scientific knowledge on illicit substances	Report to DG TAXUD, including the update of spectral libraries on NPS in 2018 and a summary of all the activities performed also as participations in Customs2020 workshops or other relevant meetings.	15/11/2018	JRC technical reports
353 - ConTraffic JRC.E.5	6160 - PROFILE PROFILE - Architectures and data analytics for customs risk management of the international goods supply chain trade movements	The overall objective of this project is to investigate how state of the art data analytics methods can be applied to improve customs risk management, taking into account (1) internal data available in the customs administration, (2) external data available in other customs agencies or other authorities, and (3) publicly available data (e-commerce websites, social media, dark web etc.). The focus of JRC will be on visual analytics tools for improved container profiling. The work will be done in collaboration with the project partners and it will demonstrate the value of combining heterogeneous data from multiple EU customs administrations, along with EU-centralized container route data (ConTraffic). Specialized data analytics techniques will be developed to extract useful information by combining the multiple sources while the customs officers will have access to the results through a tailor-made visual analytics tool developed based on the existing ConTraffic visual analytics module.	JRC.E.5 Aris TSOIS	4.2.a	TAXUD	HOME	n/a	MOVE OLAF TRADE	Cust Aut MS - MS Customs Authorities	01/05/2018 30/04/2021	CON-IA	1	Report on the JRC contributions to the PROFILE project	This technical report will include all contributions given by JRC to the various H2020 project deliverables (still to be defined) that will be submitted in the 3 year duration of the project.	30/04/2021	JRC technical reports
5133 - Illicit JRC.F.4	6409 - TOBLAB Identification of illicit tobacco products	The subject of the AA is the operation of a facility for the chemical analysis of authentic and illicit cigarettes and tobacco products in order to identify whether they are genuine or contraband and counterfeit cigarettes. This work will support customs administrations in the Member States in applying the Anti-Fraud Cooperation Agreement that have been concluded with major tobacco processors with respect to determining whether seized cigarettes are genuine or counterfeit products. The legal basis for this work package is Article 8 (a) (iii) of Regulation (EU) No 250/2014 establishing a programme to promote activities in the field of the protection of the financial interests of the European Union (Hercule III programme). Characteristic features of authentic tobacco products (chemical and biological composition tobacco, filters, paper, printing ink, etc) will be measured and fed into the ToSMA database owned by DG OLAF, that will be used to generate statistical models to decide whether seized tobacco products are counterfeit (produced and sold illegally) or contraband (legally produced but illegally sold). Tobacco products submitted by customs administrations in the Member States will be	JRC.F.4 Maria Beatriz DE LA CALLE GUNTINAS	4.2.a	OLAF	OLAF	n/a	SANTE TAXUD	Cust Aut MS - MS Customs Authorities EUROPOL - EUROPOL	12/07/2017 11/07/2018	CON-AA	1	Support to DG OLAF and MSs in identification of illicit tobacco products	The JRC will analyse tobacco samples (mostly cigarettes and raw tobacco) seized by Member States (MSs) for authentication purposes. Reports summarising the outcome of the analysis and the conclusions about the authenticity of the sample will be sent to the requesting MS and DG OLAF via the ToSMA database (owned and maintained by DG OLAF). The activities of the JRC will be presented in different fora (mostly customs and investigator networks) in the MSs. One workshop will be organised by the JRC for the network of laboratories in MSs involved in the analysis of tobacco and tobacco products in which the activities of the JRC in the last 12 months will be presented and relevant issues will be discussed. DG OLAF will receive in written an update about the outcome of the previously described activities.	11/07/2018	JRC technical reports
353 - ConTraffic JRC.E.5	6920 - INTEL4CUSTAF Scientific and technical support in advancing the antifraud EU customs data analytics capacity	This one year project is the first phase of a longer collaboration between JRC and OLAF aimed at a deeper engagement and collaboration with Member States in the area of data analysis. The specific objective of the project is to assist EU member states authorities to efficiently use customs information sources and to strengthen their analytical capacities in the anti-fraud Customs domain. The work will be conducted in close cooperation with OLAF. It will initiate by examining the existing Customs information sources and the recommendations of other work groups or studies done in this field. A first workshop will be organised with MS customs domain experts to identify key information sources and priority business use-cases. The first workshop will be followed by a visit to some MS Customs to better understand and document their on-going or planned work. A second workshop will share the information collected during the year. The final report of the project will include the results, conclusion and recommendations.	JRC.E.5 Enrico CHECCHI	4.2.a	OLAF	OLAF	n/a	TAXUD	Cust Aut MS - MS Customs Authorities	01/01/2018 31/12/2018	CON-AA	201801	Customs data analysis for anti-fraud - Final Report	The final report summarises the main results and conclusions from the activities conducted by JRC in the context of the project (study on the Customs data current usage, assessment of ongoing activities, meetings with MS Customs experts, workshops, and surveys).	15/12/2018	JRC technical reports
5. A deeper and fairer Economic and Monetary Union																
5.1. Economic and Monetary Union																
5.1.a model and carry out socioeconomic analyses to improve macroeconomic, budgetary, structural, and financial developments and policies in the EU																
203 - MACFIS JRC.B.1	3566 - GAP-GM-QUEST Support to European Semester: Stability and Growth Pact, EC economic projections and Macroeconomic Imbalance Procedure	Support to DG ECFIN in the context of the European Semester (Stability and Growth Pact, Economic Forecasts, In-depth Reviews, Macroeconomic Imbalance Procedure) Monitoring of fiscal imbalances and fiscal consolidation in application of the Stability & Growth Pact and its recent updates Two Pack and Six Pack. The activity includes development and maintenance of Program GAP, regular participation to the Output Gap Working Group (OGWG), trainings to Member States, execution of the annual work-program agreed by the OGWG, as well as targeted studies following specific requests from DG ECFIN, the OGWG and its parent committees EPC and EFC. Computational and modelling tasks needed to developing and estimate the macroeconomic models GM and QUEST, jointly developed with ECFIN, and their policy applications.	JRC.B.1 Marco RATTO	5.1.a	ECFIN	JRC	Werner ROEGER	FISMA	MS EU - Member states EU	01/01/2016 31/12/2020	INS-RS	1Semester2 018	Support to European Semester 2018: Economic Forecasts and Output GAP	In the context of strengthened EU economic governance (European Semester and Macroeconomic Imbalance procedure), in collaboration with DG ECFIN, perform model-based calculations with the GM model to provide inputs to official EC Forecast Documents for individual euro area countries and the euro area aggregate and provide methodological inputs to the Output Gap Working Group with maintenance and upgrade of program GAP.	14/12/2018	JRC contributions to policy documents
												2Semester2 019	Support to European Semester 2019: Economic Forecasts and Output GAP	In the context of strengthened EU economic governance (European Semester and Macroeconomic Imbalance procedure), in collaboration with DG ECFIN, perform model-based calculations with the GM model to provide inputs to official EC Forecast Documents for individual euro area countries and the euro area aggregate and provide methodological inputs to the Output Gap Working Group with maintenance and upgrade of program GAP.	15/12/2019	JRC contributions to policy documents
203 - MACFIS JRC.B.1	4865 - AA-SICOMA-2017 Modelling the macroeconomic impact of competition policies	Objective of this WPK is the assessment of the macroeconomic impact of competition policy enforcement in the EU by exploiting updated information on cartel and merger decisions by the European Commission. The work consists in simulating competition policy enforcement by the European Commission, using the QUEST III model developed by DG ECFIN in collaboration with the JRC. Model simulations will be aimed at exploiting the available information on the sectoral distribution of Commission cartel and merger cases by tracking the interlinkages between sectors. In addition, support will be given to the development and testing of alternative model specifications aimed at better capturing the market entry/exit effects of Competition policy decisions at the macroeconomic level.	JRC.B.1 BEATRICE PATARACCHIA	5.1.a	COMP	COMP	Fabienne ILZKOVITZ			02/01/2017 13/12/2019	CON-AA	1	Simulating macroeconomic impact competition policy	Update of existing model simulations with QUEST using 2016 data on customer savings 2. Performance of model simulations exploiting the sector distribution of Commission cartel and merger decisions [done by JRC.J5] 3. Conduct of model simulations with an extended version of QUEST including a market entry-exit transmission channel 4. Integration of the results obtained under the previous three objectives in a single set of model simulations. [joint with JRC.J5] [Objective 3 MACFIS Project]	15/12/2019	Science-for-policy reports
												3	Competition Policies and Growth	This deliverable includes the scientific output related to the ex-post assessment of Competition policies in terms of macroeconomic impact (growth and distributional effects). [Objective 4 MACFIS Project]	15/12/2019	Article contribution to a monograph or other periodicals
203 - MACFIS JRC.B.1	4866 - AA-GM-2017 Global Multicountry model	This WPK aims at extending, jointly with DG ECFIN, the Global Multicountry model (GM). In particular, within the WPk, the following developments are foreseen: 1. implementing and testing the GM model specifications, also by designing relevant policy scenarios; 2. performing estimation exercises on selected country disaggregation; 3. maintain/develop routines which allow for a frequent re-estimation of the model (before each forecasting exercise) 4. maintain/improve the interface such as to allow regular use of the model by non-experiences model users. This activities use resources which are not foreseen in the MoU JRC BXL.MOU.32922-2012 between DG ECFIN and the JRC.	JRC.B.1 BEATRICE PATARACCHIA	5.1.a	ECFIN	ECFIN	Werner ROEGER			01/07/2017 30/06/2018	CON-AA	1	Model development, simulations and estimations	Implement and test the GM model specifications, also by designing relevant policy scenarios. Perform estimation exercises, allowing flexibility in the choice of countries to be included (countries within Euro Area). [Objective 2-5 MACFIS Project]	30/06/2018	Science-for-policy reports
												2	End user provisions	Provide routines which allow for a frequent re-estimation of the model (before each forecasting exercise) in a user friendly interface such as to allow regular use of the model by non-experiences model users. [Objectives 2-5 MACFIS project]	30/06/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
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6080 - CAS-2 JRC.A.5	5260 - CAS2-EconFor Big data and forecasting economic developments	Measuring and forecasting economic activity are challenging tasks. One reason for this difficulty is that the typical proxies for economic activity, such as real GDP, are aggregated measures of highly heterogeneous disaggregates that summarise information from many sectors, consumers, firms, and types of goods. In addition, there is an increasingly important interaction between the real economy and the financial sector, as the last recession of 2008-2009 has demonstrated. This implies that imbalances in the financial sector and mispricing in asset prices spill over to the real sector by amplifying business cycle fluctuations. Another challenge in analysing and predicting macroeconomic performance is that many relevant economic variables are available at low frequencies, such as quarterly. This is a particularly relevant problem when the economy is entering and exiting a recession in which timely and precise information would be useful to policy-makers in order to design actions to mitigate the recessionary effects or accelerate the recovery. Big Data has a great potential to provide much higher frequency information that, if integrated into economic forecasting models, could provide a more robust projection of future economic developments. Increasing the accuracy of now-casts and forecasts of economic activity thus requires resolving these issues in a unified framework. There have been several proposals to solve each of these problems, but a general framework including use of big data has still to emerge that delivers satisfactory results both	JRC.A.5 Nikolaos STILIANAKIS	5.1.a	ECFIN	JRC	n/a	EMPL ESTAT GROW TRADE	- Interdisciplinary Centre for Technological Analysis and Forecasting - FOUNDATION FOR MARKET ECONOMY EBRD - European Bank for Reconstruction and Development ECB - European Central Bank OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank	01/07/2017 30/06/2020	INS-CAS	1	Policy report in forecasting economic development	This work is part of the bigger project on now- and forecast economic development. This policy report is going to present the new methods developed and initial results on how to increase the accuracy of now- and forecasts of economic activity. The results describe how our approach investigates the linkages between the financial sector and the real economy and the ever changing nature of the credit channel. The contribution of the use of mixed frequency data will also be presented.	31/12/2018	Science-for-policy reports	
												2	The use of forecast distributions and high frequency indicators of economic activity in economic forecasting	This work is going to present the methodology and technical work employed to produce the results described in the policy report under deliverable 1. They include exploration of alternative approaches in early forecast in economics using forecast distributions of low or higher frequency variables such as GDP, or monthly, weekly, daily data, disaggregated economic and financial variables. A contribution to the improvement of the accuracy of now- and forecasts can be the availability of high-frequency indicators in economic activity. Creation of high-frequency datasets on the behaviour of consumers, investors, and firms, e.g. collection of prices from thousand of products from internet retailers. The role of the expectation of future growth of consumers and professional forecasters.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
203 - MACFIS JRC.B.1	6357 - AA-GM-2018 Global Multicountry Model	This WPK aims at extending, jointly with DG ECFIN, the Global Multicountry model (GM). In particular, within the WPK, the following developments are foreseen: 1. implementing and testing extensions of GM model specifications, also by designing relevant policy scenarios; 2. performing estimation exercises on selected country dis-aggregation; 3. maintain/develop routines which allow for a frequent re-estimation of the model (before each forecasting exercise) 4. maintain/improve the interface such as to allow regular use of the model by non-experiences model users, such as DG ECFIN Country Desks and Forecast Units	JRC.B.1 BEATRICE PATARACCHIA	5.1.a	ECFIN	ECFIN	n/a			01/07/2018 30/06/2019	CON-AA	1	Model development, simulations and estimations	Implement and test the GM model specifications, also by designing relevant policy scenarios. Perform estimation exercises, allowing flexibility in the choice of countries to be included (countries within Euro Area).	30/06/2019	Science-for-policy reports	
												2	End users provisions	Provide routines which allow for a frequent re-estimation of the model (before each forecasting exercise) in a user friendly interface such as to allow regular use of the model by non-experiences model users.	30/06/2019	Science-for-policy reports	
7512 - FAIRNESS JRC.I.1	6364 - Fairness_MP_IO Multidimensional Poverty and Inequality of Opportunities	This work package will provide additional evidence on multidimensional poverty and fairness-related topics. Most of the existing research studies do not examine the multidimensionality of fairness. A policy based approach on fairness however needs also to address those individuals who are the most disadvantaged groups in regard to a number of dimensions, such as education, income and location. More specifically the WPK will address the following themes: • Multigenerational mobility in Europe: the special Eurobarometer on Fairness will offer the opportunity to study the parents and grand-parents effects on educational and occupational mobilities across the 28 EU countries. Information on the characteristics of the location during childhood and adult life will help providing some evidence on the importance of spatial intergenerational mobility in Europe. • Spatial and/or social segregation: this component of the WPK will consider how members of different groups tend to cluster and interact with peers who have similar characteristics, i.e. segregation. One part of this research will be specifically directed on disadvantaged groups in society and based on Dutch administrative data. The second part will examine educational segregation during the life course	JRC.I.1 SYLKE SCHNEPF	5.1.a	JRC	JRC	n/a	EAC ECFIN ENPL ENV HOME JUST REGIO SANTE SG	Council EU - Council of the European Union OECD - Organisation for Economic Co-operation and Development (OECD) UNDESA - UN Department of Economic and Social Affairs WB - World Bank	01/01/2018 31/12/2019	INS-RS	01	Multidimensional Poverty and Inequality of Opportunities	This Science for Policy Report will build on the results of the individual research lines of the work package related to multidimensional poverty, inequality of opportunities and the marginalization of minority groups. The empirical findings will feed into the second JRC report on Fairness.	31/12/2019	Science-for-policy reports	
7512 - FAIRNESS JRC.I.1	6365 - Fairness_CoP Community of Practice on Fairness	The purpose of the Community of Practice on Fairness is to share knowledge and foster an informed dialogue on the multidimensional aspects of fairness to better inform policy. The community will also constitute an appropriate environment to identify synergies and areas of collaboration, as well as to generate new knowledge for evidence-based policy, whilst capitalizing on the multidisciplinary expertise of its members and the JRC. The Community will bring together colleagues from the Commission and relevant research agencies working on fairness related issues. The WP includes three strands of activity: (a) knowledge sharing on fairness issues through the organization of workshops and the setup of a platform on connected, (b) knowledge production and management with the regular production of policy briefs and (c) the creation of a network of experts which will liaise with relevant international organizations and academics. This work package foresees cross-units collaborations. I.1 leads the WPK, Units B.1,B.2, B.3 and B.4 will be in charge of some of the workshops planned in the next years.	JRC.I.1 Beatrice D'HOMBRES	5.1.a	JRC	JRC	n/a	EAC ECFIN ENPL ESTAT GROW HOME JRC JUST REGIO SANTE	OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank	01/01/2018 31/12/2020	INS-RS	1	Workshop on fairness related topics	Three workshops will be organized every year, with each of these workshops being dedicated to a specific theme. The first four workshops to be planned are the following ones: (i) Social mobility and the role of education (responsible units: B4 in collaboration with I1) (ii) Segregation, marginalized groups and intergenerational spatial inequality (responsible unit I.1), (iii) Income inequality and its policy determinants – beyond a MS level analysis (responsible units: B.1 & B.2), Spatial disparities: access to services (responsible unit B.3). These workshops will lead to the preparation of policy briefs that will then feed into the 2020 Fairness report. More generally, the purpose of the CoP is to stimulate cross-organizational collaborations and knowledge sharing as well as to promote the communication between the knowledge production side and the policy making side. Ultimately the activities under this WPK should provide guidance for the implementation of equity-weighted policies	31/12/2019	Article contribution to a monograph or other periodicals	
7512 - FAIRNESS JRC.I.1	6404 - Fairness_INEQ Income Inequality	This work package continues the work started in two previous work packages (2055, CrinGrn; 2822, H-Fin). It builds on issues raised in the JRC Report on Fairness, and also connects to work on resilience. It both responds to questions from partner DGs, and intends to broaden their perspective. The WP focuses on drivers and consequences of income inequality, shifting the focus from MS-level	JRC.B.1 PETER BENZUR	5.1.a	ECFIN	JRC	n/a	COLLEGE COMP ENPL EPSC	OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank	01/01/2018 31/12/2019	INS-UR	Inequalitych apter	Income inequality, its drivers and consequences – beyond a MS level	This Science for Policy Report would build on the results of the individual research lines of the work package, and the associated knowledge management and synthesis activities. As such, it would represent the base for a corresponding chapter in the 2020 JRC report on Fairness.	31/12/2019	Science-for-policy reports	
4820 - CAPMAU JRC.B.1	6942 - ACECO Anti-Competitive Effects of Common Ownership	The aim of this Administrative Arrangement (AA) is to address a specific request from DG COMP D2 to JRC B1 for a study to investigate anti-competitive effects of the so-called common ownership of quoted companies in Europe. Common ownership is a minority ownership (less than 50%) of two firms held by a third entity, the common owner. However, in US there is evidence that common owners end up holding minority ownership of several firms within the same sector, and this raises anti-competitive concerns as common ownership lead to higher product market pricing. The effect of common ownership has hardly been analysed in Europe; this project is aimed at filling the gap.	JRC.B.1 ISSAM HALLAK	5.1.a	COMP	COMP	n/a	GROW		01/12/2017 30/11/2018	CON-AA	1	final report	Report with the detailed analysis. Content to be agreed with DG COMP	29/11/2018	JRC technical reports	
5.2. Financial stability, financial services and Capital Markets Union																	
5.2.a carry out quantitative analyses and behavioural studies for the development of the Capital Markets Union and completion of the Banking Union.																	
4820 - CAPMAU JRC.B.1	4826 - CMU&FIRMS CMU and firms' financing	In support to the initiatives stated in the Capital Markets Union Action Plan, the WP CMU&FIRMS aims at exploring how the financing of EU non-financial companies (NFCs) can be improved. The core objectives lie in exploring some crucial issues in firms' financing and how they can be addressed. First, our studies explore the determinants of SMEs financial constraints, and how these constraints can be reduced. They also investigate the relationship between the ownership structure of firms and their performance. Second, we are interested in broadening NFCs financing tools. Our studies thus investigate the determinants of medium and large firms' funding choices between bank loans, bonds, and equity. They look at which companies have access to which financing instruments, how firms address barriers to capital market, whether financing instruments have an impact on firms' financial decisions and performance and to what extent firms' financial situation is linked to competitiveness and market dynamics.	JRC.B.1 ISSAM HALLAK	5.2.a	FISMA	JRC	JAVIER VILLAR BURKE	COMP ECFIN ENPL REGIO			01/01/2018 28/12/2019	INS-RS	1	Contribution to the CMU follow up	Support to the revision of the Capital Markets Union initiative, in particular inputs for the new EC Communication on the Completion of the CMU, planned for 2019. The research activities will include quantitative and econometric analyses on (i) firms financing (especially SMEs), bottlenecks and way forward; (ii) integration of EU financial markets and risk sharing. Additional research topics may emerge depending on priorities established in the next CMU initiatives.	28/12/2019	Science-for-policy reports
4820 - CAPMAU JRC.B.1	4827 - FIRS Financial Integration and Risk Sharing	The work package Financial Integration and Risk Sharing (FIRS) explores to what extent European financial markets are integrated, how financial integration can be measured and monitored and which is the relationship between financial stability and financial integration. To this purpose FIRS investigates whether and to what extent domestic financial markets are sensitive to cross-border shocks. It also analyses bilateral cross-border investments to highlight the magnitude, origin and final destination of cross-border flows of national savings according to the nature of the flows (e.g. portfolio or direct investments) and bottlenecks that significantly hamper cross-border portfolio investments. This is done using a dataset jointly managed by JRC and DG ECFIN on cross-border financial stocks and flows, for more than 100 countries worldwide. This work will complement that carried out under FIMMINT3. Another area of work in FIRS is related to risk sharing. Full risk-sharing among countries can be achieved where domestic growth is insensitive to fluctuations due to local economic shocks. This can be achieved with more developed and integrated capital markets, more banks operation at a	JRC.B.1 Michela NARDO	5.2.a	FISMA	JRC	JAVIER VILLAR BURKE	ECFIN			01/01/2018 27/12/2019	INS-RS	1	Integration and risk sharing in EU countries	In the context of Commission initiatives in support to the CMU revision plan and in collaboration with DG FISMA, perform econometric analysis and modelling of EU cross-border financial interlinkages to provide inputs to official EC Policy Documents on financial market integration (including home bias and diversification on financial investments). Supply methodological inputs and analysis on the degree of country-specific shock smoothing actually achieved via international capital markets.	28/12/2018	Science-for-policy reports
5.2.b assess initiatives related to the regulation of the financial sector and to new dynamics and risks, notably sustainability issues; maintain and further develop a data infrastructure for analyses of the EU financial sector. The assessment of initiatives includes support with the development of impact assessments in terms of quantification and modelling.																	
340 - FINSTAR JRC.B.1	901 - ReFIMABaU Support to EC initiatives for Resilience of Financial Intermediaries and Markets and Architecture of the Banking Union	ReFIMABaU supports Commission services in improving the resilience of EU financial services sector to crises & in developing the architecture of a Banking & Financial Union. * ex-ante impact assessment of policy options for financial services sector, aimed at improving financial stability, micro & macro prudential regulation, risk-based fees to deposit insurance & resolution schemes; * ex-post evaluation of financial regulation, to assess gaps, inconsistencies & unintended effects; * analysis of risks to financial & economic stability to develop frameworks & tools for the monitoring of systemic risk, the resilience of financial markets & institutions & the emergence of new risks.	JRC.B.1 Marco PETRACCO GIUDICI	5.2.b	FISMA	JRC	Martin SPOLC	CLIMA COMP ECFIN ENER ENV TAXUD	- Organisation for Economic Cooperation and Development ECB - European Central Bank WB - World Bank	01/01/2016 31/12/2020	INS-RS	ReFISBAU	Building a resilient and competitive Financial System and Banking Union	In the context of initiatives aimed at completing and implementing the Banking Union and developing a resilient financial system, in collaboration with DG FISMA and DG ECFIN, perform model-based simulations and other quantitative analyses feeding official EC documents and non-papers for negotiations. Activities will include the design of risk-based contributions for the European Deposit Insurance Scheme, the implementation of measures of Deposit Guarantees Schemes Directive, the creation of a systemic risk assessment framework for the EC role as a resolution authority, and its participation to systemic risk monitoring bodies.	14/12/2018	JRC contributions to policy documents	
340 - FINSTAR JRC.B.1	9901 - APS An Absolute Performance Score for financial portfolios performance measures, financial crises	We propose to develop and patent an "Absolute Performance Score" (APS) for assessing the performance, in terms of allocation, of a financial investment strategy. APS will provide an absolute assessment of investments' returns, independently on market conditions, by directly assessing allocation choices. In the specialized literature this constitutes an absolute novelty	JRC.B.1 LUDOVIC CALES	5.2.b	FISMA	JRC	n/a	COMP ECFIN		01/03/2017 28/02/2018	INS-PC	1	APS prototype	Development of routines to compute APS and deployment of a software prototype for a testing phase preliminary to start the patenting procedure under the Commission patent framework	28/02/2018	Technical systems	
		GENERAL MISSION: DIIRAC supports the Single Resolution Board. In particular, the cooperation is aimed at providing evidence to validate the Board's methodology for calculating banks' contributions to the Single Resolution Fund.										SRB181	JRC Independent impl. of contributions to SRF	A set of results obtained with the application of the JRC independent implementation of the methodology to calculate ex-ante contributions to the SRF on an anonymized set of data to be provided by the SRB.	15/04/2018	Scientific information systems and databases	
		MAIN ACTIVITIES The main activities of the of project will be: (1) independently develop and implement an algorithm to calculate banks' risk adjusted contributions to the Single Resolution Fund, in line with current regulations and the decisions by the Board of SRB regarding their interpretation and application; (2) running such algorithm on a "test" data set provided by SRB; (3) liaising with SRB to compare results with those obtained with SRB's software solution for the calculation of contributions.										SRB182	JRC activities in support to the SRB approach.	A technical report on the activities, including the description of any changes that might have been necessary to align the JRC implemented methodology with the applicable regulation of the SRB approach.	15/04/2018	JRC technical reports	
												SRB183	Documented example of algorithm for SRF	A documented example of the implemented algorithm with a subset of data provided by the SRB.	15/04/2018	Scientific information systems and databases	

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340 - FINSTAR JRC.B.1	5941 - DIRAC Development of Independent Implementations of Risk Adjusted Contributions to Single Resolution Fund	using the same "test" data-set; (4) investigating the reasons for any deviations in results. METHODOLOGIES The JRC develops a software implementing the methodology defined by the legislation to compute the contributions that banks have to pay to the Single Resolution Fund. The software will run on a sample of confidential data from EU banks collected by the Single Resolution Board. POLICY RELEVANCE. The Single Resolution Fund is a key element of the new resolution framework put in place after the 2007 banking crisis. Banks are mandated to contribute to the Fund, based on the risk of having to use it for their own resolution. A correct implementation of the regulation establishing the amounts of such contribution is essential to maintain the operational capacity and the credibility of both the Fund and the Single Resolution Board. A good resolution mechanism ensures that the costs of bank distress are not transferred outside the banking system, in particular to taxpayers. The JRC results will be used by the Single Resolution Board to cross-check their own estimates of banks'	JRC.B.1 FRANCESCA DI GIROLAMO	5.2.b	JRC	JRC	n/a		SRB - Single Resolution Board	01/03/2017 28/02/2020	CON-TW	SRB191	JRC Independent impl. of contributions to SRF	A set of results obtained with the application of the JRC independent implementation of the methodology to calculate ex-ante contributions to the SRF on an anonymized set of data to be provided by the SRB.	15/04/2019	Scientific information systems and databases
												SRB192	JRC activities in support to the SRB	A technical report on the activities, including the description of any changes that might have been necessary to align the JRC implemented methodology with the applicable regulation of the SRB approach.	15/04/2019	JRC technical reports
												SRB193	Documented example of impl.algorithm for SRF	A documented example of the implemented algorithm with a subset of data provided by the SRB.	15/04/2019	Scientific information systems and databases
												SRB201	Final report of activities in support to the SRB	A technical report on the activities developed over full contract.	28/02/2020	JRC technical reports
340 - FINSTAR JRC.B.1	6430 - FIMMINT3 Financial Market Monitoring and Integration 3	The objective of this WPK is to provide additional resources to JRC's institutional work in support of DG FISMA's initiatives aimed at assessing the impact of financial regulation, either recently adopted or under elaboration, and the progress and barriers to capital markets integration. These activities complement the institutional work carried out under the FINSTAR-BANKREG and CAPMAU work-packages. The AA will be signed in the last quarter of 2017 and cover activities of 2018. The AA includes three work streams, related to Banking Union, Capital Markets Union and the implementation of the 5 Presidents Report. The methodologies employed will be econometric studies on publicly available or proprietary non-confidential data-sets. The work is requested by the customer DG in order to better reach its goals of improving on better regulation agenda targets.	JRC.B.1 Sara MACCAFERRI	5.2.b	FISMA	FISMA	n/a	ECFIN	ECB - European Central Bank	01/01/2018 31/12/2018	CON-AA	F3BankUnion	Support to the creation and monitoring of the	A study in support of initiatives for the establishment and monitoring of the European Banking Union (e.g. European Deposit Insurance Scheme).	14/12/2018	Science-for-policy reports
												F3CAPMAU	Support to the mid-term revision of the Capital Markets Union Action Plan	A scientific contribution to ongoing implementation of the Capital Markets Union Action Plan.	14/12/2018	Science-for-policy reports
												F3FivePres Report	Support to the implementation of measures set in the Five Presidents Report	Study in support to the implementation of measures set in the Five Presidents Report (e.g. finance and growth, finance and the real economy, ...).	14/12/2018	Science-for-policy reports
5102 - BIs JRC.I.2	7022 - BI-Switch Applying behavioural insights to encourage consumer switching of financial products	The application of insights from psychology and behavioural economics to policy analysis has received significant attention by policy-makers around the world. Since 2008, the European Commission (EC) has been a front-runner in using behavioural insights to inform legislation and regulatory policy. The main objective of this Administrative Arrangement (AA) is to support DG FISMA in gathering policy-relevant insights in view of the implementation of the Consumer Financial Services Action Plan adopted by the Commission in March 2017. JRC I.2 will examine ways to improve consumer's decision-making with regard to switching of retail financial products and put forward policy recommendations aimed at empowering and activating consumers in the financial market.	JRC.I.2 Joana SOUSA LOURENCO	5.2.b	FISMA	FISMA	n/a			01/04/2018 31/05/2019	CON-AA	201901	Final report on applying behavioural insights to consumer switching of financial products	The final report will encompass the literature review, background, detailed methodology, and data analyses for the lab and online experiments, conclusions and policy recommendations	30/04/2019	JRC technical reports
4820 - CAPMAU JRC.B.1	7202 - EU-IFDI Inward Foreign Direct Investment (FDI) into the EU	Following the publication on 10 May 2017 of the Commission's reflection paper on Harnessing Globalisation, the European Council and the Parliament welcomed a Commission initiative in the field of screening investments from third countries in strategic sectors. This political initiative on investment screening includes the production of an "in-depth analysis of FDI flows into the EU", which the Commission has committed to carry out by the end of 2018. The Administrative Arrangement EU-IFDI (Inward Foreign Direct Investment into the EU) will contribute to this study. The objective of the AA is to analyse trends in foreign ownership of EU firms, based on a comprehensive database on inward investment into the EU purpose-built from available firm-level data sets. In particular • Identification of the ownership structure of all EU firms having an ultimate owner outside Europe.	JRC.B.1 Michela NARDO	5.2.b	TRADE	TRADE	n/a	ECFIN		01/01/2018 16/12/2018	CON-AA	1	interim deliverable	Creation of a comprehensive database of ultimate/relevant owners of EU firms containing all the relevant information. The database will contain, for each firm, detailed information regarding the ultimate owner: i) country, ii) type of owner (i.e. private, State-owned), and iii) accounting information when the owner is a company.	31/05/2018	JRC technical reports
												2	final deliverable	Analysis of the main trends and most significant patterns in inward non-EU investment, in particular (i) market share measures for firms owned by non-EU subjects/companies in the period of reference; (ii) main trends both at the country level and at the level of economic sector(s). Comparison of firm level data with official FDI statistics as provided by Eurostat, OECD, IMF and other international sources and summarised in the FinFlows dataset to picture trends at micro and macro level.	30/09/2018	Science-for-policy reports

5.3. Taxation

5.3.a corporate taxation - perform modelling to support the action plan for fair and efficient corporate taxation in the EU and the Communication on a tax system in the digital single market; carry out analyses of the effects of corporate taxes and in particular develop modelling tools for assessing the impact of anti-avoidance rules, the harmonisation of specific rules, changes in tax treaties and future EU policy initiatives.

7665 - FISCAL JRC.B.2	6449 - FISCALMOD Modelling the resilience and fairness of tax systems by fighting tax fraud and tax avoidance	This work package will further develop fiscal modelling tools (including the CORTAX model) to analyse the fiscal and fairness impact of tax fraud and tax avoidance. The work package will be structured along several research questions. It will develop modelling tools to analyse VAT fraud in the EU from a cross-border perspective. It will also develop analytical tools to analyse tax wedges, developing alternative indicators to assess tax wedges along the wage distribution. It will also build on JRC.B.2 expertise in modelling corporate tax reforms through the CORTAX model which was used for the impact assessment of the Common Consolidated Corporate Tax Base (CCCTB) in 2016. The model will be extended to analyse anti-abuse measures to reduce corporate tax avoidance and the taxation of Intellectual-Property related corporate tax revenues. The JRC.B.2 unit will also investigate the possibility to develop an analytical tool for the assessment of international tax fraud by individuals.	JRC.B.2 JONATHAN PYCROFT	5.3.a	TAXUD	TAXUD	n/a	ECFIN	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2020	CON-AA	01	Report on R&D and intangible taxation	The CORTAX model will be extended in order to model policy measures included in the anti-tax-avoidance package (ATAD) and analyse its impact in combination with the harmonisation of tax bases included in the CCCTB proposal. Furthermore the CORTAX model will be extended to incorporate R&D and intangible assets in order to analyse tax incentives on R&D spending, including the proposal for EU-wide tax allowances of the CCCTB proposal and possible measures dealing with Intellectual Property/patent boxes	31/12/2018	Science-for-policy reports
												02	Progress report on corporate tax expenditures	Assessing feasibility of accounting for corporate tax expenditures within CORTAX The possibility of including corporate tax expenditures in a comprehensive way in the CORTAX model will be assessed. Currently, the model takes into account certain expenditures that relate to depreciation regimes, allowance for corporate equity etc. Furthermore, the extension under deliverable 01 will account for R&D tax incentives. However, national tax systems often feature many more special regimes and tax incentives. Such schemes can make national tax bases narrower in practice from the tax base approximated by the model. The feasibility work will assess the extent to which such tax expenditures could be covered by the model, the added value of doing so and data availability	31/12/2018	Science-for-policy reports
												03	Technical input on digital economy based on targeted requests	The objective of this deliverable is to provide input and data to underpin DG TAXUD's analysis on taxation of the digital economy. This input will be provided against the backdrop of high political priority for updating international tax rules to fit the digital business models and for ensuring profits are taxed where the value is created. Analysis and policy simulations will be conducted based on DG TAXUD requests. The analysis will be guided by policy developments and evolution in business models.	31/12/2019	Science-for-policy reports
												04	On-demand CORTAX analyses	DG TAXUD might request ad hoc CORTAX simulations following discussions at the European Commission, European Council and European Parliament on the implementation of the CCCTB or related taxation aspects throughout the duration of this WP.	31/12/2020	JRC technical reports
												05	Measuring labour tax wedges with EUROMOD (Progress report)	Developing the EUROMOD-JRC web interface in order to include labour tax wedge indicators Extend the EUROMOD-JRC web interface to incorporate standard measures of labour tax wedges for hypothetical households providing flexible definition of average, low and high wages to users. Provide standard measures of the impact of tax wedge by category of households, including by marital status, number of children and employment status.	31/12/2018	Science-for-policy reports
												06	Final feasibility report on corporate tax expenditures	The possibility of including corporate tax expenditures in a comprehensive way in the CORTAX model will be assessed. Currently, the model takes into account certain expenditures that relate to depreciation regimes, allowance for corporate equity etc. Furthermore, the extension under deliverable 01 will account for R&D tax incentives. However, national tax systems often feature many more special regimes and tax incentives. Such schemes can make national tax bases narrower in practice from the tax base approximated by the model. The feasibility work will assess the extent to which such tax expenditures could be covered by the model, the added value of doing so and data availability	31/12/2019	JRC technical reports
												07	Building labour tax wedge with EUROMOD (Final report)	Developing the EUROMOD-JRC web interface in order to include labour tax wedge indicators Extend the EUROMOD-JRC web interface to incorporate standard measures of labour tax wedges for hypothetical households providing flexible definition of average, low and high wages to users. Provide standard measures of the impact of tax wedge by category of households, including by marital status, number of children and employment status.	31/12/2019	Science-for-policy reports
												08	Technical input on digital economy based on targeted requests - final report	The objective of this deliverable is to provide input and data to underpin DG TAXUD's analysis on taxation of the digital economy. This input will be provided against the backdrop of high political priority for updating international tax rules to fit the digital business models and for ensuring profits are taxed where the value is created. Analysis and policy simulations will be conducted based on DG TAXUD requests. The analysis will be guided by policy developments and evolution in business models	31/12/2020	Science-for-policy reports
												09	Wealth taxation, fairness and tax avoidance	The EUROMOD model has been extended to cover wealth taxes (e.g. taxes related to capital income, real estate, inheritances and gifts) and to improve the coverage of the top percentile of the income distribution. The EUROMOD model has been adapted to use the Household Finance and Consumption Survey data (HFCS) from the European Central Bank which better covers the wealthiest household and yield more details on wealth-related income linked to asset ownership and asset transmission. In some cases, the unit also improves the HFCS data through top tail estimations using the Forbes list or national rich lists. We will seek to develop its analysis of top income taxation building on the extension of EUROMOD to wealth taxation. The JRC will explore the distributional and fiscal revenues impact of wealth tax systems, including existing and hypothetical ones. We will also investigate the possibility to merge information from ORBIS and other possible company-level data sources	31/12/2020	Science-for-policy reports

5.3.b fiscal policies - perform modelling and economic analyses of tax policies using the EUROMOD microsimulation model.

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7665 - FISCAL JRC.B.2	6441 - FISCALPOLICY Resilience and fairness of fiscal policy and public finances	The work package will support DG ECFIN in assessing the fairness of tax and social benefits systems and their role in promoting the resilience of public finance to economic shocks. JRC.B.2 modelling activities will support DG ECFIN services in the context of policy recommendation for the European Semester and contribute to DG ECFIN modelling activities, in particular through the estimation of second round effects of structural tax reforms. This work package will also cover thematic research concerning the fairness and fiscal impact of investment-related tax expenditures; the role of automatic stabilisation mechanisms in the EU in absorbing adverse economic shocks, the resilience and sustainability of public finances to large employment fluctuations, accounting for uncertainty in business cycle developments	JRC.B.2 Salvador BARRIOS	5.3.b	ECFIN	ECFIN	n/a	EMPL SG TAXUD		01/01/2018 31/12/2020	CON-AA	01	Fiscal reforms in the European Semester, 2018	Fairness and resilience of fiscal reforms in the European Semester. Building on what is done in terms of tax reform assessment in the context of the European Semester, DG ECFIN and JRC.B.2 will agree each year on a number of national tax reforms to be analysed based on the microsimulation model EUROMOD. Special emphasis will be made on the impact of tax reforms in fostering the resilience of public finances and in promoting fairness. Given the numerous extensions of EUROMOD over the last few years, indirect tax (e.g. VAT) and wealth tax reforms on top of personal income tax and social security contribution reforms could be analysed. Tax reform simulation results should be ready in order to feed into the Country Reports and the associated CSRs. ECFIN could also request ad-hoc support to policy questions depending on reforms plans announced by the Member States and not initially foreseen, taking due account of JRC.B.2 resources and availability.	30/06/2018	Science-for-policy reports
												02	Analysis of the impact of unemployment evolutions and uncertainty in fiscal forecasting (Progress report)	The EUROMOD model can be used to analyse the fiscal consequences of changes in unemployment insurance spending and social insurance contributions over the business cycle. Accounting for the heterogeneity in employment dynamics has been shown to be important in order to better understand the link between microeconomic behaviour and macroeconomic outcome as well to account for the impact of policy changes. Information regarding who becomes unemployed (i.e. gender, education, occupation, etc.) will be used in order to account for the heterogeneity in employment creation and destruction and their likely fiscal impact over the business cycle. These stylised employment transitions will extend the EUROMOD model in order to replicate recent macro-evolution. This analysis should also account for the uncertainty in future business cycle evolutions and possible errors in predicting unemployment trends.	30/06/2018	Science-for-policy reports
												03	Fiscal reforms in the European Semester, 2019	Fairness and resilience of fiscal reforms in the European Semester. Building on what is done in terms of tax reform assessment in the context of the European Semester, DG ECFIN and JRC.B.2 will agree each year on a number of national tax reforms to be analysed based on the microsimulation model EUROMOD. Special emphasis will be made on the impact of tax reforms in fostering the resilience of public finances and in promoting fairness. Given the numerous extensions of EUROMOD over the last few years, indirect tax (e.g. VAT) and wealth tax reforms on top of personal income tax and social security contribution reforms could be analysed. Tax reform simulation results should be ready in order to feed into the Country Reports and the associated CSRs. ECFIN could also request ad-hoc support to policy questions depending on reforms plans announced by the Member States and not initially foreseen, taking due account of JRC.B.2 resources and availability.	30/06/2019	Science-for-policy reports
												04	Analysis of the impact of unemployment evolutions and uncertainty in fiscal forecasting (Final report)	The EUROMOD model can be used to analyse the fiscal consequences of changes in unemployment insurance spending and social insurance contributions over the business cycle. Accounting for the heterogeneity in employment dynamics has been shown to be important in order to better understand the link between microeconomic behaviour and macroeconomic outcome as well to account for the impact of policy changes. Information regarding who becomes unemployed (i.e. gender, education, occupation, etc.) will be used in order to account for the heterogeneity in employment creation and destruction and their likely fiscal impact over the business cycle. These stylised employment transitions will extend the EUROMOD model in order to replicate recent macro-evolution. This analysis should also account for the uncertainty in future business cycle evolutions and possible errors in predicting unemployment trends.	30/06/2019	Science-for-policy reports
												05	Analysing the resilience of tax and social benefits systems and the automatic stabilisation mechanisms in the EU (progress report)	The analysis will compare the stabilisation coefficients following negative versus positive shocks, shocks of different sizes and shocks affecting asymmetrically various population groups. The possibility to build on the EUROMOD model to further extend the macro-micro modelling of fiscal policy covering both tax and public expenditures, will be explored. This work, carried out upon the initiative of the JRC, will analyse reforms from a cross-generational perspective by constructing an over-lapping generation model with a high level of disaggregation at household level calibrated with EUROMOD in order to investigate the equity impact of fiscal reforms in the EU. The extensions can be used to assess the stabilisation properties of the tax-benefit systems of EU Member States adopting a dynamic approach. These extensions could be used e.g. to analyse the stabilisation properties of an EU-wide unemployment scheme or other macro-economic stabilisation schemes at EU level.	30/06/2019	Science-for-policy reports
												06	Analysis of the impact of unemployment evolutions and uncertainty in fiscal forecasting (Progress report)	The EUROMOD model can be used to analyse the fiscal consequences of changes in unemployment insurance spending and social insurance contributions over the business cycle. Accounting for the heterogeneity in employment dynamics has been shown to be important in order to better understand the link between microeconomic behaviour and macroeconomic outcome as well to account for the impact of policy changes. Information regarding who becomes unemployed (i.e. gender, education, occupation, etc.) will be used in order to account for the heterogeneity in employment creation and destruction and their likely fiscal impact over the business cycle. These stylised employment transitions will extend the EUROMOD model in order to replicate recent macro-evolution. This analysis should also account for the uncertainty in future business cycle evolutions and possible errors in predicting unemployment trends.	30/06/2019	Science-for-policy reports
												07	Fiscal reforms in the European Semester, 2020	Fairness and resilience of fiscal reforms in the European Semester. Building on what is done in terms of tax reform assessment in the context of the European Semester, DG ECFIN and JRC.B.2 will agree each year on a number of national tax reforms to be analysed based on the microsimulation model EUROMOD. Special emphasis will be made on the impact of tax reforms in fostering the resilience of public finances and in promoting fairness. Given the numerous extensions of EUROMOD over the last few years, indirect tax (e.g. VAT) and wealth tax reforms on top of personal income tax and social security contribution reforms could be analysed. Tax reform simulation results should be ready in order to feed into the Country Reports and the associated CSRs. ECFIN could also request ad-hoc support to policy questions depending on reforms plans announced by the Member States and not initially foreseen, taking due account of JRC.B.2 resources and availability.	31/12/2020	Science-for-policy reports
												08	Analysis of the impact of unemployment evolutions and uncertainty in fiscal forecasting (Follow-up work report)	The EUROMOD model can be used to analyse the fiscal consequences of changes in unemployment insurance spending and social insurance contributions over the business cycle. Accounting for the heterogeneity in employment dynamics has been shown to be important in order to better understand the link between microeconomic behaviour and macroeconomic outcome as well to account for the impact of policy changes. Information regarding who becomes unemployed (i.e. gender, education, occupation, etc.) will be used in order to account for the heterogeneity in employment creation and destruction and their likely fiscal impact over the business cycle. These stylised employment transitions will extend the EUROMOD model in order to replicate recent macro-evolution. This analysis should also account for the uncertainty in future business cycle evolutions and possible errors in predicting unemployment trends.	31/12/2020	Science-for-policy reports
												09	Analysis of the resilience of tax and social benefits systems and automatic stabilisation mechanisms in the EU (final report)	The analysis will compare the stabilisation coefficients following negative versus positive shocks, shocks of different sizes and shocks affecting asymmetrically various population groups. The possibility to build on the EUROMOD model to further extend the macro-micro modelling of fiscal policy covering both tax and public expenditures, will be explored. This work, carried out upon the initiative of the JRC, will analyse reforms from a cross-generational perspective by constructing an over-lapping generation model with a high level of disaggregation at household level calibrated with EUROMOD in order to investigate the equity impact of fiscal reforms in the EU. The extensions can be used to assess the stabilisation properties of the tax-benefit systems of EU Member States adopting a dynamic approach. These extensions could be used e.g. to analyse the stabilisation properties of an EU-wide unemployment scheme or other macro-economic stabilisation schemes at EU level.	31/12/2020	Science-for-policy reports
												10	Analysis of the impact of unemployment evolutions and uncertainty in fiscal forecasting (Final report)	The EUROMOD model can be used to analyse the fiscal consequences of changes in unemployment insurance spending and social insurance contributions over the business cycle. Accounting for the heterogeneity in employment dynamics has been shown to be important in order to better understand the link between microeconomic behaviour and macroeconomic outcome as well to account for the impact of policy changes. Information regarding who becomes unemployed (i.e. gender, education, occupation, etc.) will be used in order to account for the heterogeneity in employment creation and destruction and their likely fiscal impact over the business cycle. These stylised employment transitions will extend the EUROMOD model in order to replicate recent macro-evolution. This analysis should also account for the uncertainty in future business cycle evolutions and possible errors in predicting unemployment trends.	31/12/2020	Science-for-policy reports

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7665 - FISCAL JRC.B.2	6443 - TAXFAIRNESS Fairness and resilience of tax and social benefits systems and reforms	The work package will support DG EMPL in assessing the fairness of tax and social benefits systems and their role in promoting their resilience to migration flows. JRC.B.2 modelling activities will support DG EMPL services in the context of policy recommendation for the European Semester, focusing in particular on the impact of reforms on fairness and equity using the EUROMOD model. This work package will also cover thematic research concerning the fiscal and equity impact of migration flows in the EU extending the EUROMOD model to improve its coverage of the migrant population (including economic migrants and asylum seekers) and specific policy rules (in particular concerning asylum seekers). It will assess the sustainability and resilience of social benefit systems to shocks, including massive migration movements.	JRC.B.2 Salvador BARRIOS	5.3.b	EMPL	EMPL	n/a	ECFIN SG TAXUD		01/01/2018 31/12/2019	CON-AA	1	Tax and social benefits reforms in the European Semester, 2018	Fairness and resilience of tax and social benefit reforms in the European Semester (T0 + 2m) Building on the work done in terms of tax and social benefits reform assessment in the context of the European Semester, DG EMPL and JRC.B.2 will agree each year on a number of national tax reforms to be analysed based on the microsimulation model EUROMOD. Special emphasis will be made on the impact of tax reforms in promoting fairness and ensuring the resilience of social safety nets.	01/03/2018	Science-for-policy reports
												2	Tax and social benefits reforms in the European Semester, 2019	Fairness and resilience of tax and social benefit reforms in the European Semester (T0 + 14m) Building on the work done in terms of tax and social benefits reform assessment in the context of the European Semester, DG EMPL and JRC.B.2 will agree each year on a number of national tax reforms to be analysed based on the microsimulation model EUROMOD. Special emphasis will be made on the impact of tax reforms in promoting fairness and ensuring the resilience of social safety nets.	01/03/2019	Science-for-policy reports
												3	Fiscal and equity impact of migration flows	Measuring the fiscal and equity impact of migration flows using the EUROMOD model The EUROMOD model can be adapted to measure the fiscal and equity impact of migration flows by: (i) Modifying the existing EU-SILC data to improve the representativeness of economic migrants (ii) Building synthetic households representing asylum seekers (iii) Codifying public expenditures and social benefits specific to asylum seekers in order to measure their fiscal impact. Possible harmonisation and/or coordination of migration rules and policies will be analysed using such extended EUROMOD model in order.	31/12/2018	Science-for-policy reports
7665 - FISCAL JRC.B.2	6446 - EUROMODTRANSFER Transfer of maintenance and update of the EUROMOD model	The aim of this work package is to ensure a smooth transfer to the Commission of the processes of development and maintenance of the microsimulation model EUROMOD currently based at the University of Essex. EUROMOD is a tax-benefit microsimulation model, which covers in a consistent manner the 28 Member States. The model is unique in its area as it features a great flexibility in the scope of its simulation and ensures cross-country consistency of the modelling approach and comparability of the results. The maintenance and development of the EUROMOD microsimulation model, currently based at the University of Essex, will be progressively transferred to the JRC and ESTAT during a transition period of 3 years, starting in January 2018. The transfer will have four major added values for the Commission services: (i) It will consolidate the key role of the model in the context of the European Semester and thematic studies conducted by the Commission services (ii) It will facilitate the adaptation of future extensions of the model to Commission policy needs, in particular in the area of fairness (iii) It will promote the dialogue of the Commission with the Member States on the assessment of the impact of tax and social security reforms (iv) It will allow, owing to the involvement of ESTAT, to update the model data on a more regular basis and with improved quality.	JRC.B.2 ALBERTO TUMINO	5.3.b	EMPL	EMPL	n/a			01/01/2018 31/12/2019	CON-AA	1	Update, maintenance and public release of the EUROMOD model for 2018	Update and maintenance of the EUROMOD model and public release for the year 2018 (T0 + 12m) The transfer of the EUROMOD model to JRC.B.2 and ESTAT will concern a number of countries (to be agreed with DG EMPL) and tasks: (i) Data updating, including empirical data from EU SILC and other sources for use in EUROMOD mainly under the responsibility of ESTAT (ii) Updating of policy rules, including collecting information on national policy rules and ensuring consistent coding of policy rules into EUROMOD (iii) Documenting and testing the model, including verifying consistent and coherent treatment of national policies and data as well as compliance with guidelines, protocols, templates and conventions. Ensure timely delivery of the update and release of a EU28 model that is quality-checked and ready for use (iv) Calculate and validate key indicators (v) Disseminate user interface, website and annual user conference (vi) Provide training and user support (vi) Ensure project administration and	31/12/2018	Science-for-policy reports
												2	Update, maintenance and public release of the EUROMOD model for 2019	Update and maintenance of the EUROMOD model and public release for the year 2018 (T0 + 24m) The transfer of the EUROMOD model to JRC.B.2 and ESTAT will concern a number of countries (to be agreed with DG EMPL) and tasks: (i) Data updating, including empirical data from EU SILC and other sources for use in EUROMOD mainly under the responsibility of ESTAT (ii) Updating of policy rules, including collecting information on national policy rules and ensuring consistent coding of policy rules into EUROMOD (iii) Documenting and testing the model, including verifying consistent and coherent treatment of national policies and data as well as compliance with guidelines, protocols, templates and conventions. Ensure timely delivery of the update and release of a EU28 model that is quality-checked and ready for use (iv) Calculate and validate key indicators (v) Disseminate user interface, website and annual user conference (vi) Provide training and user support (vi) Ensure project administration and	31/12/2019	Science-for-policy reports
7665 - FISCAL JRC.B.2	6448 - FISCALSUPPORT Fairness and resilience of fiscal policy-Technical assistance and support	This work package provides technical support on questions on common interest across DG ECFIN, DG EMPL, DG TAXUD and the SRSS. Main activities cover include: (i) The development and maintenance of the EUROMOD-JRC web interface, especially in the context of its use for the European Semester (ii) Technical assistance to Member States, including Greece and possibly other countries depending on future requests.	JRC.B.2 Salvador BARRIOS	5.3.b	SG	JRC	n/a			01/01/2018 31/12/2019	INS-RS	1	EUROMOD-JRC web interface for 2018	Update, maintenance and Commission release of the EUROMOD-JRC web interface for 2018 (T0 + 12m) JRC.B.2 provides DG ECFIN, DG EMPL, DG TAXUD and the SRSS with access to basic functionalities of the EUROMOD model through the Commission intranet. Simple simulations affecting tax rates, tax brackets and tax allowances and credits can be performed and standard results on the fiscal and equity impact of reforms can be obtained for all Member States. JRC.B.2 provides an update of this web interface every year.	31/12/2018	Science-for-policy reports
												2	EUROMOD-JRC web interface for 2019	Update, maintenance and Commission release of the EUROMOD-JRC web interface for 2019 (T0 + 24m) JRC.B.2 provides DG ECFIN, DG EMPL, DG TAXUD and the SRSS with access to basic functionalities of the EUROMOD model through the Commission intranet. Simple simulations affecting tax rates, tax brackets and tax allowances and credits can be performed and standard results on the fiscal and equity impact of reforms can be obtained for all Member States. JRC.B.2 provides an update of this web interface every year.	31/12/2019	Science-for-policy reports
												3	Technical assistance 2018	Technical assistance to the Greek Ministry of Finance for the assessment of tax reforms (T0 + 12m) JRC.B.2 provides technical assistance to Greece in the context of its third Memorandum of Understanding with the European Commission, the European Central Bank and the International Monetary Fund. One JRC.B.2 experts is detached to the Greek Ministry of Finance in order to assess important reform voted or discussed, focusing on the fiscal and equity impact of these reforms.	31/12/2018	Science-for-policy reports
6. A balanced and progressive trade policy to harness globalisation																
6.1. Trade policy																
6.1.a provide support (methodological, modelling, and analytical) for impact assessments of free trade agreements and the socioeconomic and environmental implications of external trade especially on agri-food markets and raw materials (see Sections 1.1. and 4.1); help to analyse foreign direct investment (FDI) flows into the EU.																
7. An area of justice and fundamental rights based on mutual trust																
7.1. Justice, consumers and gender equality																
7.1.a consumer markets - analyse statistical indicators and methodologies to monitor consumer behaviour and market performance; develop data collection systems and their interoperability for product safety and market surveillance; apply behavioural insights.																
7512 - FAIRNESS JRC.1.1	6450 - Fairness_Bis Behavioural Insights and Fairness	This WPk will use insights from behavioural sciences to investigate EU citizens' perceptions of (un)fairness. The objective will be to help understanding the different dimensions of subjective fairness such as perceived economic inequalities, procedural justice, and experiences of discrimination. The causes and consequences of subjective fairness will also be investigated (e.g. social exclusion, happiness, emotions, subjective social status, attitudes toward immigration and toward globalisation). One of the main focusses will be people's perceptions of economic inequalities, including perceptions of poverty. By matching data from ESTAT and from the special Eurobarometer on "Fairness, Inequalities, Social Mobility", this project will compare perceived and observed income inequality, and each of the latter with the individuals' self-reported ideal income distribution. The project will use a mix of methods from behavioural sciences, such as surveys, experiments and possibly qualitative methods.	JRC.1.2 Emanuele CIRIOLO	7.1.a	JUST	JRC	n/a	EMPL REGIO		01/01/2018 31/12/2019	INS-UR	BI1808	A behavioural perspective on fairness	This report will summarise the available behavioural evidence on intergenerational and inter-regional fairness and concisely present the results of laboratory experiments.	15/12/2018	Science-for-policy reports
5102 - Bis JRC.1.2	6518 - Bis-JUST Behavioural Insights for Justice and Consumers	The application of insights from psychology and behavioural economics to policy analysis has received significant attention by policy-makers around the world. Since 2008, the European Commission (EC) has been a front-runner in using behavioural insights to inform legislation and regulatory policy. DG Justice and Consumers (JUST) has led the effort, supported by the Joint Research Centre (JRC). This WPk comprises the work to be carried out within an Administrative Arrangement (AA) formalising support by JRC to JUST on two work streams: on-demand support activities to JUST behavioural studies and application of behavioural insights to gender issues. The AA is under negotiation and will be signed before the end of 2017.	JRC.1.2 Rene VAN BAVEL	7.1.a	JUST	JUST	n/a			01/01/2018 31/12/2018	CON-AA	BI1806	Annual report on behavioural insights support activities	Annual reports on the JRC's support activity, composed of tables documenting concrete, traceable contributions by JRC to JUST's behavioural activities, demonstrating the breadth and depth of support being offered by JRC.	07/12/2018	JRC technical reports
												BI1807	Report: Mid-term evaluation of projects from a behavioural perspective	Report containing a table of a behavioural analysis of the projects that have a clear behavioural component (based on the projects' progress reports)	15/06/2018	JRC technical reports
7.1.b dual quality of food products - develop a robust harmonised testing approach and guidelines that could be used in potential further investigations including a harmonised sampling and testing approach and data evaluation; supervise a comparative exercise involving several Member States to check whether certain quality-relevant characteristics of food products that are sold in the single market under the same brand and same packaging are indeed																
68 - KCFQ JRC.F.4	Technical support for the development and implementation of a harmonised approach for testing quality related characteristics of branded food products	Several Member States have carried out comparative tests on branded food products placed on their markets and on neighbouring markets. They found that a significant number of products differ in certain quality related characteristics (amount of ingredients used, sensory properties). The purpose of this work package is the development and implementation by the JRC of a harmonised sampling, testing and data interpretation protocol which can be used for the objective assessment of compositional and sensory difference between branded food products offered on the EU Internal Market.	JRC.F.4 Franz ULBERTH	7.1.b	JUST	JUST	n/a	GROW SANTE		01/11/2017 31/10/2019	CON-AA	10	Report on the outcome of the harmonised testing under the JRC's coordination and logistics.	Report on the outcome of the harmonised testing under the JRC's coordination and logistics.	31/10/2019	JRC technical reports

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213 - TMA CC JRC.I.3	5022 - STAR IV EMM SECURE ZONE IV	The AA is the continuation of JRC's support to DG HOME's strategic analysis and response capability (STAR). DG HOME uses STAR to develop risk assessment processes related to security threats. Furthermore, it is used as capability for crisis management. STAR is operated by DG HOME, however, continuing support and transfer of open source gathering and analysis techniques developed by JRC is required.	JRC.I.3 Gerhard WAGNER	7.2.d	HOME	HOME	Jorge BENTO SILVA			01/01/2018 17/03/2019	CON-AA	502201	Operational Support to STAR	Provide software updates and consulting to keep STAR operational	31/12/2018	Scientific information systems and databases
213 - TMA CC JRC.I.3	5024 - EuMM2018 Europol Media Monitor 2018	Europol's Corporate Communications Unit performs open source monitoring on behalf of operational Units in Europol. The Unit also produces a daily newsletter for the whole organisation. The purpose of the project is to maintain and host versions of EMM and NewsDesk specifically tailored for Europol with the intention to transfer the system to Europol in the future within the framework of a signed license agreement.	JRC.I.3 Marco VERILE	7.2.d	HOME	EA	Funded by Europol			01/01/2018 31/12/2018	CON-TW	502401	Europol Media Monitoring	Delivery of Open Source monitoring and analysis tools to enhance Europol's capabilities in preventing and combating organised crime, terrorism and other forms of serious crime.	31/12/2018	Technical systems
329 - DFILE JRC.E.3	6526 - LEA-HPC HPC Server Room for research and applications in support of Law Enforcement Authorities	A segregated HPC Server Room for research and applications in support of Law Enforcement Authorities (e.g. EUROPOL-EC3) in fighting terrorism, organized-crime and cybercrime will be developed. Special security measures applied to this server room will be defined. Research and applications covering encryption/decryption capacity, deep-learning applied to criminal investigations will be conducted.	JRC.E.3 Laurent BESLAY	7.2.d	HOME	HOME	n/a		EUROPOL - EUROPOL	01/01/2018 20/12/2019	CON-AA					
213 - TMA CC JRC.I.3	6586 - EuMM2019 Europol Media Monitor 2019	Europol's Corporate Communications Unit performs open source monitoring on behalf of operational Units in Europol. The Unit also produces a daily newsletter for the whole organisation. The purpose of the project is to maintain and host versions of EMM and NewsDesk specifically tailored for Europol with the intention to transfer the system to Europol in the future within the framework of a signed license agreement.	JRC.I.3 Gerhard WAGNER	7.2.d	HOME	EA	n/a			01/01/2019 31/12/2019	CON-TW	658601	Europol Media Monitoring	Delivery of Open Source monitoring and analysis tools to enhance Europol's capabilities in preventing and combating organised crime, terrorism and other forms of serious crime	31/12/2019	Technical systems
213 - TMA CC JRC.I.3	6591 - STAR V EMM SECURE ZONE V	The AA is the continuation of JRC's support to DG HOME's strategic analysis and response capability (STAR). DG HOME uses STAR to develop risk assessment processes related to security threats. Furthermore, it is used as capability for crisis management. STAR is operated by DG HOME, however, continuing support and transfer of open source gathering and analysis techniques developed by JRC is required.	JRC.I.3 Gerhard WAGNER	7.2.d	HOME	HOME	n/a			01/01/2019 31/12/2019	CON-AA	659101	Operational support to STAR	Provide software updates and consulting to keep STAR operational	31/12/2019	Scientific information systems and databases
6485 - KM4SSM JRC.E.7	6620 - FOSS 2017 FRONTX ONE-STOP-SHOP Handover Phase	The subject of this contract is the definition of the operational, administrative, financial and technical conditions under which JRC shall provide Frontex with the services and products to maintain, enhance and update Frontex-One-Stop-Shop (FOSS), which were initially supplied by the JRC in the frame of the SLA No. 33222-2013 TPW, which entered into force on 3 May 2013. This contract is intended to support the process of replacement of the FOSS application within Frontex. No further contract to support FOSS is envisaged after the end of this one.	JRC.E.1 Brian DOHERTY	7.2.d	HOME	n/a	n/a			01/09/2017 28/02/2019	CON-TW	201801	FOSS system handed over to FRONTX	JRC will hand over operations of the FRONTX One Stop Shop to FRONTX. The JRC will develop and deliver necessary documentation to FRONTX. JRC shall share information and knowledge with Frontex staff members that act as FOSS administrators during face to face meeting (up to three days) to familiarise them with the basic administration tasks and make them more independent from JRC in the resolution of daily issues.	28/02/2019	Technical systems
7.2.e border protection and document security- increase security of external borders (e.g. help to design and implement the EU entry-exit system, contribute to the protection of external borders and the effective processing of Schengen visas); strengthen the capacity of FRONTX to carry out border controls, risk analysis and joint operations at external borders; provide technical support and research to strengthen large EU information systems, including for																
4973 - BOSS JRC.E.5	298 - BORSEC-CF Border Security and ECCAIRS Common Framework	The main objective of the WP is to accompany the hand over of the very successful ECCAIRS activities to the respective future users (e.g. EASA and EMSA) and to pave the way for the re-use of the technology used by ECCAIRS and CISE in the wider field of Border Security. The effective sharing, management and use of data from diverse sources is of paramount importance to support the decision making process and the actions needed to protect the EU Borders, hence the WP aims at leveraging the vast experience built during the past years and the excellent relationship with MS' authorities in the field of Border Surveillance to identify and propose sound solutions to support the enhancing of security at the external border as well as the improving of information exchange and strengthening information systems as foreseen in the European Agenda on Security COM(2015)185 implementing the Political Guidelines of European Commission President Jean-Claude Juncker in the area of security. The work package will include the activities needed to provide the adequate policy support to the Border Security task carried out either by the EU Agencies or by MS. In view of increasing their effectiveness leveraging on an enhanced information sharing and operational interoperability. With reference to the effective handover of the ECCAIRS related activities, this work-package ensures that the ECCAIRS approach for collecting, integrating, exchanging and disseminating accident and incident data remains a valid solution for existing deployments in the mid-term and can be used as a very fast solution for new data collection and integration needs at EU or international level (e.g. in the Border Security activities). While the operational systems for the three public transport domains are being transferred to the	JRC.E.5 Franco OLIVERI	7.2.e	JRC	JRC	C. Berg (Maritime Safety); F. Cornelis (Aviation Safety); S. Schmidt (DG MOVE Road Safety); S. Prout (DG MOVE Rail)	HOME		01/01/2018 31/12/2019	INS-RS	11	ECF Show Cases	After the successful deployment of ECCAIRS in the three public transport domains this deliverables will demonstrate that ECCAIRS can be used for solving data collection and integration problems in different domains. The production of a number of show cases (i.e. functional ECCAIRS deployments) will demonstrate to potential interested DGs how the platform can be used to resolve fast and efficiently their data sharing needs.	31/12/2019	JRC technical reports
												12	ECF support for big data	Typically information stored in ECCAIRS repositories could be used in environments where big data type of handling and analysis is required. This deliverable optimizes the interfaces of ECCAIRS towards these types of big data analytical environments. The focus is on flexible, fast and efficient data-links.	15/12/2019	JRC technical reports
												13	Enhancing Operational Systems for Securing Borders, Migration and Asylum	Enhancing Operational Systems for Securing Borders, Migration and Asylum: o Fast, ethical and efficient biometric registration of migrants (including children) in support to EURODAC (JRC) o preparation and promotion of security assessment guidelines for the usage of Automated Border Control systems, o development and application of guidelines for type evaluation of border control technology, in cooperation with Agency FRONTX Support to the implementation of the "Action Plan to strengthen the European response to travel document fraud" (COM (2016) 790 final) regarding: o document control (Ensure that border guards have better access to the relevant information systems.) (JRC) o document production (Develop further guidance/training for the correct enrolment of biometric identifiers, in particular to address biometric data quality and vulnerabilities.) (JRC)	30/04/2018	JRC technical reports
355 - KCMD JRC.E.6	3547 - CIM Children in Migration	This WP addresses activities agreed under the Action Plan of the KCMD with respect to Children in Migration. The provision of comprehensive, reliable and comparable data, reducing fragmentation and promoting disaggregation has been identified as a common issue by all parties with an interest in the rights of children in migration. This point has been specifically recognised in the Communication on 'The protection of children in migration' COM(2017) 211 final, which also requests the KCMD to create a specific data repository. Data concerning children includes data on arrivals, asylum, decisions granting or withdrawing protection, residence permits, returns, children being reunified with their family under family reunification procedures, including transferred under the Dublin Regulation (based on family unity criteria) and under the Family Reunification Directive, missing children from reception facilities. Data about all children in migration is of interest, whether in regular or in irregular situations, stateless, unaccompanied, separated or travelling with their families. Data sources (e.g. ESTAT, UNICEF UNHCR, IOM, EU governments, key NGOs etc.) would be mapped, data gaps and existing levels of disaggregation (by sex, age, nationality) highlighted, and recommended actions proposed in coordination with DGs HOME and JUST. The work will be carried out in collaboration with relevant external partners, such as, among others, UNICEF, IOM, UNHCR.	JRC.E.6 Guenter SCHUMACHER	7.2.e	HOME	JRC	Marc SULON (HOME.B3 - Information Systems for Borders and Security)	DEVCO EAC JUST	CoE - Council of Europe FRONTX - European Agency for the Management of Operational Cooperation	01/12/2017 31/12/2019	INS-RS	354704	Data on Children in Migration	A final report will provide for an overview of available data about children in migration and highlights gaps that still exist. Furthermore, the report explains what conclusions can be drawn from this data and recommends further action. An underpinning part of this work is a dedicated Data Hub specifically for children in migration.	29/06/2018	Science-for-policy reports
												354708	Evaluation of fingerprint devices for usage with children in migration	Technical evaluation of various devices for fingerprint acquisition in view of their feasibility for children, under due consideration of their ethical implications. This work will also include preparation for standardisation in cooperation with NIST.	30/11/2019	JRC technical reports
												54707	Harmonised age assessment and biometric registration of children in migration	Analysis studies on best practice guidelines for age assessment of children in migration, medical and non-medical and on appropriate biometric registration techniques for children of all ages to support EURODAC.	14/12/2018	Science-for-policy reports
244 - CSPI JRC.E.3	3764 - DigitalID Digital Identity	This work-package aims at providing support to the forthcoming Commission Communication on an Action Plan on document security and identity management which is called for in the Commission Communication Stronger and Smarter Information Systems for Borders and Security which explicitly references the need to combat document and identity fraud. Linked to this activity on identity managed which is focused on "hard" id documents, the work-package aims also at providing support to the "citizen mobility" challenge identified by COM(2014)144. Both initiatives are related to means to manage authentication related to the use of documents and to the security of such documents in order to prevent identity theft and fraud. In particular the first initiative, from DG HOME, is associated to the action plan to "present measures to enhance electronic document security and ID management and to strengthen the fight against document fraud" (as called for in COM(2016) 205 of 6.4.2016), while the second initiative, from DG-JUST, is exploring policy options to (a) simplify the daily life of mobile EU citizens by facilitating the acceptance of digital ID cards and residence documents and (b) improve the Direct support to DG HR in the further development and operation of the technical infrastructure required for the issuance and interoperability of the EU Laissez-Passer. More specifically the activity comprises the operation of the two PKIs (ICAO-PKI and EAC-PKI) according to the established security policies and the design and initial development of the technical infrastructures required to operate the network-exposed services (LP-NPKD and LP-SPOC). In parallel to the operations and design-development activities, the finalisation of the security documentation in order to achieve full compliance with the Common Certificate policy for the Extended Access Control Infrastructures for passport and travel documents issued by EU member states will be pursued.	JRC.E.3 Antonia RANA	7.2.e	HOME	JRC	Yolanda GALLEGO-CASILDA GRAU	CNECT JUST	01/01/2016 30/12/2018	INS-RS	376402	SoftID technology for trust building	This deliverable will investigate on technological means to build chains of trust leveraging on soft ID mechanisms. The output will be a scientific report on possible ICT based techniques to build-up a strong chain of trust in the issuing process of Citizen cards and residence documents, relying on chains of soft-IDs and soft-proofs	31/12/2018	JRC technical reports	
244 - CSPI JRC.E.3	4859 - LP 2017 Support to the operation of the Laissez Passer 2017	Direct support to DG HR in the further development and operation of the technical infrastructure required for the issuance and interoperability of the EU Laissez-Passer. More specifically the activity comprises the operation of the two PKIs (ICAO-PKI and EAC-PKI) according to the established security policies and the design and initial development of the technical infrastructures required to operate the network-exposed services (LP-NPKD and LP-SPOC). In parallel to the operations and design-development activities, the finalisation of the security documentation in order to achieve full compliance with the Common Certificate policy for the Extended Access Control Infrastructures for passport and travel documents issued by EU member states will be pursued.	JRC.E.3 Antonia RANA	7.2.e	HR	HR	Nathalie CRESTE	HOME		01/07/2017 30/06/2018	CON-AA					
244 - CSPI JRC.E.3	4860 - CTSFDD Conformity Testing of Security Features of Digital Documents	The purpose of this WP is to provide technical support to DG HOME B2 in the field of document security, namely to check the correct implementation by MS of the required physical and electronic components in passports, residence permits and visa sticker. Checking the compliance to the specifications of MS implementations of electronic travel documents is considered as a basic precondition for further improvement of border control systems. Work in this WP will be prioritised by starting with conformity testing of the electronic security features and of the physical security features in passports and of the electronic security features in residence permits. In a second phase, the conformity testing of the physical components of both visa stickers and residence permits would be carried out, once the proposals for a new design and enhanced security features for a new visa sticker and a new residence permit are adopted. Prioritisation will also depend on the availability of specimen and samples, including certificates, from Member States and will be agreed with DG HOME. Test reports will be finalised and delivered per each set of samples belonging to each Member States. The planned delivery is four weeks after completion of the text on the set of samples from the date of the receipt of the samples.	JRC.E.3 Antonia RANA	7.2.e	HOME	HOME	Yolanda GALLEGO-CASILDA GRAU	HR		01/03/2017 28/02/2018	CON-AA					

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
213 - TMA CC JRC.I.3	5025 - FMM2018 Frontex Media Monitor 2018	The FRONTEX Media Monitor (FMM) is a media monitoring tool aimed at facilitating and automating the collection, classification and dissemination of Open Source Information. The FMM increases the Frontex Situation Centre capacity to perform media and situation monitoring and provides a specialized tool to Frontex staff and external partners on border and migration related news.	JRC.I.3 Marco VERILE	7.2.e	HOME	EA	Funded by FRONTEX			01/01/2018 31/12/2018	CON-TW	344301	FRONTEX Media Monitoring	Enhanced Open Source monitoring capabilities at FRONTEX helping it to fulfil its responsibilities related to border management including migration.	17/12/2018	Technical systems
329 - DFILE JRC.E.3	6517 - SISLATEM Fingermark processing operation techniques for their implementation in the Schengen Information System (SIS)	The Administrative Agreement (AA) between DG JRC and DG HOME is planned to support DG HOME in the process towards the successful integration and use of fingermarks in the Schengen Information System (SIS) and the feasibility assessment for a prototype of a common and interoperable interface for the annotation of fingermarks.	JRC.E.3 Laurent BESLAY	7.2.e	HOME	HOME	n/a			02/01/2018 02/01/2019	CON-AA	651701	Inception Report	To be submitted 4 months after the date of signature of the Administrative Arrangement by DG HOME and DG JRC. This report shall summarise the findings of the first interviews and surveys about the envisaged applications and use cases of fingermarks in SIS within the MS	30/04/2018	JRC technical reports
												651702	Final report	The report will include the results of the information collection activities carried out by DG JRC. These results will cover the evaluation of the different techniques and a series of guidelines and recommendations from the JRC for the most appropriate deployment of the SIS biometric capabilities in order to obtain the best possible performance within the uses cases identified from the fingerprint identification technology. In particular, the final conclusions of the study shall give an answer indicating to what extent fingerprint identification technology can be employed for the use cases envisaged in SIS-II and clearly defined in the report.	02/01/2019	Science-for-policy reports
244 - CSPI JRC.E.3	6529 - LP 2018 Support to the operation of the Laissez Passer 2018	Direct support to DG HR in the further development and operation of the technical infrastructure required for the issuance and interoperability of the EU Laissez-Passer. More specifically the activity comprises the operation of the two PKIs (ICAO-PKI and EAC-PKI) according to the established security policies and the design and further development of the technical infrastructures required to operate the network-exposed services (LP-NPKD and LP-SPOC).	JRC.E.3 Antonia RANA	7.2.e	HR	HR	n/a	HOME		16/07/2018 16/07/2019	CON-AA					
244 - CSPI JRC.E.3	6530 - ML+ETIAS Cyber-Security in Smart-Borders (Schengen Master List + Mobile app for ETIAS)	This work-package supports the development of the Smart-Border Policy package in two ways: (1) Following the results of the JRC feasibility study (A.A.) conducted by JRC in 2017 on "technical options concerning the management of Member-States digital certificates (i.e. a Masterlist) for electronic passport authentication", this work-package will design and implement a first working set-up for the in-production Schengen Master List system. (2) Following the results of the JRC feasibility study (A.A.) for the cyber-security requirements of mobile applications extending the functionalities of the Entry Exit System (EES) conducted in 2016/2017, this work-package will identify the cyber-security design requirements for the use of mobile applications in the context of the coming new European Travel Information and Authorisation System (ETIAS). During EMN2016 JRC supported the development of DG HOME's IRMA (Integrated Return Management Application). This has become the main collaboration platform on migrant return operations of the Member States. JRC has conceived the system based on requirements of DG HOME, FRONTEX, member States authorities and other essential stakeholders. It prepared the user and system requirements for the developers of DG DIGIT, it has monitored the development and supervised the testing and training campaign. However as the Member States start using the system and strengthen their collaboration they ask for more updates, new features and enhanced capabilities.	JRC.E.3 Antonia RANA	7.2.e	HOME	HOME	n/a		FRONTEX - European Agency for the Management of Operational Cooperation	15/02/2018 15/06/2019	CON-AA	ML3	Final Deliverable ML	The report will describe the set-up for Schengen masterlist operational system which will provide the digital signature required by the project and the associated masterlist publication.	15/06/2019	JRC technical reports
												ML4	Mobile apps: for ETIAS feasibility study	The deliverable presents the results of the feasibility study with identification of user, operational and architectural requirements, (in particular in terms of security, privacy and data-protection), presentation of possible architectures, prototyping results and comparison with current state of play in other countries	15/06/2019	JRC technical reports
355 - KCMD JRC.E.6	6543 - EMN 2017 EMN 2017	The FRONTEX Media Monitor (FMM) is a media monitoring tool aimed at facilitating and automating the collection, classification and dissemination of Open Source Information. The FMM increases the Frontex Situation Centre capacity to perform media and situation monitoring and provides a specialized tool to Frontex staff and external partners on border and migration related news.	JRC.E.2 Naouma KOURTI	7.2.e	HOME	HOME	n/a			01/09/2017 31/08/2019	CON-AA	654301	User and system requirements of IRMA new modules	JRC will prepare the requirements for the new capabilities to be developed in IRMA according to the needs of DG HOME and Member State authorities.	31/12/2018	JRC technical reports
213 - TMA CC JRC.I.3	6589 - FMM2019 Frontex Media Monitor 2019	The FRONTEX Media Monitor (FMM) is a media monitoring tool aimed at facilitating and automating the collection, classification and dissemination of Open Source Information. The FMM increases the Frontex Situation Centre capacity to perform media and situation monitoring and provides a specialized tool to Frontex staff and external partners on border and migration related news.	JRC.I.3 Martin ATKINSON	7.2.e	HOME	EA	n/a			01/01/2019 31/12/2019	CON-TW	658901	FRONTEX Media Monitoring	Enhanced Open Source monitoring capabilities at FRONTEX helping it to fulfil its responsibilities related to border management including migration	17/12/2019	Technical systems
7.2.f increase the security and defence dimension of other EU policies (e.g. maritime (key orientation 1.4.c), aviation (key orientation 1.8.e), energy (key orientation 3.2.b), research, etc.).																
213 - TMA CC JRC.I.3	5841 - TIM for EDA Technology monitoring system for EDA	This activity is performed in the context of the collaboration between JRC and the European Defence Agency. An innovation monitoring system will be developed for the field of Defence. The Project will deliver: - A technology monitoring for EDA staff and access to TIM EDA for the extended EDA Community, pending agreement with data providers. Target: functional systems for media monitoring and technology monitoring by the end of 2017.	JRC.I.3 Olivier EULAERTS	7.2.f	JRC	n/a	n/a		EDA - European Defense Agency	01/01/2017 31/12/2018	CON-TW	2018001	EDA Monitoring system for innovation	The deliverable is an IT information system for monitoring innovation customized to the needs and context of the European Defence Agency	28/02/2018	Scientific information systems and databases
8. Towards a new policy on migration																
8.1. Migration																
8.1.a support the partnership framework and the new global compacts and improve the effectiveness of migration-related EU actions and resources;																
8.1.b facilitate the protection of children in migration by improving data and methods for biometric registration and assessment of their age;																
8.1.c support EU policies addressing push and pull factors of migration and other population displacements;																
355 - KCMD JRC.E.6	4829 - LMI Legal Migration and Integration	This WP will support EU policies on the integration of migrants by looking at: - local dimension of integration; - impacts of policies on integration; - social and economic resilience to migration; - public perception on migration. The first two activities are listed under the Action Plan of the KCMD - priority area 1 "Legal migration and Integration" and agreed with policy DGs. External partners include OECD, MPI and the EU-MPC. The main deliverable in the WP will consist in an analysis of the determinants of spatial segregation of migrant communities in EU cities. Stakeholder involvement on the result of this study and qualitative analyses of local integration in cities will be done in collaboration with the Unit "Foresight, Behavioral Insights and Design for Policy". This activity is contributing to the JRC Cities initiative and linking to LUISA and the Knowledge Centre for Territorial Policies. Additional research will look at the possibility of using micro data and mobile phone data to: - assess the effect of segregation on income, education and labour force participation and to move from indicators of spatial residential segregation to indicators of social segregation. Two joint deliverable with Unit "Modelling, Indicators and Impact Evaluation" will analyse the impacts of EU admission policies on immigrants' individual labour market outcomes and the relation between spatial segregation of migrants and education at local level. A third deliverable, jointly developed with Unit "Human Capital and Employment", will analyse the	JRC.E.6 Fabrizio NATALE	8.1.c	HOME	JRC	Laura Corrado (HOME.B.1)	REGIO		01/01/2018 31/12/2019	INS-RS	0	Migrant communities	This study is based on a data set generated by JRC on the basis of census data collected in 2017 from National Statistical Institutes. This data set has an unprecedented level of coverage and spatial resolution which will allow for the first time to compare segregation determinants and effects at local level across EU cities and nationalities. The report will explore how the different segregation patterns across cities and nationalities depend on the size of cities, size of migrant communities, historical and geographical factors.	31/12/2018	Science-for-policy reports
												1	Skill matching and migration	The technical report will consist in an assessment of the matching between the skills supplied by immigrants and those demanded by the labor market. It will allow identifying 1) those third country nationalities whose stock of skills is mostly mismatched hindering thus their integration into the society; and 2) those MS who are mostly affected by the phenomenon, deterring their productivity.	31/12/2019	JRC technical reports
												3	Public perception on migration in Twitter	The technical report will consist in a descriptive analysis of the volume of tweets related to migration by and categories of keywords.	31/12/2019	JRC technical reports
												4	Identifying particular pressure conditions on the asylum system of EU Member States	This study is based on the composite indicator Asylumometer, developed by the JRC, to measure the pressure on the first instance of the asylum system of each EU Member States by applicants from specific countries of origin. The possible use of the Asylumometer for providing early warning on particular pressure conditions will be assessed.	01/12/2018	Science-for-policy reports
355 - KCMD	4830 - EDM External Dimension of	The WP is fully aligned with the corresponding priority of the KCMD Action Plan, follows closely the implementation of the European Agenda for Migration (EAM) [COM(2015) 240 final] and is intended to offer support for the new Partnership Framework [COM(2016) 385 final] to mobilise and focus EU actions and resources in external work on managing migration. To maximize the effectiveness in the use of EU resources, better quality data and information at country-level and, where possible, also at the local level for key third countries of origin and transit are necessary. To this aim, the WP will deliver periodically Migration Profiles (MP) for a number of relevant origin or transit countries using a new simplified standard methodology and template for the MP, already tested on a first set of compact countries in 2017. These MPs combine key structural characteristics based on official statistical data of the countries of interest (the Structural MP, including indicators on migration, demography, the different stressors etc.) with a synthesis of the latest developments including at sub-national level, using open source intelligence (OSINT) and operational data (the Flash MP). An additional line of activity foresees identifying and analyzing a few common issues, not strictly limited to migration, to help improve further the strategic relationship with Africa, building on the large amount of information being collected for the implementation of the MPs and on regional level analysis. This work will deliver a first version of an Atlas of Migration both in the EU and African partner countries, a product intended to be updated annually. In addition to country-specific information for sending, transit and EU destination countries, this tool will contain a section devoted to regional analysis e.g. to help understand better intra-Africa migration and mobility, or how different migration and demography indicators of interest vary across the different African regions, including how they could potentially impact migratory flows towards the EU.	JRC.E.6	8.1.c	DEVCO	JRC	Laura Corrado	ECHO EEAS		01/01/2018	INS-DC	1	Structural Migration Profiles (MP) for 2018	The deliverable will contain the Structural MP for selected countries in areas of interest, i.e. Central Africa and the Great Lakes (CA-GL), East and Horn of Africa (EHA), West Africa (WA) and Middle East and North Africa (MENA) (following the UNHCR classification). The MP structure includes the following elements: (1) Structural MP containing key structural characteristics of the countries of interest (on migration, demography, different stressors etc.) including the regional perspective, looking at past trends. It is based on official statistical data and will be produced once a year. (2) Flash MP containing the analysis of the latest developments using open source intelligence and operational data, including the sub-national level. It is updated every 4 months. (3) Country MP containing the synthesis of the knowledge produced over one year, including validation by desk officers.	15/12/2018	JRC technical reports
												2	Migration Profiles (MP) - 2018	The deliverable will contain the Migration Profiles for 2018 for the 5 compacts countries (Mali, Nigeria, Niger, Senegal, Ethiopia). Each MP will contain the 3 quarterly Flash MP (2018Q1, 2018Q2, 2018Q3), the annual Country MP and the corresponding Structural MP. The MP structure includes the following elements: (1) Structural MP containing key structural characteristics of the countries of interest (on migration, demography, different stressors etc.) including the regional perspective, looking at past trends. It is based on official statistical data and will be produced once a year. (2) Flash MP containing the analysis of the latest developments using open source intelligence and operational data, including the sub-national level. It is updated every 4 months. (3) Country MP containing the synthesis of the knowledge produced over one year, including validation by DG DEVCO/EEAS desk officers with knowledge of the specific countries.	15/12/2018	JRC technical reports
												3	Atlas of Migration - 2018	The Atlas of Migration is intended to compile in a complete and systematic way the most relevant indicators and information on countries sending, transiting or receiving migrants with a focus on the EU as a receiving region. It will contain three sections: Section 1: Sending and transit countries (based on information in the Structural MP). Section 2: EU countries. This section will collect indicators, for each MS, about different aspects of relevance, such as asylum, legal migration, integration, demography etc. Section 3: Regional analysis. This will contain analysis of different aspects of interest at the regional level. Particular attention will be paid to (1) analyzing and in-depth understanding at intra-Africa level, of mobility, the situation of refugees and IDP's, identification and monitoring of routes in transit countries, etc.; (2) analyzing the impact on the EU of migration flows from different regions in sending areas including the demographic element.	31/10/2018	Books and monographs with JRC editorship

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
JRC.E.6	External Dimensions of Migration		Dario TARCHI				(HOME.B.1)	HOME NEAR		31/12/2019		4	Structural Migration Profiles (MP) for 2019	The deliverable will contain the Structural MP for selected countries in areas of interest, i.e. Central Africa and the Great Lakes (CA-GL), East and Horn of Africa (EHA), West Africa (WA) and Middle East and North Africa (MENA) (following the UNHCR classification). The MP structure includes the following elements: (1) Structural MP containing key structural characteristics of the countries of interest (on migration, demography, different stressors etc.) including the regional perspective, looking at past trends. It is based on official statistical data and will be produced once a year. (2) Flash MP containing the analysis of the latest developments using open source intelligence and operational data, including the sub-national level. It is updated every 4 months. (3) Country MP containing the synthesis of the knowledge produced over one year, including validation by desk officers.	15/12/2019	JRC technical reports
												5	Migration Profiles (MP) - 2019	The deliverable will contain the Migration Profiles for 2019 for the following countries: Mali, Nigeria, Niger, Senegal, Ethiopia, Libya, Egypt, Afghanistan, Bangladesh, Iran). Each MP will contain the 3 quarterly Flash MP (2019Q1, 2019Q2, 2019Q3), the annual Country MP and the corresponding Structural MP. The MP structure includes the following elements: (1) Structural MP containing key structural characteristics of the countries of interest (on migration, demography, different stressors etc.) including the regional perspective, looking at past trends. It is based on official statistical data and will be produced once a year. (2) Flash MP containing the analysis of the latest developments using open source intelligence and operational data, including the sub-national level. It is updated every 4 months. (3) Country MP containing the synthesis of the knowledge produced over one year, including validation by DG DEVCO/EEAS desk officers with knowledge of the specific countries.	15/12/2019	JRC technical reports
												6	Atlas of Migration - 2019	The Atlas of Migration is intended to compile in a complete and systematic way the most relevant indicators and information on countries sending, transiting or receiving migrants with a focus on the EU as a receiving region. It will contain three sections: Section 1: Sending and transit countries (based on information in the Structural MP). Section 2: EU countries. This section will collect indicators, for each MS, about different aspects of relevance, such as asylum, legal migration, integration, demography etc. Section 3: Regional analysis. This will contain analysis of different aspects of interest at the regional level. Particular attention will be paid to (1) analyzing and in-depth understanding at intra-Africa level, of mobility, the situation of refugees and IDP's, identification and monitoring of routes in transit countries, etc; (2) analyzing the impact on the EU of migration flows from different regions in sending areas including the demographic element.	31/10/2019	JRC technical reports
<p>8.1.d analyse the impact of admission and integration policies; examine factors enabling integration; measure the impact of migration on economic growth, the labour market, employment, wages, health, welfare, education, research, wellbeing, and demographics and explore the local dimension of integration (e.g. cities where most of the integration issues arise); and assess likely scenarios for demographic changes in Europe;</p>																
5046 - CAS-1 JRC.A.5	5071 - CAS1-Pop&Mig Centre of Expertise on Population and Migration (CEPAM)	This research project on demography and migration assesses in a multi-dimensional analysis the consequences of alternative future population and migration trends in Europe as well as in the main regions of origin for migration into Europe. Push and pull factors and different kinds of migration streams are studied. In addition, the impact of migration flows for Europe in terms of population ageing and the productivity of Europe's labour force over the coming decades. This is done using macro-modelling techniques. Populations scenarios by age, sex, level of education and labour force participation for all EU member states will be studied. Moreover, micro-simulation models with more characteristics will be employed in the study of migrant integration. Scenarios by age, sex and level of education will be performed for potential sending countries in Africa, Asia and Eastern Europe. They will be combined with aspects of socio-economic and environmental change following the narratives of the Shared Socio-economic Pathways to assess possible future push factors. European Population Dynamics will be derived calibrating alternative near term immigration and labour force scenarios for all EU member countries in terms of their consequences for long term productivity, economic growth and social cohesion in Europe. For addressing the latter dimension the population will be further subdivided by religion, country of origin and education- related integration potential for selected member States. This will also take into account different possible migration channels and mechanisms such as past migration experiences, linguistic, historical, and geographic aspects. These alternative scenarios will be combined with intra-EU demography and labour market data (i.e. ageing, social cohesion and labour market key indicators and changes) to foresee possible impact of migration into EU society. Moreover, specific scenarios taking into account sudden dramatic changes in migration flows will be studied. The assumptions of the models will be scrutinised. Information from qualitative and quantitative studies will contribute to the improvement of the assumptions. The work will be executed also in close collaboration and interaction with the new unit on Migration, Demography and Governance and project MIGRPERSP, MIGRIMFACTS.	JRC.A.5 Nikolaos STILIANAKIS	8.1.d	HOME	JRC	Delilah AL KHUDHAIRY	ECFIN ECHO EPSC ESTAT GROW NEAR	Int Disaster Resp - International disaster response, including, Humanitarian Community Reg Aut Mig - Candidate Countries / Members States regulatory authorities on Migration UNISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UN OCHA - United Nations, Office for the coordination of Humanitarian Affairs	01/07/2016 30/06/2019	INS-CAS	1	Report on demographic change and the drivers of future migration into Europe	This policy report summarises the key findings of the novel multidimensional demographic approach to assess the consequences of alternative future population and migration trends in Europe as well as the main regions of origin for migration into the EU. The report will include a detailed study of push and pull factors for migration, describe different scenarios of migration streams. An important part of the report will deal with the impact of migration flows for the EU in terms of population ageing and the productivity of labour force over the coming decades. This report will be the basis for a high level scientific book publication on the outcome of the Centre of Expertise on Population and Migration project	31/12/2018	Science-for-policy reports
												2	Analysis of demographic population dynamics, drivers of migration and integration	The part of the output includes all technical work that will be performed to inform the policy report of deliverable 1. The output will be presented in scientific conferences and workshops, also those at the intersection between science and policy on demography and migration. Specifically there will be: 1) an analysis of conflict and political instability as driver of human migration. 2) a study of migration pressure and multiregional analysis of migration. 3) An analysis of the labour force survey (LFS) data on second generation and migration related topics. 4) A study of the migration drivers at global and EU level including estimation of migration and within EU mobility flows 5) Macro-projections of human capital and labour force participation and economic consequences of demographic change 6) Specific study of ethno-cultural diversity, integration and perceptions among immigrants and natives in European countries 7) Specific study of migration and segregation in European cities	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
7596 - Resilience4EU JRC.B.1	6431 - MIGRES Resilience and the challenge of migration	Migration has been recognized as one of the main challenges in modern societies, as it affects the educational sector, the labour market and, more broadly the social fabric. While migration is an inherent element of modern globalized economies and can hence be interpreted as a structural element of modern societies, recent humanitarian crisis are fostering a different type of mass migration, which generates specific problems. The objective of this work package is to go through the dashboard steps (as detailed in the project description) for the challenge of migration. It means identifying the sub-types of corresponding shocks and stresses, working on the catalogue of shock episodes, finding the system variables that are affected directly or indirectly by the shock, developing the appropriate resilience indicators within the system view (including assets, outcomes and the engine), and eventually finding the related resilience characteristics.	JRC.B.1 PETER BENZUR	8.1.d	HOME	JRC	n/a	DEVCO EAC ECHO EEAS EPSC ESTAT		01/01/2018 31/12/2019	INS-UR	1	Migration and the labour market	This deliverable will provide evidence on how labour market is affected by migration, with particular attention to distributive effects, and on how such impact depends upon different policies (which include migration policies but also labour market institutions). Of particular importance are: a) assimilation of migrants into the domestic national labour market (by industry and occupation) b) impacts of migrants on the labour market performance of domestic workers. The results of this analysis can then be used to provide estimates of the labour market response of the MS to different migration shocks (by age, origin, human capital composition, gender etc.); but also benchmarking MS in terms of their migration and labour market policies.	31/05/2019	Science-for-policy reports
355 - KCMD JRC.E.6	6527 - RETHINK Rethinking integration in the context of growing diversity	Europe is experiencing increased diversity both thanks to the growing proportion of immigrant and ethnic minority groups and the growing diversity within these groups. This has major implications for how integration and fairness are conceptualised and translated into policy at different levels. Cities and multiple stakeholders play an increasing role in this respect. This project will support the systemic understanding of integration in the context of growing diversity by applying foresight and behavioural insights tools and methods. "Integration into what?" and "on what terms?" are key questions that need to be debated and addressed in order to guide today's investments into integration based on a longer-term vision of social cohesion and multi-level governance in Europe. The outcomes of the project will therefore also support better targeting of funding and evaluation of integration initiatives as specified in the European Agenda on Migration. It contributes to the demand for foresight and behavioural science as one of the mandates of the EC Knowledge Centre on Migration and Demography. The project will build on the ongoing foresight exercise (FOR-MIGRASYI) that focuses on the future of	JRC.I.2 Alice SZCZEPANIKOVA	8.1.d	HOME	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	Rethinking integration in the context of growing diversity	Final report that will present our desk research and the insights from engagement with stakeholders at different levels of governance, notably the city level. The report will also summarise the experiences with using the SES and working with scenarios	17/12/2018	Science-for-policy reports
<p>8.1.e support early warning, risk analysis and projection for greater situational awareness of migration flows;</p>																
355 - KCMD JRC.E.6	4828 - TPM Trends and Projections of Migration	The WP is contributing to improve the capacity of formulating future migration scenarios for the EU and will look specifically: - propensity of people to migrate; - migration in the context of demographics; - use of alternative data to estimate migration flows. The main activity under this WP is the first release of the Migration Inclination Indexes. These indexes will address the key question of 'Why people migrate' by quantifying the relevance of the drivers of international migration movements, on the basis of an analysis of medium to long-term historical data. In particular, the indexes will measure the extent to which economic, demographic, geographical and policy variables in the origin and destination countries influence migratory patterns. This line of work, by addressing the key question of push and pull factors for the different forms of legal migration (family unification, labour, education, etc), is providing for a quantitative approach to support a number of priority topics of the KCMD. In addition to considering a macro perspective, the indexes will also look at individual factors affecting the intention to migrate by analyzing the Gallup World Poll survey. This analysis will allow to understand how individual conditions in the domains of Law and Order, Food and Shelter, Job Creation, Financial Well-being, Personal Health, Civic Engagement and Evaluative Well-Being in all countries in the world may affect people's decision to migrate from and towards the EU. The demographic relevance of migration will be evaluated with the contribution of the work on the indexes in the context of demographic projections formulated by the JRC project Centre of Expertise on Population and Migration (JRC.A.5). The weighting of the relevance of variables such as GDP per	JRC.E.6 Fabrizio NATALE	8.1.e	HOME	JRC	Stefano SIGNORE (DEVCO), Laura Corrado (HOME.B.1), Giampaolo LANZIERI (ESTAT F.2)	DEVCO ECHO EEAS EMPL ESTAT NEAR	EEAS - European External Action Service	01/01/2018 31/12/2019	INS-RS	3	Migration inclination indexes	The indexes will be presented in the form of a final report summarizing in quantitative terms the role of the different drivers for migration in each country with a special focus on migration towards the EU. One chapter of the report will cover the intention of migration based on data from the Gallup Survey. The report will combine intermediate deliverables produced during 2017 and 2018 looking at specific drivers (like poverty, inequality, demography, conflicts, in collaboration with JRC's Centre of Expertise for Population and Migration (CEPAM) or at specific forms of migration (e.g. forced vs voluntary). Dissemination of the indexes will consist of publicly accessible dashboards to enable interactive exploration of the main migration patterns in the world and the different indexes which can help to explain these past patterns.	17/12/2018	Science-for-policy reports
												4	Predicting migration flows with air passenger traffic data	This deliverable will consist of a peer-reviewed paper describing a model to predict migration flows from air passenger data at international level. The model will be calibrated and benchmarked against data from statistical data sources and compared to other models aimed at estimating international migration flows.	16/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												5	Many more to come? Migration from and within Africa	The report will provide an analysis of the past of African migration; the present patterns of migration within and from Africa; the individual intentions to migrate; the macro drivers of migration within and from Africa; the potential impacts of demography and development on migration within and from Africa in a medium term perspective.	17/12/2018	Science-for-policy reports
<p>8.1.f operate the Knowledge Centre for Migration and Demography, provide policy-oriented research, evidence-based analyses and observatories, increase the uptake of research, and strengthen partnerships and outreach.</p>																

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
355 - KCMD JRC.E.6	5105 - OP-KCMD Operation of the Knowledge Centre on Migration and Demography	This work package provides for the data, information and IT infrastructures necessary to build a comprehensive evidence-base for EU policy making on migration. It also caters for the exploitation, dissemination and uptake of the evidence-based knowledge through flagship publications, workshops and a web site, including for the provision of basic data and research services for EU policy makers. In more detail this will include, among others: (1) further development of the Dynamic Data Hub and the Migration Data Catalogue initiatives to improve access to migration data and promote their use across policy areas; (2) contribution to the definition of an improved policy for migration and other data of interest that is better suited to serve actual and future policy needs; (3) underpinning research activities to exploit new and alternative data sources including innovative data collection technologies to address data gaps; (4) providing support to the daily operation of the KCMD with particular attention to the KCMD Steering Group; (5) ensuring an active, leading role in the framework of the Community of Practice; (6) to maintain and update the searchable catalogue on migration and demography knowledge management; (7) coordination of the communication and dissemination tasks, including the organization of workshops and training and the production of policy briefs, newsletters and flagship reports.	JRC.E.6 MICHELE VESPE	8.1.f	HOME	JRC	GRAU Christine	CLIMA COMM DEVCO EAC ECHO EMPL EPSC ESTAT JUST NEAR REGIO RTD SG	- EUROPEAN UNIVERSITY INSTITUTE IASA - International Institute for Applied Systems Analysis EEAS - European External Action Service FRONTEX - European Agency for the Management of Operational Cooperation	01/01/2018 31/12/2019	INS-RS	1	Dynamic Data Hub and Migration Data Catalogue	Further development and evolutive maintenance of the Dynamic Data Hub and the Migration Data Catalogue initiatives to facilitate and improve access to migration data. This includes adding new datasets, routinely updating the existing ones and implementing new functionalities to widen the scope of the tools.	14/12/2018	Scientific information systems and databases
												2	Data for Migration	Produce and disseminate a thematic report summarising knowledge on migration data for policymakers. Starting from current gaps in migration data, the report will analyse possible alternative methods and data sources for a better understanding of migration-related phenomena.	03/12/2018	Science-for-policy reports
												3	KCMD analysis services	Collection of tailored analyses and other contributions produced in response to specific requests. The compendium will include thematic policy briefs and facts-and-figures. For specific topics (e.g. age assessment of minors, the biometric registration of asylum seekers or information systems for migration) technology briefs will also be produced.	03/12/2018	JRC technical reports
												4	Dynamic Data Hub and Migration Data Catalogue	Further development and evolutive maintenance of the Dynamic Data Hub and the Migration Data Catalogue initiatives to facilitate and improve access to migration data. This includes adding new datasets, routinely updating the existing ones and implementing new functionalities to widen the scope of the tools.	13/12/2019	Scientific information systems and databases
												5	KCMD analysis services	Collection of tailored analyses and other contributions produced in response to specific requests. The compendium will include thematic policy briefs and facts-and-figures. For specific topics (e.g. age assessment of minors, the biometric registration of asylum seekers or information systems for migration) technology briefs will also be produced.	13/12/2019	JRC technical reports
9. Europe as a stronger global actor																
9.1. Global safety and security																
9.1.1. Fight against security and safety threats, crisis management and disaster resilience																
9.1.1.a disaster resilience, emergency and crisis management - provide scientific and analytical services, develop tools and build capacity to support the entire disaster risk management cycle (disaster prevention, preparedness, response and recovery), including via a dedicated Knowledge centre for disaster risk management, and the damage assessment of natural disasters in the context of application for Solidarity Fund assistance, and provide assistance for																
541 - SEED JRC.E.1	287 - Critch Crisis Management Technologies and Tools	The Crisis Management Technologies and Tools work package is to span the whole disaster alerting/information chain from the instrumentation and local sensors, to the monitoring and visualization systems, international coordination and national/coordination and field dispatching tools. There is a very close collaboration with the Emergency Response Coordination Centre (ERCC) at DG ECHO, which has relied on information systems developed in Critch since 2004. JRC, in collaboration with UN-OCHA, developed and operates the Global Disasters Alerts and Coordination System (GDACS) that is the reference system for all the humanitarian organizations (including ERCC), part of ECHO's and OCHA's Standard Operating Procedures for emergency response. To respond to Sendai Target G (on multihazard EWS), Critch will create a Multi Hazard version of GDACS, named GDACS+, that will collect information and alerts related to other types of natural disasters currently not included in the traditional GDACS (Floods, Forest Fires and Droughts) and will improve handling of uncertainty. Further synergy with the Copernicus Emergency Management Service is envisaged. Critch has also a strong technology focus through the European Crisis Management Laboratory (ECML). ECML activities support Member States with assessing their response capability at national or sub-national level, which must be reported to the Commission every 3 years under the Union Civil Protection Mechanism. ECML develops technology (field reporting tools, sea level monitoring instrumentation, crisis rooms, mobile crisis rooms) and organizes workshops with Member States, industry and scientists to explore research needs. The work package is an essential component of the Disaster Risk Management Knowledge Centre, and keeps the JRC at the forefront of science and a key player for EU civil protection.	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	JRC	Juha AUVINEN	GROW HOME	Civ Protection EU - Civil Protection Services in Member States EEAS - European External Action Service WFP - World Food Program of the United Nations	01/01/2017 30/12/2020	INS-RS	2018005	IDSL Sea Level Measurement Network	The IDSL Network, created with the help of DG-ECHO and further expanded with JRC funds. This network needs to be maintained and verified to be sure about its functionality. Also the first instruments that have been installed will be donated to the host countries so that they can further provide maintenance. The network is constantly controlled in order to be sure that all the instruments are properly working and to organize prescribed maintenance. Also the Floating Buoy acquired during 2017 will be instrumented and a first experiment with the new floating buoy will be performed during 2018: it will represent a major step towards the development of a real efficient Tsunami warning system because the tide gauge will be positioned offshore a location and will be able to identify Tsunami waves approaching the coasts. The installation off-shore will be performed in collaboration with the Italian Institution in charge of mareographic network, ISPRA.	30/12/2019	Technical systems
												201802	Technological Workshops (2)	The ECML's activities include workshops aimed at exploring specific technological aspects of the Crisis Management process: to be held twice a year, the workshops provide a forum where research, market and end-users can meet and acquire a deeper vision of the proposed technology. In 2018 two workshops will be organized: oMobile Devices for Field Reporting oEarly Warning Systems for Natural Disasters (hazard type to be decided) In 2019 two workshops will be organized but their topic has not yet been decided	30/12/2019	Science-for-policy reports
												201803	Instrumentation and Sensor Analysis/development	Installation of the GNSS Sea Level Instrumentation device in a test basin in order to get operational experience on the device. State of the art report on Sea Level instrumentation and highlight of the added value to develop instrumentation at EU level. Organization of a workshop on Sea Level instrumentation	31/12/2018	Technical systems
												201804	UCPM Capabilities in DRM report	Science for Policy Report describing potential methodologies and metrics to describe capabilities in DRM, according to the requirements laid out in the Union Civil Protection Mechanism. The report intends to provide additional guidance for EU Member States. The report will include an assessment of current capabilities in selected Member States according to the methodologies and based on result of the ECML technology workshops. The report serves both response and prevention policy needs.	31/03/2018	Science-for-policy reports
												201805	TUPAC Platform Development	Based on the knowledge acquired by the ECML also through the participation in EU funded project about COP (Common Operational Picture) and CIS (Common Information Space) with the adoption of new technologies partly already in use in the ECML, the Toolkit for Unified Procedures and Applications for Crisis management TUPAC will give the means to provide Civil Protections, Fire Brigades, Police Corps and Red Cross organizations with a common platform to exchange harmonized data and to provide the users effective and better aimed user interfaces.	31/10/2018	Technical systems
												201806	GDACS+ Architecture	Improvement of GDACS and preparation to integrate data from all JRC hazard systems. Manage GDACS international community, organize the annual meeting together with OCHA. Improve GDACS: integration of Global Human Settlement Layer, quantify uncertainty of alerts. JRC will ensure the correct functioning of the system.	31/12/2018	Science-for-policy reports
												201801	Implementation and management of the Copernicus EMS Mapping service	Report on the EMS Mapping service including a summary on the main achievements, service developments, as well as international cooperation in the field of Earth Observation for emergency mapping and disaster risk reduction.	30/11/2018	JRC technical reports
222 - DRMKC JRC.E.1	437 - S&T for DRMKC Science and Technology for Disaster Risk Management Knowledge Centre	The objective of the work package is the management of Copernicus EMS-Mapping and innovation in emergency mapping and evaluation of potential applicability and added value of Remotely Piloted Aircraft Systems for crisis mapping and disaster risk management. Main activities: 1. Technical and administrative management of Copernicus EMS - Mapping with its three components (Rapid Mapping, Risk & Recovery Mapping, Validation) as described in the sub-cross delegation agreement and administrative arrangement with DG GROW (JRC No. 33539-2014 NFFP). All three components include: contract and budget management (incl. preparation of new framework contracts in 2018), technical and quality reviews, products dissemination including web-portal administration and development, and participation to regular Copernicus (Committee, User Forum, communication & user uptake networks) and other meetings. The pilot study on the use of UAVs and/or manned aerial platforms continues. 2. Participation in international initiatives and networks oriented to innovation and scientific, technological knowledge transfer (e.g. International Working Group on Satellite-based Emergency Mapping IWG-SEM, Global Partnership using Space-based technology applications for disaster risk reduction GP-STAR, Disaster Risk Management Knowledge Centre DRMKC). Development and testing of platform for real-time visualization and distribution of loss data and decision support. The WPK holds most of the core activities of the DRMKC and provides scientific and technical support to our Partner DGs and National Authorities. Some of these activities are: the development of tools for collection, analysis and dissemination of data, research results and available information in the fields of DRM and DRR; elaboration of guidance for National Risk Assessment and Risk Management Plans; analysis regarding how to improve the science-policy interface; loss data collection, database architecture and multiple uses to serve several policies. The WPK contributes to an improved science-policy interface through networking activities in the field of Risk Assessment, Risk reduction, Loss Data and Science-Policy Interface among the different actors of the DRM cycle. Organization of dedicated WS and training sessions involving EU MS will be one of the tasks. The coordination of the contribution to the UNISDR Science and Technical Partnership and its conferences is part of our activities. In addition this WPK stimulates the exchange of best practices and research results, as well as provides tailored scientific and technical solutions to facilitate the implementation of the Sendai FW for DRR, the UCPM and other relevant EU and global policies and agreements in the context of DRR and DRM. In particular, loss recording practices and tools are strengthened and expanded to improve usability beyond narrowly defined objectives and include prevention policy and disaster risk modelling. The quantification of expected disaster losses, together with uncertainty quantification, would help evaluating i) the amount of acceptable loss, ii) the necessary investments in risk management strategies for reducing losses, iii) tracking risk-based loss information and iv) measuring progress against targets of the Sustainable Development Framework, Paris Agreement and the Sendai framework for disaster risk reduction. This Work Package aims to develop guidance for a national multi-hazard database for the systematic collection of loss data that will be of interest for the facilitated and harmonized implementation of different EU directives and other Global agreements (SFDRR, SDG, CCA, UCPM, Flood Directive, Solidarity Funds) and will be INSPIRE compliant. The preparation of the second volume of the Science for DRM will be one of the core activities within this WPK. DRMKC Newsletters will be quarterly published to facilitate the exchange of information within DRM	JRC.E.1 Montserrat MARIN FERRER	9.1.1.a	ECHO	JRC	Ian Clark	CLIMA DEVCO ENV GROW HOME REGIO RTD SANTE	- Presidenza del Consiglio dei Ministri Dipartimento della Protezione Civile Civ Protection EU - Civil Protection Services in Member States UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR)	02/01/2017 31/12/2020	INS-RS	012018	Disasters Loss Database & Web Collection Tool V0.0	A scientific peer-reviewed will be produced to illustrate the added value of the loss Db to Risk Assessment, Capabilities Assessment and Risk Reduction fields. A technical report will describe in detail the architecture proposed for the new Disasters Loss Database web-service. A first version of the collection tool will be developed and tested with the Members States (2 or 3 maximum) participating to the feasibility study.	20/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												022019	Update of Guidance for Loss data collection and recording	An updated version of the previous guidelines (delivered in 2015) will be developed based on the progress made at the national level.	20/12/2019	Science-for-policy reports
												20182	Collection of Good practices for Risk Assessment	Contribute to improving a science-based methodology for National Multi-hazard risk assessments. The scope of the work is to improve the effectiveness of the National Risk Assessments at National while providing support to DG ECHO in establishing the minimum requirements for the summary of the NRAs that is submitted to EC under the UCPM. The work will contribute to the potential revision of the Guidelines for NRA and Mapping led by ECHO.	20/12/2018	Science-for-policy reports
												20183	DRMKC Newsletters	The DRMKC will public bimonthly Newsletters that will be disseminated among the DRM, DRR and CC communities to share information regarding new research projects, results, trainings, events and other initiatives of relevance for them.	20/12/2019	Science-for-policy reports
												20184	Establish DRM database in DRMKC	Establish a DRM database containing reports, peer-review articles, research programmes, datasets, information regarding risk related models, education opportunities, events and news classified by thematic areas in a cross-sectorial field. The database will be provided with geo-visualization tools and advance technology to facilitate sharing of information and fostering networking among the experts and institutions registered.	14/12/2019	Scientific information systems and databases

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
		community.										20201	Science for DRM report 2020	The DRMKC will publish on regular basis a report meant to support a solid science-policy interface for DRM. The multi-author and multi-hazard report is the first in a series that will fill the gap in preparation for Sendai framework for DRR and show the positive exploit of EU research funding. It shall provide reviews of the scientific evidence base and its practical use in various areas of disaster risk management in Europe: the translation of solid science into useful and used recommendations.	20/12/2020	Science-for-policy reports
222 - DRMKC JRC.E.1	984 - NATECH Technological risks due to natural hazards	Numerous incidents have highlighted the vulnerability of industry and critical infrastructures to natural-hazard impact (e.g. earthquakes, floods, storms, space weather, etc.), the potential for major consequences on safety and security, and the growing reliance of society on critical-infrastructure services. This WPK aims to enhance the capacity of the EU and its international partners to manage the risks to these technological systems from natural hazards (so-called Natech risk) by developing novel methodologies, tools and services for the identification, assessment and visualization of these risks, and through capacity building activities in the EU and beyond. More specifically, this WPK will improve the knowledge base to understand the EU's current and future vulnerability to these risks, including via the forensic analyses of accidents to understand disruption patterns and dynamics, as well as cascading effects; it will develop and upgrade methodologies, web-based tools and data-base products for Natech risk assessment and risk visualisation to increase the resilience of industry to natural-hazard impacts and enhance industrial safety and supply security, e.g. through the further development of the JRC's RAPID-N tool for rapid Natech risk assessment and mapping and its eNATECH database for lessons learning studies; engaging government, industry, academia, civil protection and international partners (including OECD, UNISDR, UN Environment, WHO) the WPK will strengthen Natech risk governance and support EU policy by improving prevention and preparedness in industry and civil society by leading the development of science-based recommendations and guidance for better protecting critical assets and for increasing the competitiveness of industry by providing a level playing field to all; and finally the WPK will build capacity in the EU and outside by training stakeholders in risk assessment and risk reduction and by providing a forum for knowledge exchange. This WPK supports the EU Civil Protection Mechanism, the Seveso Directive, the Critical Infrastructure Protection Directive and the Sendai Framework for Disaster Risk Reduction. It also contributes to WPKs 4888, 489 and 6369 and collaborates with staff from E.1 and C.3.	JRC.E.2 Elisabeth KRAUSMANN	9.1.1.a	ECHO	JRC	T. de Lannoy (ECHO A3), R. Schilro (ECHO A5), T. Fell (HOME), A. Kiriazis (ENV), A. Szolyak (ENER), T. Simonart (DEVCO), G. Paunescu (CLIMA)	CLIMA DEVCO ENER ENV GROW HOME	IASA - International Institute for Applied Systems Analysis AFAD - Prime Ministry Disaster and Emergency Management Agency (AFAD) CC EU - Candidate Countries EU E&I countries - Enlargement & Integration - countries ENTSOE - European Network of Transmission System Operators for Electricity K I U - Kyoto University MS EU - Member states EU NOAA - National Oceanic and Atmospheric Administration OECD - Organisation for Economic Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UNEP - United Nations Environment Programme (UNEP) WHO - World Health Organization	01/01/2016 31/12/2020	INS-RS	011	Critical infrastructure & climate change - Storms	Assessment of the risk to selected critical infrastructures due to the impact of climate change on the severity and frequency of storms. The study will identify potential infrastructure weaknesses with respect to strong winds, needs for additional protection measures in light of climate change and make recommendations to operators and authorities on areas where further attention should be paid, e.g. via appropriate land-use- and emergency planning, and preparedness.	15/12/2018	Science-for-policy reports
												08	Natech data portal	Establishment of a Natech data portal for the exchange of best practices in Natech risk reduction, and for support to the Natech user community including RSS feeds and email alerts, as well as newsletters.	30/04/2018	Scientific information systems and databases
												10	Forensic analysis of Natech accidents	Forensic analysis of onshore storm-triggered Natech accidents to identify accident causal mechanisms and scenarios, system and equipment vulnerabilities, and consequences for the population, the natural and built environment and the economy. Lessons learned will be identified for future accident prevention and consequence mitigation. This study will heavily rely on and contribute to the further populating with data of the eNATECH loss database.	31/12/2018	JRC technical reports
												13	EU Natech Expert Group	Preparation of the final ToR of the Expert Group, needs analysis and launch of identification of best practices for Natech risk reduction. This activity also supports the OECD Natech II project (2017-2020), to which the JRC contributes as member of the Steering Group. In collaboration with the EU Natech Expert Group the JRC will organise the Natech 2018 Symposium in which decision makers, industry, emergency responders and academia will discuss the state of play in Natech risk reduction, identify gaps and make recommendations on how to close these gaps.	31/12/2018	Science-for-policy reports
												14	Natech risk scenarios	Identify Natech risk scenarios for different types of hazardous equipment for earthquakes and floods and implement them in the RAPID-N tool. This will augment the predictive capabilities of RAPID-N by providing a diverse basis of scenarios for risk assessment and mapping. This task will also include a new release of the RAPID-N user manual to accommodate architecture changes, the implementation of risk assessment functionalities related to floods as Natech accident trigger and pipelines as additional vulnerable infrastructure.	31/12/2018	Scientific information systems and databases
												17	Guidance on Natech risk management - Phase 1	Preparatory work towards the development of guidance on Natech risk assessment and management for authorities and industry. Phase 1 will focus on the preparation of the Terms of Reference and identification of the main issues to be included in the guidance in collaboration with EU Member States and industry through the EU Natech Expert Group. This activity also supports the OECD Natech II project (2017-2020), to which the JRC contributes as member of the Steering Group.	31/12/2019	Science-for-policy reports
												18	Handbook of Natech scenarios	Preparation of a handbook of Natech scenarios for use in Natech risk assessment. These scenarios will be defined depending on the natural hazard that triggers the accidents and the affected equipment/industry type. This handbook will help authorities and industry with providing authoritative Natech scenarios for use in land-use and emergency planning.	31/12/2019	JRC technical reports
												19	RAPID-N Alert function - Phase 2	Extension of RAPID-N to implement a function for automated Natech risk analysis of hazardous installations in its database including consequence analysis and individual/societal risk assessment. This includes a notification function that will relay pertinent information including impact maps and probable consequences to authorities and industry for them to take quick preventive action and make informed decisions to ensure safety and minimize losses.	31/12/2019	Scientific information systems and databases
												20	Climate change impact on oil & gas infrastructure	Study on the likely impacts of climate change on the oil and gas infrastructure, including up- and downstream facilities, with a particular emphasis on floods and storms. This will identify the main vulnerabilities of the infrastructure and existing protection gaps, and support improved preparedness.	31/12/2019	JRC technical reports
												21	RAPID-N translation	Management of the translation of RAPID-N into languages different from the current English and Turkish implementation. The languages will be decided based on principal user location and specific user requests.	31/12/2019	Scientific information systems and databases
												22	Guidance on Natech risk management - Phase 2	Preparation of guidance on Natech risk assessment and management for authorities and hazardous industry in collaboration with Member States and industry through the EU Natech Expert Group. During Phase 2 the discussions with the Member States and industry will be concluded and the guidance document will be finalised. This activity also supports the OECD Natech II project (2017-2020), to which the JRC contributes as member of the Steering Group.	31/12/2020	Science-for-policy reports
												23	Lightning Natech risk assessment methodology	Development of a methodology for lightning Natech risk assessment and implementation into the JRC's RAPID-N tool to extend its risk assessment and mapping capabilities. As a first step, the methodology will focus on the impacts of lightning on fixed chemical installations, with a particular emphasis on storage tanks containing hazardous substances.	31/12/2020	Scientific information systems and databases
												24	Natech risk assessment case study for lightning	In collaboration with authorities and industry, apply the updated RAPID-N tool to a case study application to assess the impact of lightning strikes on process safety equipment and the associated risks.	31/12/2020	JRC technical reports
25	Best practice exchange for Natech risk reduction	Outcome report of a workshop on best practice exchange for Natech risk reduction with the participation of authorities and industry from EU MSs but also candidate, neighbour and third countries, as well as international organisations (OECD, UN). The workshop will discuss the necessary mechanisms for the exchange and sharing of knowledge and give example of best practices for Natech risk reduction for selected natural hazards.	31/12/2020	Science-for-policy reports												
541 - SEED JRC.E.1	1194 - DRIVER DRIVER	The demonstration project aims to improve European Crisis Management Capacity by: 1) Establishing a crisis management testbed 2) Reference methodologies for experiments and demonstrations 3) Roadmap for ICT and crisis management research for Horizon 2020.	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	GROW	QUEVAUVILLER Philippe	HOME	REA - Research Executive Agency of the European Commission	01/05/2014 01/03/2020	CON-IA	201801	Sub Project 2- Coordination	Overall coordination (coordination of all the activities in sub-project 20) and management of sub-project 20 "Test-bed". In particular, I will have to: provide a step-by-step methodological guidance (and update the guidance after each trial) to conduct trials and support all trials with respect to the general guidance of the test-bed.	31/10/2018	JRC technical reports
												201802	DRIVER Deliverables	Trial guidance methodology and guidance tool specifications Handbook for systematic designing of trials DRIVER Test-bed sustainability plan	30/12/2018	JRC technical reports
541 - SEED JRC.E.1	3354 - MIC9 (ERCC3) MIC9 (ERCC3)	Support ECHO in implementing its new Emergency Response and Coordination (ERCC) by: 1. maintenance of JRC disaster monitoring and warning systems and the ERCC Portal and 2. providing analytical and cartographic services for monitoring and reporting emergencies	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	ECHO	Juha AUVINEN			14/10/2015 13/06/2018	CON-AA					
541 - SEED JRC.E.1	3355 - MIC-10 (ERCC4) Support to the Union Civil Protection Mechanism: enhancing the monitoring, early warning and analytical capacities of the Emergency Response Coordination Centre (ERCC).	The project aims at supporting DG ECHO and in particular the ERCC Support to the Union Civil Protection Mechanism maintaining the monitoring and early warning systems, the ERCC Portal and providing analytical and cartographic services for monitoring and reporting emergencies, improving its monitoring, scientific and analytical capacity for a better planning of operations.	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	ECHO	Juha AUVINEN			09/12/2016 08/06/2018	CON-AA	201801	Report on the MIC10 Activities	Description of the activities performed and the results obtained under this AA	01/06/2018	JRC technical reports
222 - DRMKC JRC.E.1	3397 - LossDb - to merge Loss Database for DRMKC	Loss recording practices would need to be strengthened and expanded to include data useful beyond narrowly defined objectives and include, for prevention policy and disaster risk modeling. The quantification of expected disaster losses, together with uncertainty quantification, would help evaluating i) the amount of acceptable loss, ii) the necessary investments in risk management strategies for reducing losses, iii) tracking risk-based loss information and iv) measuring progress against targets of the Sustainable Development Framework and the Sendai framework for disaster risk reduction. This Work Package aims to start developing some national multi-hazard database for the systematic collection of loss data that will be of interest for the facilitated and harmonized implementation of different EU directives and other Global agreements (SFDRR, SDG, CCA, UCPC, Flood Directive, Solidarity Funds) and will be INSPIRE compliantly.	JRC.E.1 Montserrat MARIN FERRER	9.1.1.a	ECHO	JRC	Ian Clark	CLIMA ENV GROW HOME RTD	Civ Protection EU - Civil Protection Services in Member States INSPIRE LMO - INSPIRE Legally Mandated Organisations (LMO) UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR)	01/01/2017 31/12/2019	INS-UR	2	Disasters Loss Database & Web Collection Tool V0.0	A scientific peer-reviewed will be produced to illustrate the added value of the loss Db to Risk Assessment, Capabilities Assessment and Risk Reduction fields. A technical report will describe in detail the architecture proposed for the new Disasters Loss Data base web-service. A first version of the web-service data submission tool will be developed and tested with the Members States (2 or 3 maximum) participating to the feasibility study.	20/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												20191	Update of Guidance for Loss data collection and recording	An updated version of the previous guidelines (delivered in 2015) will be developed based on the progress made at the national level.	31/12/2019	Science-for-policy reports
222 - DRMKC JRC.E.1	3399 - DRM2017 - FloodCat Scientific Support to Disaster Risk Management Actions	A key building block for the EU's Humanitarian Aid and Civil Protection policies is risk assessment addressing both the global and European level. Since 2013, the JRC and ECHO have supported earlier phases of this work in several administrative arrangements to support earlier phases of this work. The purpose of this AA between the JRC and DG-ECHO is to support DG-ECHO and the EU Member States with new tools and methodologies to systematically assess multi-hazard disaster risk in EU countries and globally. It addresses objective 1 of the Disaster Risk Management Knowledge Centre, and is the follow-up of AA33672.	JRC.E.1 Francisco RIOS DIAZ	9.1.1.a	ECHO	ECHO	Julia STEWART-DAVID		- Presidenza del Consiglio dei Ministri Dipartimento della Protezione Civile Civ Protection EU - Civil Protection Services in Member States UN ISDR - United Nations International Strategy for Disaster	01/12/2016 30/11/2018	CON-AA	1	Interim Reports	A series of reports will be produced to keep our costumers informed about the progress made during the implementation of the contract.	31/01/2018	JRC technical reports
												2	Interim reports year 2	A series of reports will be produced to keep our costumers informed about the progress made during the implementation of the contract	21/12/2018	JRC technical reports
												3	Final Report	A final report will summarize the work delivered under this contract.	21/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
541 - SEED JRC.E.1	3809 - NATHA-2 Enhancing the monitoring, early warning and analytical capacities of the ERCC	This project will support the Emergency Response Coordination Centre (ERCC) by improving its monitoring, early warning and analytical capacities with regard to hydrological extremes such as floods and droughts as well as with forest fires. The European Flood Awareness System (EFAS), the European Drought Observatory (EDO) and the European Forest Fire Information System (EFFIS) will be further developed for specific ERCC requests, including the extension to neighbourhood countries and global applications.	JRC.E.1 Jesus SAN-MIGUEL-AYANZ	9.1.1.a	ECHO	ECHO	Juha Auvinen (ECHO.B.1)	ENV GROW		01/07/2016 06/01/2018	CON-AA	201801	Enhancing the monitoring, early warning and analytical capacities of the ERCC - Final Report	Final report of the Administrative Arrangement with DG ECHO for Enhancing the monitoring, early warning and analytical capacities of the ERCC	05/01/2018	JRC technical reports	
222 - DRMKC JRC.E.1	4382 - I-CAPP Chemical Accident Prevention and Preparedness for the Global Community	This project is aimed to maintain and enrich the EU's core knowledgebase for chemical accident prevention and preparedness and facilitate exchange and transfer of this information throughout the Member States and globally and in partnership with international organisations and third countries around the world. Given the great diversity of production processes that use dangerous substances, the ongoing evolution of technology, the dynamics of the marketplace, there is a demonstrated need for continuous analysis and information exchange to prevent the chemical accidents of the future. The JRC uses its unique position as the EU's in-house reference centre for analysis of chemical accident risks and management practices, to analyse trends in chemical risks and chemical risk management to help operators and governments address the newest and greatest concerns. This WPK also supports WPK 437. Please see the Note to the File with a justification for additional staff resources(risk assessment expert) in 2017-2018.	JRC.E.2 Maureen WOOD	9.1.1.a	ECHO	JRC	Bart Materne (ECHO), Tristan Simonart (DEVCO), A. Kiriazis (ENV)	DEVCO ENV GROW HOME NEAR	CC EU - Candidate Countries EU MS EU - Member states EU OECD - Organisation for Economic Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNEP - United Nations Environment Programme (UNEP)	04/01/2016 15/12/2020	INS-RS	02 03 04 05 09 10 11 13 14 16 19 20 23 24 25	Global Accident Trends Accident Analysis Methodologies 2017-18 Accident Analysis Methodologies - 2019 Accident Analysis Methodologies - 2020 ADAM - Model Implementation - 2018 ISA Tool for Land-Use Planning - 2018 Computer Based Fluid dynamic model 2019-2020 Common Inspection Criteria (CIC) - 2018 Common Inspection Criteria (CIC) - 2019-2020 Scientific Collaboration and Exchange - 2018 Knowledge Management Strategy/Interface 2018 Cross-sectoral Initiatives 2018 Cross-sectoral Initiatives 2019 Data Mining/Big Data Beyond Phase 2- 2019-2020 Scientific Exchange and Collaboration - 2019	Two reports will be produced as a contribution to the Sendai Framework, supporting in particular the EU-OECD collaboration on chemical accident risk reduction. One report is the final report on emergency response lessons learned. The other report is the JRC's study of global chemical accident trends 2012-2018. The main deliverable is the Accident Analysis Benchmark Exercise Workshop to present and discuss results of multi-stakeholder team exercises. The results will be used in a next phase to produce the Accident Analysis Handbook. The deliverable will be represented by a summary report of the workshop. The main deliverable aims at producing a final draft of the accident analysis handbook for review of all team participants from the various stakeholder groups (government, industry, academia). In addition, the deliverable may include results of current collaborations on scientific articles/reports with the industry's Center for Chemical Process Safety (CCPS) and the European Association for Safety and Reliability (ESReDA). The main deliverables will be the final version of the accident analysis handbook for publication, accompanied possibly by a training and follow-up workshop. In addition, the deliverable may include results of current collaborations on scientific articles/reports with the industry's Center for Chemical Process Safety (CCPS) and the European Association for Safety and Reliability (ESReDA). Elaboration and implementation of two further consequence models for: A) Pipelines and B) physical explosion of vessels. Implementation of the different land-use planning (LUP) methodologies available in the EU Member States, within the Industrial Safety Analysis (ISA) tool. Development of Computer Based Fluid dynamic models (CFD) to provide a detailed calculation of a cloud dispersion into the atmosphere, which results as a consequence of an industrial accident involving a flammable or toxic substance release. In collaboration with EU Seveso inspectors produce at least 2 technical briefs (CICs) on inspection good practice/risk management topics for inspectors of EU chemical processing sites for stakeholders in EU and implement pilot programme of new knowledge management strategy to increase visibility, accessibility, usability for inspectorates (online structure, design,translation, etc.) In collaboration with EU Seveso inspectors, strategy development/ production of technical briefs (CICs) on inspection good practice/risk management topics for inspectors of chemical processing sites for stakeholders in EU and globally. Task 1. Continuing implementation of knowledge management strategy to increase visibility, accessibility, usability for inspectorates (online structure, design,translation, etc.) Task 2. Production of at least 2 additional new briefs A summary of JRC scientific and training events in 2018, including bilateral exchanges or training, e.g., on the on the JRC ADAM risk analysis tool, chemical accident reporting and contribution/leadership roles supporting UNEP, UNECE, OECD and other partners. MAHB interfaces/ contributions to the Disaster Risk Knowledge Management Centre (KMC) and other initiatives (e.g., Big Data) including report contributions, meetings, review and comment on documents, etc. Ongoing review of MAHB Knowledge Management Strategy (implementation is embedded in other deliverables). Deliverable will be a summary report of contributions and current status of MAHB Knowledge Management Strategy Cross-sectoral (chemical, energy, transport, industrial, biological, natural, radiological, etc.) accident/risk information knowledge sets - Development of a data mining tool prototype (taking stock of JRC know-how) focused on collection and extraction of information from selected internal and external sources with a view to curate these in a systematic manner. Initiate dialogue with JRC actors that may be interested in creating a community of practice on disaster risk analysis and lessons learning with a view to building a knowledgebase in this area. Cross-sectoral (chemical, energy, transport, industrial, biological, natural, radiological, etc.) accident/risk information knowledge sets - Further development of data mining tool prototype to analyse and visualise search results in a smart manner, taking stock of user needs. Beta-testing and further improvement of tool for further use in improving existing and designing future MAHB products and services (based in feedback from MINERVA Communities of Practice). Further development of Data Mining Tool prototype to extract previously unknown, interesting patterns, investigating cluster analysis, to be used in Machine Learning within MAHB's MINERVA web platform A summary of JRC scientific and training events in 2018, including bilateral exchanges or training, e.g., on the on the JRC ADAM risk analysis tool, chemical accident reporting and contribution/leadership roles supporting UNEP, UNECE, OECD and other partners. The deliverable will include a joint seminar on lessons learned for emergency response with the OECD Nuclear Energy Agency. The deliverable will include a joint seminar on chemical accident risk management in industrial parks organised with the Chinese Ministry of Environment.	30/06/2018 15/12/2018 28/06/2019 26/06/2020 20/12/2019 15/12/2018 15/12/2020 21/12/2018 15/12/2020 15/12/2018 15/06/2019 30/11/2018 29/11/2019 15/12/2020 20/12/2019	JRC technical reports JRC technical reports JRC technical reports JRC technical reports Scientific information systems and databases Scientific information systems and databases Scientific information systems and databases JRC technical reports JRC technical reports JRC technical reports Project management related documents/reports identified as outputs of the JRC Work Programme Scientific information systems and databases Scientific information systems and databases Scientific information systems and databases JRC technical reports	
4821 - RESEAD JRC.E.2	4944 - UIS3 Urban information and analysis to help plan and target humanitarian and recovery interventions	The Syria crisis is a profoundly urban crisis: damage, destruction and displacement are concentrated in major urban centres and cities. UN-Habitat and the JRC have been analysing these developments jointly to support humanitarian and development actors to respond more effectively to this complicated and dynamic urban reality. The Phase III projects aims for a continuation of the urban information and analysis in Syria in order to better plan, target and monitor humanitarian and recovery interventions, while extending the number of cities to 75 and to link better with operational planning such as the Humanitarian Planning Cycle, and, when conditions allow, to contribute to a Post Conflict Needs Assessments (PCNA) for reconstruction.	JRC.E.1 Stamatia HALKIA	9.1.1.a	NEAR	NEAR	Arnaud BORCHARD	DEVCO ECHO FPI	UN HABITAT - United Nations, Human Settlement Programme (UN HABITAT) WB - World Bank	01/01/2017 31/12/2018	CON-AA						
213 - TMA CC JRC.I.3	5023 - EMM@EEAS V EMM@EEAS V	Support, maintain and update the EMM Installation for EEAS. Provide a mobile application for various devices. This installation has an increasing number of users within EEAS and will serve the Situation room as well as the OSINT community.	JRC.I.3 Marco VERILE	9.1.1.a	EEAS	EEAS	F Kerloch	HOME		01/01/2018 31/12/2018	CON-AA	502301	EEAS Media Monitoring	Improved media monitoring and analysis tools for a better informed and aware European External Action Service (EEAS) assisting it to provide the Union with the necessary impetus for the external dimension of EU policy, especially crisis management, and to define the general political directions and priorities thereof.	31/12/2018	Technical systems	
541 - SEED JRC.E.1	5096 - JRCforERCC2017 Enhancing the monitoring, early warning and analytical capacities of the ERCC	The AA aims to implement the requirements of articles (9), (8.c), and (21.f) of the Decision No 1313/2013/EU of the Council and the European Parliament on a Union Civil Protection Mechanism. It will be a cornerstone of DG ECHO's strategy with regard to weather driven natural disasters in Europe and globally.	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	ECHO	Juha AUVINEN	GROW	Civ Protection EU - Civil Protection Services in Member States GEO - The Group on Earth Observations UN ISDR - United Nations	01/06/2017 31/12/2018	CON-AA	201801	Final report on JRC support to ERCC	Under this AA the JRC will support DG ECHO and the ERCC by maintaining the JRC disaster monitoring and warning systems and the ERCC Portal, providing analytical and cartographic services for monitoring and reporting emergencies, improving its monitoring and early warning systems with regard to floods, droughts and forest fires. This includes scientific and analytical support, adaptation of the various JRC monitoring systems to be included in the GDACS platform.	31/12/2018	JRC technical reports	
222 - DRMKC JRC.E.1	5100 - DFID2017 DFID INFORM 2017	This contract gives continuity to the contract 33499. UKDFID supports JRC to maximise exploitation and use of Humanitarian Risk Index (INFORM) developed by JRC, ECHO & Int. partners amongst humanitarian and development aid communities globally. JRC will continuously improve & maintain INFORM web-based platform through which INFORM analyses & data are disseminated and communication is facilitated amongst its partner; JRC will collaborate to the organization of INFORM workshops; JRC will develop communication strategy & manage communication with stakeholders & public relations.	JRC.E.1 Montserrat MARIN FERRER	9.1.1.a	ECHO	n/a	Ian Clark	DEVCO	- United Nations Office at Vienna, The Security and Safety Section, 24 hour emergency service (IAEA) FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) IASC - UN Inter-Agency Standing Committee UN HABITAT - United Nations, Human Settlement Programme (UN HABITAT) UN OCHA - United Nations, Office for the coordination of Humanitarian Affairs	22/09/2017 21/09/2020	CON-TW	1 2 4	Development of Subnational INFORM for non-EU Interim report: support, maintenance, validation Final Report	To allow interoperability between data at subnational level. The lack of standard codification for administrative units at subnational level is a recognized issue by the international community for exchanging data at subnational level. The project is to define guidance, platform and tools for converting tabular data associated to administrative (or operational) subnational units in a grid standardized format for non-EU countries. JRC has developed a system for supporting the creation, calculation and validation of GNA/FCA. The system supports visual analytics of results, as well as a validation workflow to guarantee quality results. JRC adapts the system continuously to the needs of the INFORM project, including support for subnational data recording and seasonal variation. This includes: customization of web-based system, data management, management of user access and training. A final report will be prepared summarizing all the improvements introduced in the INFORM web-platform, the technical support provided, training sessions organized, and outcomes from the Annual INFORM meeting.	20/12/2019 20/12/2018 15/09/2020	Technical systems Technical systems JRC technical reports	
		The selected cross-cutting activities are: Security & defence (S&D); Space; Data, Information & Knowledge Management (KM); and Horizon scanning (HS). On S&D, emerging area of potentially great relevance to the EC, JRC's role could be related to civil-military/dual-use interactions and defence, given its existing expertise in civil security. The coordination of Directorate E's activities on S&D, the definition of JRC strategic paths and the support	JRC.E.7					CNECT DEVCO					1	Space & security landscape study	Study on the intersection of space and security (use of space for security, and security of space-related infrastructure). Collaborate with Units E1, E2, E3, E6; in JRC with units D.6, B.6, Dir. A and other Directorates; in COM with DG GROW, DG HOME, DG ECHO, etc.; EEAS, ESA.	31/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
6485 - KM4SSM JRC.E.7	5843 - C-CCA Coordinating cross-cutting activities	to the JRC Task Force on S&D will be done by E7 through this WPK - see document "Security and defence - JRC strategic research approach". This includes also support to DG GROW on what R&D topics of defence relevance have already been covered by recent H2020 civil security research; a survey of that for the benefit of the EU-funded defence research planners in COM and MS; and furthermore, a review on how JRC's existing expertise in civil security could be used for a future role in defence research and policy support. On space, the Unit will lead together with Unit D.6 the implementation of a JRC-wide space strategy to better coordinate all JRC space-related work, in alignment with the EU space strategy, EU security and safety.	Herman VAN WIMERSMA GREIDANUS	9.1.1.a	GROW	JRC	n/a	EEAS HOME MARE MOVE	MS EU - Member states EU	01/01/2018 31/12/2018	INS-RS	3	State of the art of EU-funded civil security research report	Report on the JRC expertise and on the state of the art of EU-funded civil security research, that have relevance to potential future EU defence research. Collaborations: in Directorate E with all KP Units, in JRC with all Directorates; in COM with DG HOME, DG GROW, DG CNECT, DG DEVCO, DG ECHO, DG MARE, DG MOVE, DG TRADE, DG TAXUD.	31/12/2018	JRC technical reports
												4	Horizon scanning results on space, security and migration	The report will include the results on the activities of horizon scanning in the fields covered by Directorate E. Collaborations: in Directorate E with all KP Units; in the JRC with Unit I.2.	31/12/2018	JRC technical reports
6485 - KM4SSM JRC.E.7	5863 - S-JRC-P Support to JRC priorities	The JRC priorities selected for support are: Cybersecurity, Hybrid threats, Migration, and Disaster risk management. The first three are quite new. In 2017 a landscape study on cybersecurity was performed. The study presents the situation at European level, in some key Member States, and at international level, in the United States, considering global initiatives, main players, standards and certification, national strategies, legislation and rules. Attention is also devoted to strategic partnerships and to stakeholders worldwide. In 2018 this will be extended in depth and broadened, especially with a view to hybrid threats.	JRC.E.7 Encarnacion LUQUE PEREZ	9.1.1.a	CNECT	JRC	n/a	DEVCO ECHO EEAS GROW HOME	MS EU - Member states EU	01/01/2018 31/12/2018	INS-RS	1	Cybersecurity landscape study with attention to hybrid threats	Study on the topic of cybersecurity to deepen the analysis already done in 2017 on a topic selected with the experts.Groundwork for potential cybersecurity KC. Collaboration: E3, E2, policy DGs, e.g. DG CNECT. Collaboration with e.g. G10 (related issues on nuclear safety and security), C7 is envisaged.	31/12/2018	JRC technical reports
222 - DRMKC JRC.E.1	6447 - DRM 2017-2019 Scientific Support to Disaster Risk Management Actions - DRM 2017 II	The purpose of this Administrative Arrangement is to provide scientific support to DG ECHO in the area of disaster risk management and measurement, in particular the development of a risk and a crisis severity index, carrying out risk assessments and risk management capability assessments, and implementation of the Sendai Framework. In addition, the JRC will represent the Commission in a technical capacity in related international working groups in agreement with DG ECHO.	JRC.E.1 Montserrat MARIN FERRER	9.1.1.a	ECHO	ECHO	n/a		Civ Protection EU - Civil Protection Services in Member States	18/05/2017 17/05/2019	CON-AA	20181	Interim reports	A series of interim reports will be produced to summarize the status of the implementation of the AA under which DG ECHO requests JRC to continue scientific and technical support in DRM areas and to complement the work on AA 'Scientific Support to Disaster Risk Management Actions - Loss data accounting (DRM 2017- FloodCat)', which foresees the technology transfer of an IT system to facilitate the structured and systematic collection and analysis of disaster damage and loss data in the field of Flood within a maximum of 3 EUCPM participant countries.	31/05/2018	Science-for-policy reports
												20191	Final report	The final report will be produced to summarize all the reports and work delivered under this AA.	17/05/2019	JRC technical reports
												20192	Interim Reports year 2	A series of agreed reports will be delivered including the work on National Risk Assessment, National Capability Assessment, Loss Data collection roadmap, and INFORM studies.	17/05/2019	Science-for-policy reports
213 - TMA CC JRC.I.3	6583 - EMM@EEAS VI EMM@EEAS VI	Support, maintain and update the EMM Installation for EEAS. Provide a mobile application for various devices. This installation has an increasing number of users within EEAS and will serve the Situation room as well as the OSINT community	JRC.I.3 Charles MACMILLAN	9.1.1.a	EEAS	EEAS	n/a	HOME		01/01/2019 31/12/2019	CON-AA	658301	EEAS Media Monitoring	Improved media monitoring and analysis tools for a better informed and aware European External Action Service (EEAS) assisting it to provide the Union with the necessary impetus for the external dimension of EU policy, especially crisis management, and to define the general political directions and priorities thereof.	31/12/2019	Technical systems
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	6803 - IRESIST+ Innovative Seismic and Energy Retrofitting of the Existing Building Stock	The IRESIST+ project contributes to the Exploratory Research (ER) Programme. It aims to develop innovative techniques integrating advanced materials for the simultaneous seismic and energy retrofitting of the European building stock. Upgrading the existing EU buildings is becoming progressively more important due to: (1) their poor seismic performance during recent earthquakes (i.e. Italy, Greece) that have resulted in significant economic losses, severe injuries and loss of human lives; and (2) their low energy performance which increases significantly their energy consumption (buildings are responsible for 40% of EU energy consumption). Since replacing the existing buildings	JRC.E.4 Dionysios BOURNAS	9.1.1.a	JRC	JRC	n/a	ENER GROW		01/01/2018 31/12/2019	INS-ER	680301	Final technical report	The Final technical report will summarise the scientific results of the project and provide a summary of the scientific papers originating from the project. A mid-term technical report will be produced at the end of year 1.	13/12/2019	JRC technical reports
541 - SEED JRC.E.1	6985 - JRCforERCC2018 Enhancing the monitoring, early warning and analytical capacities of the ERCC	The AA aims to implement the requirements of articles (9), (8.c), and (21.f) of the Decision No 1313/2013/EU of the Council and the European Parliament on a Union Civil Protection Mechanism. It will be a cornerstone of DG ECHO's strategy with regard to weather driven natural disasters in Europe and globally. Support ECHO in implementing its new Emergency Response and Coordination (ERCC) by: 1. maintenance of JRC disaster monitoring and warning systems and the ERCC Portal and 2. providing analytical and cartographic services for monitoring and reporting emergencies, regular provision of monitoring and early warning information regarding floods, droughts and forest fires as well as analytical and scientific assessments before or during those disastrous events to the ERCC. Therefore, the work carried out under this AA directly supports DG ECHO in general and the ERCC in particular in its function as facilitator of the coordination of the EU's civilian disaster response. Furthermore, it enables the ERCC to shift from an information sharing- and emergency response mode and to a more proactive role. This role contains planning-, monitoring-, preparation, operational	JRC.E.1 Alessandro ANNUNZIATO	9.1.1.a	ECHO	ECHO	n/a		Civ Protection EU - Civil Protection Services in Member States GEO - The Group on Earth Observations UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UN OCHA - United Nations, Office for the coordination of Humanitarian Affairs	01/10/2018 30/03/2020	CON-AA	6985001	final report	final report	15/03/2019	Technical systems
9.1.1.b resilient societies - apply the resilience knowledge and tools to understand the level of resilience of European societies. Help to develop new measures to make societies more resilient to external long-term crisis and conflicts. Support defence operations to improve resilience in Europe and beyond;																
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	2107 - RESURBAN Resilience of the urban built environment to natural and induced hazards	Increased resilience is an objective of the European strategy for disaster management. Also, the protection and refurbishment of urban areas deserves particular attention, owing to their potential for economic growth and energy efficiency in the housing sector, as well as because of their vulnerability to natural disasters. In the global context, the Sendai Framework aims to prevent new and substantially reduce existing disaster risk and losses through, among other measures, the reduction of exposure and vulnerability. RESURBAN deals with the resilience of the buildings in urban areas of the EU, with focus on regions of moderate-to-high seismicity. Physical damage is evaluated as the convolution of seismic hazard and physical vulnerability of buildings, established on the basis of state-of-the-art probabilistic methods for	JRC.E.4 Georgios TSIONIS	9.1.1.b	ECHO	JRC	Hans DAS	ENER ENV GROW REGIO	Civ Protection EU - Civil Protection Services in Member States OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2015 31/12/2019	INS-RS	10	Improved resilience of existing buildings	Impact analysis addressing safety and sustainability for improving the resilience of buildings at EU level. The work will analyse the different options for the rehabilitation of buildings considering concurrent and non-concurrent interventions for seismic retrofit and upgrading for energy efficiency, as well as for no intervention and/or demolition and new reconstruction.	13/12/2019	Science-for-policy reports
												9	Seismic qualification and resilience of EU buildings	Seismic qualification and risk assessment at EU level considering current conditions (existing structures) and different scenarios for combinations of existing, retrofitted and new structures	14/12/2018	Science-for-policy reports
541 - SEED JRC.E.1	4000 - I-REACT Improving resilience for emergencies through Advanced Cyber Technologies	To provide an integrated real-time emergency system for flood and fires that protects citizens with effective information and targeted warnings, and that supports civil protections and responders throughout all stages of emergency events, ultimately reducing the social impact of floods and fires, both in terms of human as well as economic losses.	JRC.E.1 Peter SALAMON	9.1.1.b	ECHO	RTD	Juha Auvinen (DG ECHO)	ECHO	Civ Protection EU - Civil Protection Services in Member States WMO - World Meteorological Organization (WMO)	01/06/2016 31/05/2019	CON-IA	201901	Integrating social media in early warning systems	Improving disaster risk management through the integration of social media analysis into early warning systems. For this H2020 research project, EFAS will serve as a testbed for the integration of social media analysis into flood early warning system. The overall aim by connecting social media analysis and early warning systems is to improve disaster risk management.	29/05/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
222 - DRMKC JRC.E.1	6302 - DEVCO AA 2018-19 EU Aid Explorer for DEVCO 2018-19	EU Aid Explorer is a top priority for DEVCO as expressed in the bilateral meeting of the DGs on 24/02/2017. It is a web based corporate tool of the European Commission (https://euaidexplorer.ec.europa.eu). It has been developed with the purpose of sharing external assistance data amongst donors, beneficiaries and other stakeholders in the world. The tool is continuously being extended to add further functionality and data to meet the needs of the different stakeholders. The project focuses on aid transparency, accountability, aid effectiveness, coordination amongst donors, and fragmentation of aid. It is vital to note that improving transparency, information and accountability are core principles for the effective use of development finance.	JRC.E.7 Anjula GARG	9.1.1.b	DEVCO	DEVCO	n/a	ECHO FPI NEAR	MS EU - Member states EU	01/12/2018 31/05/2020	CON-AA	201901	final report	Report describing the implementation of the AA and its completed tasks. The tasks includes adding any new functionalities in EU Aid Explorer and/or tailoring existing ones as requested by DG DEVCO.	31/12/2018	JRC technical reports
9.1.1.c fight global, trans-regional and emerging threats - support activities contributing to stability and peace (including analysis, the provision of methods and tools, capacity-building and collaborating with international partners to monitor precious raw materials), ensure maritime security and counteract global and trans-regional threats, including climate change; develop early-warning systems and capacity-building activities.																
4821 - RESEAD JRC.E.2	286 - Science4Peace Geospatial (Statistics, Remote Sensing and Information) Technologies for Peace and Stability	Support to the Instrument contributing to Stability and Peace, the EU INT-CEN and its Operational Hybrid Fusion cell. Intends to provide common, evidence-based tools for DGs addressing Juncker priority #9 "EU as Global Actor". The work package focuses on three areas. (1) To further develop the Global Conflict Risk Index conflict risk (GCRI), to disseminate and promote its use by EEAS and related DGs (FPI, DEVCO, NEAR, as well as ECHO and HOME); The GCRI provides conflict risk data useful for (a) prioritization of conflict prevention activities (EEAS, FPI, NEAR), (b) addressing root causes of disaster risk (ECHO) and sustainable development (DEVCO), (c) root cause for migration (HOME) (2) To improve geospatial technology (remote sensing and GIS mapping) for analysis of open source information in EEAS INT-CEN (Global Atlas). (3) To contribute to the monitoring, certification and implementation of raw materials. Support EU Chairmanship of the Kimberley Process in 2018. Support Council Regulation (EC) 2368/2002 on the Kimberley Process Certification Scheme in the EU, including representation of the EU in the Working Group on Statistics and during in-field review missions. Science4Peace integrates expertise from three domains (remote sensing, statistics and geospatial technology) and applies it synergistically for conflict prevention, early warning and monitoring. First, the WPK advances the GCRI quantitative conflict risk model through data processing, statistical regression and composite indicator techniques, in collaboration with the international scientific community. Second, remote sensing methods are combined with geospatial analysis expertise to provide open source geospatial analysis products to EEAS INT-CEN and its Operational Hybrid Fusion cell, contributing to their situation awareness. Third, the WPK develops reference satellite-based methods for monitoring of responsible sourcing of minerals, expanding existing expertise on diamond mining. The institutional work is complemented with Administrative Arrangements to provide specific scientific and technological support to FPI and EEAS.	JRC.E.1 Stamatia HALKIA	9.1.1.c	FPI	JRC	Joris HEEREN	DEVCO ECHO HOME NEAR TRADE	EEAS - European External Action Service MS EU - Member states EU UN Kimb WG - UN Kimberley Process working Groups	02/01/2017 31/12/2019	INS-RS	201801	Conflict Resilience indicator	Study test and deliver a new indicator for the existing composite GCRI model. The purpose of the indicator would be to measure a country's resilience to armed conflict. The indicator would be structured and studied so as to permit a measurement of social conflict resilience.	15/12/2018	Scientific information systems and databases
												201802	Global Conflict Risk Index development	Further development of the GCRI model to ensure scientific robustness and elimination of any correlations in the data input, affecting possible bias in the output. Further elaboration of data input dimensions, for example in Food Security.	15/12/2018	Technical systems
												201803	Global Crisis Atlas thematic development	Methodological analysis on the definition and description of emerging threats to European interests based on border security, migration movements and natural resources mapping using the GCA resources; studying the correlation of the population and settlement characteristics to the location, characteristics, and type of armed conflict, as well as in relation to illicit diamond mining activities.	15/12/2018	JRC technical reports
												201804	Pilot use of the country-specific methodology	For forecasting illicit diamond pits by satellite imagery in selected countries, using advanced statistical methods, geomorphological indicators, geospatial/situational intelligence, and open news analysis.	15/12/2018	JRC technical reports
												201901	Geospatial Conflict Intelligence	"PEACE" platform development of a restricted access portal for the analysis of the combined resources from the Peace and Stability data repositories, in maps and statistical data (Global Crisis Atlas, Global Conflict Risk Index, Kimberley Process Data Reconciliation repositories, to forecast likelihood of armed conflict in a country, or to provide situation awareness during armed conflict, in a country.	15/12/2019	Technical systems
												201902	Benchmarking	Study of the PEACE portal in relation to other tools for the visualization of information for conflict prevention, conflict risk modelling, situational awareness, other types of conflict.	15/12/2019	JRC technical reports
												201903	Validation of GCRI methods and data	Scientific peer-reviewed articles in the area of GCRI methods and data.	15/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
213 - TMA CC JRC.I.3	1850 - AU CEWS AU CEWS	This a Follow up to AA 33265 and will further develop the African Union (AU) CAAS early warning conflict System.	JRC.I.3 Martin ATKINSON	9.1.1.c	DEVCO	JRC	FERNANDEZ SARABIA Isabel		01/03/2017 31/08/2018	INS-RS	1850201801	Software Services for Continental Early Warning	Deliver software based services to support the Continental Early Warning (CEWS) System of the African Union. The software is based on the EMM text mining technologies that will be customised specifically for CEWS and deliver products to the Continental Alerting and Analysis system being developed by E.1	31/08/2018	Technical systems	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
541 - SEED JRC.E.1	3801 - DROUGHTS Addressing current and future risks due to droughts and extreme temperatures in Europe and globally	The WP addresses important emerging socio-economic and environmental risks resulting from droughts and extreme temperatures (heat and cold waves) by developing a global observatory for monitoring, forecasting and early warning of such events. Besides detailed information on meteorological, hydrological and vegetation parameters, the observatory will include combined impact indicators for different sectors (e.g., agriculture, forestry, public water supply, energy production, inland water transport, ecosystems), tailor-made for decision makers in the Emergency Response Coordination Centre (ERCC) and other units of DG ECHO. This information is important for the evaluation of the severity of ongoing disasters and for timely decisions on the coordination of civil protection and aid interventions. In addition to the continuous monitoring, the JRC Team provides	JRC.E.1 Juergen VOGT	9.1.1.c	ECHO	JRC	Johannes Luchner, HoU, ECHO.BA.1, Ian Clark ECHO.A.3	CLIMA DEVCO ENV GROW NEAR REGIO	EEA - European Environment Agency GWP - Global Water Partnership NOAA - National Oceanic and Atmospheric Administration UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UNCCD - United Nations	01/01/2016 31/12/2020	INS-RS	201801	Global Drought and Temperature Observatory (GDO)	Further development of GDO. Improvement of software components, addition of new global data sets and indicators, as well as refining the forecasting, vulnerability, risk and impact assessments. Output includes an information system and database, reports and scientific publications.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201804	Ad-hoc support report to the EUSF and ERCC	Subject to requests from DG REGIO and DG ECHO, ad-hoc reports and maps on the severity and impacts of droughts and extreme temperatures in Europe and globally will be produced. This institutional deliverable is underpinning the AA's with ECHO NATHAZ3 and follow up AA.	31/12/2018	JRC contributions to policy documents
541 - SEED JRC.E.1	3806 - ANYWHERE H2020 Enhancing emergency management and response to extreme weather and climate events	ANYWHERE aims to develop a pan-European multi-hazard platform of products and services to enhance the emergency management and response capabilities of the regional and local European authorities, public and private operators of critical infrastructures and networks, and affected citizens in cases of emergencies induced by extreme and high-impact weather and climate events. This project contributes directly to the development of multi-hazard and risk platform.	JRC.E.1 Peter SALAMON	9.1.1.c	ECHO	RTD	Juha Auvinen (DG ECHO)	CLIMA GROW	Civ Protection EU - Civil Protection Services in Member States WMO - World Meteorological Organization (WMO)	01/06/2016 31/08/2019	CON-IA	201701	Data sets from JRC early warning systems 2017	For this H2020 research project the JRC will deliver data produced by the JRC early warning systems (EFAS, EDO, EFFIS and GDACS) to the project partners.	29/08/2019	Project management related documents/reports identified as outputs of the JRC Work Programme
541 - SEED JRC.E.1	4843 - WILDFIRES Early warning, assessment and monitoring of wildfire impacts in Europe and globally	The assessment and management of wildfire risk is a major concern in Europe and many other regions of the globe. Wildfires, including forest fires, are a major cause of deforestation globally and the cause large economic and environmental impacts and human casualties in Europe and globally. The WPK Wildfires builds on the work on the European Forest Fire Information System (EFFIS) and the Global Wildfire Information System (GWIS) in the context of the EU Regulation Copernicus and the Group on Earth Observations (GEO) work program 2017-2020.	JRC.E.1 Jesus SAN-MIGUEL-AYANZ	9.1.1.c	ECHO	JRC	Juha AUVINEN	CLIMA DEVCO ENV GROW REGIO	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) Fo Fi Serv - Forest and forest fire services in the MS UN ECE - UNITED NATIONS	01/01/2017 31/12/2019	INS-RS	20191231	Global wildfire risk analysis	Contribution to the analysis of global wildfire risk through data and information in the European Forest Fire Information System (EFFIS) and the Global Wildfire Information System (GWIS)	15/12/2019	JRC technical reports
												4843201802	Global analysis of wildfire regimes and impacts	Contribution to the analysis of wildfire regimes and impacts in Europe and globally through the European Forest Fire Information System (EFFIS) and the Global Wildfire Information System (GWIS).	13/12/2018	JRC technical reports
222 - DRMKC JRC.E.1	4888 - ECHO-MAHB 2017-2018 Seveso Capacity Building in EU Neighbour Countries 2017-2019	This project is part of the 2017-2018 civil protection policy and aims to strengthen risk governance and chemical accident prevention and preparedness in enlargement and European Neighbourhood Policy countries in support of Seveso Directive implementation. 2016-2017 focuses on developing bilateral collaborations, organisation of training activities, and furthering development of online analysis tools to support policy decision making and implementation. This work is linked to Work Package 984 NATECH and also supports WPK 437. Please see note to the file with justification for request for additional staff resources in 2017-2018.	JRC.E.2 Maureen WOOD	9.1.1.c	ECHO	ECHO	Bart MATERNE	DEVCO ENV NEAR	CC EU - Candidate Countries EU MS EU - Member states EU OECD - Organisation for Economic Co-operation and Development (OECD) UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNEP - United Nations Environment Programme (UNEP)	02/10/2017 31/03/2019	CON-AA	1	Collaboration and Technical Exchange	A Year 4 summary report of collaboration and technical exchange activities supporting Neighbourhood countries in Seveso implementation.	31/03/2019	JRC technical reports
												10	Launching of the ADAM Tool Online	This deliverable consists of the launching of the ADAM tool for use by competent authorities in late 2018 and an update of one of the models. The timing of the launch is dependent on reaching a positive outcome from the Interservice Consultation and subsequent Decision of the Commission with respect to intellectual property rights and copyright permissions.	31/03/2019	Scientific information systems and databases
												2	ADAM PreRollout Testing/Verification 2017-2018	All functionalities of ADAM will be tested (GUI and dependences). The outcome of all calculus moduli will be verified on a list of reference accident scenarios by using ADAM Desktop as the validation tool. The multithread input and calculation to allow different users to use the ADAM platform at the same time will be also tested via simulation of parallel usage	31/03/2018	Scientific information systems and databases
												3	ADAM - Atmospheric stability calculation 2017-2018	Inclusion of a novel procedure to address the calculus of atmospheric stability by using the Monin-Obukhov length instead of Pasquill stability class.	31/05/2018	Scientific information systems and databases
												5	Integration of ADAM with Rapid-N 2017-2018	Adaptation of ADAM calculus libraries to be implemented in Rapid-N and creation of input/output data structures. This will allow the integration of ADAM into Rapid-N in 2019 and 2020 as well as systems of Neighbourhood countries.	31/03/2019	Scientific information systems and databases
												6	Regional RAPID-N risk assessment and mapping case	Application of Rapid-N to a selected industry in a EU Neighbourhood country and mapping of the associated risk using the JRC's RAPID-N tool. Depending on the target country's needs, the study will either be an earthquake or a flood-related Natech risk assessment. Application of ADAM to generate a database containing endpoint damage distances for typical scenario types and different dangerous substances. This database will be used to generate shortcut methods to be incorporated in any external risk management/emergency planning tool to assess the accident consequences. This will facilitate the integration of ADAM into Rapid-N in 2019 and 2020 as well as potentially systems of Neighbourhood countries. The deliverable is a map of Natech risk (flood or earthquake) a selected industry in a EU Neighbourhood country and accompanying report summarising findings and results.	28/09/2018	Scientific information systems and databases
												8	Seveso Alignment Index	This index will form the fourth index of the Seveso Capacity Assessment Tool, that will be implemented in a future stage as an interactive online application by which countries can calculate their performance against the 4 capacity building measures to measure progress	31/03/2019	Scientific information systems and databases
4821 - RESEAD JRC.E.2	4951 - GCRI V Global Conflict Risk Index - Phase V	Contributing to the Juncker priority "EU as Stronger Global Actor", the JRC provides evidence-based conflict risk assessments to the Commission, EEAS and Member States. The GCRI conflict model was developed in 2014 (AA 22265) and improved in 2015 (AA 33670 - AA 33816). The results were received positively by EEAS and Member States, and EEAS expressed strong interest to renew AA to continue the development and improvement of the GCRI model and integrate it fully in the risk assessment methods underlying the Peace and Stability work. The GCRI is also an essential part of the INFORM humanitarian risk index, used widely in UN agencies, by several Commission services and several Member States. Improved conflict assessment is one of the key elements of continued interest in EEAS, ECHO, DEVCO, but also NEAR and with international partners.	JRC.E.1 Stamatia HALKIA	9.1.1.c	FPI	FPI	Oliver NETTE	DEVCO ECHO HOME NEAR	EEAS - European External Action Service	15/12/2017 31/10/2018	CON-AA	1	Final report	The final report of the AA will describe the work performed according to the technical annex	31/10/2018	Project management related documents/reports identified as outputs of the JRC Work Programme
222 - DRMKC JRC.E.1	4952 - KP VII Scientific/Technical Facility in support to Kimberley Process	The purpose of this AA between the FPI and JRC is the continuation of the support to the EU's implementation of the Kimberley Process Certificate Scheme's data and to the monitoring of the KPSCS in support of the Kimberley Process Workgroup on Monitoring, till the end 2017 chaired by the EU. Since 2005, the JRC has provide support to the External Action Service (EEAS, formerly RELEX) and FPI on monitoring 'conflict diamonds' in the framework of the Kimberley Process. The Kimberley Process is an international respected scheme for regulating the trade in rough diamonds. The JRC developed a database application to manage the EU's KP Certification Scheme data collected from the seven EU competent authorities, and provides satellite-based analysis directly feeding in the KP process. The KP plays an important role in the rehabilitation of many post-war countries as rough diamonds contribute a substantial part of the economic means and/or forms a risk for the peace and stability of those countries. Every year, the outcomes of the annual KP Plenary, in which the JRC supports the FPI, are a subject on the agenda of the UN's General Assembly. The EU will chair the KP	JRC.E.1 Winfried OTTOY	9.1.1.c	FPI	FPI	Joris HEEREN	TRADE		11/10/2017 10/11/2018	CON-AA	201801	Final report on the output of the KPSCS certificate management and monitoring (satellite, open news sources, statistics)	Final report on the work carried out in AA 34390	31/10/2018	JRC contributions to policy documents
4821 - RESEAD JRC.E.2	5068 - S2CM2017 Scientific/Technical Facility in support to Crisis Preparedness/Response	Support to Juncker priorities "EU as Global Actor" and specifically the Instrument contributing to Stability and Peace (IcSP), one of the key external assistance instruments that enable the EU to take a lead in helping to prevent and respond to actual or emerging crises around the world. To support the IcSP, JRC has developed the Global Crisis Atlas, which is an IT based platform for map products on crisis preparedness, response and coordination. The Global Atlas supports timely information exchange and enhances real-time common situational awareness during major emergencies or crises. Global Atlas maps are based the collection, analysis and dissemination of satellite imagery and geographical information as well as on the analysis of open source data. Due to the confidential nature of some of the analysis products, the JRC is uniquely placed to support EEAS and FPI.	JRC.E.1 Stamatia HALKIA	9.1.1.c	FPI	FPI	Oliver NETTE	DEVCO NEAR	EEAS - European External Action Service	15/12/2017 31/10/2018	CON-AA	1	Final report	The overall aim of this project is to provide crisis/security monitoring and mapping products integrated in the Global Crisis Atlas, in order to provide the context to understand, monitor, anticipate, prevent and respond to situations of crisis or emerging crisis. The final report will describe the individual deliverables in the contract, including: 1. Map products and atlases; maps are made available through the Global Crisis Atlas 2. Situation and impact assessments. 3. Datasets	01/10/2018	JRC technical reports
4821 - RESEAD JRC.E.2	6301 - COOL 2018 COOL Application for EEAS (2018)	JRC has developed an application for the Consular Crisis Management Division of the European External Action Service, named CoOL (Consular OnLine) where Member States and a few third States (e.g. Switzerland, Norway, the US, Canada, Australia) exchange information and cooperate during normal times and, above all, during major crises involving several countries. This activity is related to the maintenance and the development of the application. Improving cooperation and coordination of member states during a crisis contributes to the worth of the DRMKC.	JRC.E.1 Brian DOHERTY	9.1.1.c	EEAS	EEAS	n/a			01/01/2018 31/12/2018	CON-AA	CoOLFinalR report	Final Report	Final report of the CoOL project	31/12/2018	Technical systems
9.1.2. Global nuclear safety and security																
9.1.2.a. provide technical assistance and scientific support to EU partner countries and international institutions to help implement the Instrument for Nuclear Safety Cooperation, the Commission support programme to the IAEA and the Instrument contributing to Stability and Peace, and participate in related international working groups;																
268 - K-NUSP JRC.G.10	3303 - TAREG 01/16 Support to International Nuclear Safety Policy (INSC AP2016)	This Work Package contributes to the overall objective to promote an effective nuclear safety culture and implementation of the highest nuclear safety, safeguards and radiation protection standards, continuous improvement of nuclear safety and responsible nuclear and radioactive wastes management. The Work Package provides the direct technical and scientific support required by DG DEVCO for the programming, preparation, contracting, monitoring and evaluation of the projects of the Instrument for Nuclear Safety Cooperation (INSC), which provides assistance for improving nuclear safety and nuclear safeguards in countries outside the EU. Within the WPK, technical documents are prepared, including terms of reference, technical specifications contract notice, support in tendering evaluations, etc. The activity includes carrying out expert missions to Brussels, but also to beneficiary countries outside the European Union. The main methodology is the use of expertise and the skill of systematic assessment. DG DEVCO is responsible for the management of the EC Instruments but does not have all necessary technical and scientific expertise which is provided by JRC.	JRC.G.1.4 YNTÉ STOCKMANN	9.1.2.a	DEVCO	DEVCO	A van der Meer	EEAS ENER	EEAS - European External Action Service	01/01/2017 31/01/2020	CON-AA	201804TIPI NS	TIPINS 2018	The data contains project related information which is supplied by DG DEVCO and DG NEAR combined with technical assessment of project results and lessons learned, determined by JRC experts, which can be used for nuclear safety improvement. The deliverable addresses the activities	31/12/2018	Scientific information systems and databases
												201806Sci ence	Scientific outputs	Scientific publication(s) in the field of the WPK	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201904TIPI NS	TIPINS 2019	The data contains project related information which is supplied by DG DEVCO and DG NEAR combined with technical assessment of project results and lessons learned, determined by JRC experts, which can be used for nuclear safety improvement. The deliverable addresses the activities carried out during the year 2019 in the scope of the information system as well as the foreseen future activities.	30/10/2019	Scientific information systems and databases

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7785 - MEDAKNOW JRC.G.II.7	3510 - SUPPIO_2 International Partnership in Nuclear Security	The JRC has been a leader in the nuclear forensics arena from the beginning. Its involvement in international initiatives (such as Nuclear Forensics International Technical Working Group (ITWG) or Global Initiative to Combat Nuclear Terrorism (GICNT)) and its contributions to the work of international organizations (such as IAEA) underline on the one hand the JRC's prominent position and on the other hand enable influencing strategic international developments and decisions. Key objectives of these partnerships are: <ul style="list-style-type: none"> •Strengthen the international nuclear forensics community •International coordination of capacity building activities in third countries •Improve response capabilities through continued exchange of experience •Advance nuclear forensic science through joint research activities •Knowledge sharing through international workshops and exercises at technical and at policy level •Improve the quality of nuclear forensic analysis and interpretation capabilities through inter-comparison exercises Based on its long standing involvement in nuclear forensics, its first-hand experience in case work and its strong research activities, the JRC takes a prominent position within the international nuclear forensics community. JRC will continue co-chairing the Nuclear Forensics International Technical Working Group (ITWG) and will contribute to activities of the IAEA and GICNT. Maintaining the strong bi-lateral partnerships with US DOE NNSA, JAEA, CEA or IAEA will contribute to further push R&D activities and efficiently use available resources.	JRC.G.II.6 Klaus MAYER	9.1.2.a	DEVCO	JRC	Eddie Maier	HOME	- KFKI Institute for isotopes CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives DSTA SG - Defence Science and Technology Agency, Singapore EUROPOL - EUROPOL IAEA - International Atomic Energy Agency (IAEA) IAEC - Israel Atomic Energy Commission JAEA - Japan Atomic Energy Agency US DoE - US Department of Energy (DOE)	01/01/2016 31/12/2018	INS-RS					
277 - NUSEC JRC.G.II.6	3627 - RECU ITDB Reporting Culture	The ITDB offers valuable technical information on incidents of illicit trafficking and other unauthorised activities involving nuclear and other radioactive material. This information is provided to the ITDB by the national points of contact. Difference in reporting culture have been observed, which may lead to unbalanced representation of the information contained in the database. Therefore, it is important that all POCs are aware of the full scope of the ITDB as well as about their duties. In order to enhance this, the training of new POCs and re-training of long standing POCs is of utmost importance.	JRC.G.II.6 Maria WALLENUS	9.1.2.a	HOME	HOME	Wojtas Wiktor		IAEA - International Atomic Energy Agency (IAEA)	15/12/2016 14/06/2018	CON-AA	3627201801	Final report of the project on ITDB Reporting Culture	The report shall describe the work accomplished and the results obtained when carrying out the project	30/04/2018	JRC technical reports
7785 - MEDAKNOW JRC.G.II.7	3682 - SFG in China Safeguards in China and world-wide ESARDA courses	Support of EC to Chinese authorities for the implementation of nuclear safeguards. The Beneficiary is the Chinese Ministry of Commerce (MOFCOM) which oversees the cooperation activities on behalf of the Chinese government and the End-User is the Chinese Atomic Energy Agency. The main tasks will consist of the transfer of safeguards methodologies and training (mainly focusing on tank calibration and volume monitoring), the setting-up of training facilities, the networking with ESARDA by the participation of Chinese trainees and lecturers to a future ESARDA course session and the dissemination of the course in China and the participation to ESARDA symposium. The AA includes the organization of ESARDA courses world-wide minimum 6, maximum 10.	JRC.G.II.7 Patrice RICHIR	9.1.2.a	DEVCO	DEVCO	CHRISTINA THORMAEHLEN			29/08/2016 31/07/2020	CON-AA					
436 - CBRNESEC JRC.A.7	6161 - CBRN CoE 3 Chemical Biological Radiological and Nuclear Centres of Excellence	The Centres of Excellence initiative was launched in 2010 and enjoys currently a considerable state of maturity thanks to the contribution of all the implementation partner including, from the start, a strong JRC support to DG DEVCO in the implementation of the EU CBRN Risk Mitigation Centres of Excellence Initiative. The JRC will continue the successful activities of support to Partner Countries through the provision of scientific and technical inputs, support to the analysis of CBRN needs in partner countries and regions and development of National Action Plans, contribution to the preparation of terms of reference for selected projects, evaluation of negotiated tender proposals and	JRC.A.7 MARGARIDA GOULART DE MEDEIROS	9.1.2.a	DEVCO	DEVCO	n/a	GROW HOME MOVE TAXUD TRADE	EEAS - European External Action Service IAEA - International Atomic Energy Agency (IAEA) WHO - World Health Organization	01/01/2017 31/12/2018	CON-AA	201803	Support activities to the EU Export control outreach programme	The EU outreach programme on export control has been implemented through a series of projects started in 2006. The current phase is called EU Long Term Programme (LTP) on export control. The JRC is requested to review the implementation of the LTP and also provide DEVCO with a proposal for a strategy to further develop the current EU -Outreach Dual Use programme. The deliverables include technical reports, assessment of trade profiles, analysis of countries' capabilities, definition of terms of reference and evaluation of project implementation under the EU export control programme.	31/12/2018	JRC technical reports
9.1.2.b develop methods, technologies and standards to detect nuclear and radioactive materials outside regulatory control and to fight the illicit trafficking of such materials;																
436 - CBRNESEC JRC.A.7	622 - CB-THREATS Chemical & Biological Threats	The main reason for JRC doing this work is to build bridges between the EU MS CBRN Action Plan and the CBRN CoE Risk Mitigation initiative's activities. The JRC endeavours to foster capabilities in the field of chemical & biological threats at international level and within the EU. It provides scientific and technical support for harmonised implementation of chemical & biological (CB) threat security policies including the management of knowledge on current and emerging substances of interest. It also endeavours to enhance capabilities in CB risk mitigation by following up actions, decided and endorsed by the EU MS in their CBRN Action Plan and using those to build synergies with the CBRN CoE Risk Mitigation initiative's activities	JRC.E.7 Josephine MCCOURT	9.1.2.b	DEVCO	JRC	TRISTAN SIMONART	HOME	ECDC - European Centre for Disease Control EEAS - European External Action Service MIN Int Border - Ministries of Interiors or border control agencies OPCW - Organisation for the Prohibition of Chemical Weapons WHO - World Health Organization	01/01/2016 31/12/2018	INS-RS	3	Creation of e-courses	Using Dir E's Blackboard Learning Management System (LMS) create e-courses, specifically a NAQ to NAP e-course which will be used to fulfil various training needs, including EU CBRN Risk Mitigation CoE partner country i) for self-assessment; ii) as preparation for a face to face NAQ; iii) for updating NAQs. Train other units, within Dir E but also for other requesting units on how to get started with their e-course preparation.	17/09/2018	Training
277 - NUSEC JRC.G.II.6	631 - AGE Standards in support to Nuclear Forensics and Security	Nuclear forensics deals with consistency of information, coherence between materials or samples, conformity of findings with declared processes and comparison of external and internal data. The JRC is therefore putting effort into the development of new certified reference materials and the provision of conformity assessment tools, particularly for particle analysis, 'age-dating' of uranium and plutonium samples and for isotopic fingerprinting, which is of importance to both the safeguards & security communities, supporting the Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom safeguards, the International Atomic Energy Agency (IAEA), and the Nuclear Forensic International Technical Working Group (ITWG). The deliverables of this work package promote and demonstrate the "technical convergence" of nuclear safeguards and security.	JRC.G.2 Yetunde AREGBE	9.1.2.b	ENER	JRC	DGENER.E.1 (Euratom Safeguards); E. Mair, P Sorin (DEVCO)	DEVCO GROW HOME JRC	- URENCO NEDERLAND BV* - Seibersdorf laboratories - IAEA - BRITISH NUCLEAR GROUP SELLAFIELD LT AREVA NP - AREVA NP Main Company CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives CETAMA - Commission d'ETablissement des Méthodes d'Analyse du CEA (CETAMA) France FZJ - Forschungszentrum Jülich IAEA - International Atomic Energy Agency	08/01/2018 31/12/2018	INS-RS	1	New uranium particle CRM certification	Certification report of a new uranium particle CRM required for method validation in nuclear forensics and safeguards	30/06/2018	Reference Material
												2	NUSIMEP uranium particle and REIMEP Pu-age dating report	Report of an external quality control campaign for uranium particle analysis and for age-dating of nuclear material in nuclear forensics and nuclear security, supporting Council Decision 2012/212/CFSP	17/12/2018	Validated methods, Reference methods and measurements
												3	Scientific publication on CRMs for nuclear forensics and security	A publication on the development of new CRMs required for method validation in nuclear forensics and security	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
277 - NUSEC JRC.G.II.6	903 - NUFOR R&D Nuclear Forensics R&D	Understanding the correlations between measurable material properties and the history of the material is the key to nuclear forensics. Therefore underpinning research enabling method and signature development is of fundamental importance. In concrete terms, Nuclear Forensics R&D serves to improve the analyses of nuclear samples, identify new signature and develop new and faster methods. The investigated techniques will help in drawing scientifically-based conclusions in real incidents, provide validated methods for the stakeholders and offer novel possibilities for the relevant measurable signatures. Under the work package, the following activities will be carried out: <ul style="list-style-type: none"> •Development of micro-analytical technique for solid samples, using laser ablation mass spectrometric analysis of uranium-based materials. Development of novel method for small sample-size (less than 1 microgram) for U isotopic composition complementing earlier studies, when larger samples (bulks) were studied. Optimization of the methods and validation with standards. •Adaptation and testing of the laser ablation inlet system for the use with nuclearized mass spectrometers. The inlet will allow using of other mass spectrometers in-house and fully exploiting its capabilities. •Development of a Pu age dating reference material based on U IRMM-1000 experience. Share samples of the material with external laboratories for independent validation collecting their 	JRC.G.II.6 Zsolt VARGA	9.1.2.b	HOME	JRC	Wiktor Wojtas HOME A.1.002	DEVCO ENER	- University of California, Los Alamos National Laboratory CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives EEAS - European External Action Service EUROPOL - EUROPOL IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency LLNL - Lawrence Livermore National Laboratory STUK - Radiation and Nuclear Safety Authority	01/01/2014 31/12/2018	INS-RS	903201801	Scientific Publications on the determination of different nuclear forensic signatures and presentation at conferences on the R&D	Paper on novel or improved methodologies for determining characteristic parameters and several conference contributions on use of laser ablation and the developed Pu age dating material for nuclear forensics will underline the leading position of JRC in the area of nuclear forensics	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												903201802	Final Report on the analysis of uranium samples	Study on the propagation of nuclear forensic signatures at the front end of the nuclear fuel cycle. Samples originating from a Czech mining/milling facility will be provided by the IAEA	24/12/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
277 - NUSEC JRC.G.II.6	1370 - IFS MED – FSU – B07 Combating illicit trafficking of radioactive and nuclear materials (focus North Africa)	The project has been developed fully in line with the Strategy paper for the longer-term actions under the Instrument for Stability (IFS) and the corresponding Indicative programme for 2009-2011. The project will enhance the fight against illicit trafficking of nuclear and radioactive materials in Mediterranean Basin and FSU countries. The support will bring capacity building by deploying radiation detection equipment, providing sustainable training, and enhancing international collaboration	JRC.G.II.7 Kamel ABBAS	9.1.2.b	DEVCO	DEVCO	Head of Unit Devco.B.5	HOME	CNRP Morocco - Morocco National Centre for Radioprotection - Centre national de la radioprotection - Maroc Cust Algeria - Algerian Customs - Douanes algériennes Cust Belarus - State Customs Committee of the Republic of Belarus - Государственный таможенный комитет Республики Беларусь Cust Morocco - Moroccan Customs - Administration des Douanes et Impôts Indirects DGSN - Morocco General Office of National Security - Direction générale de la sûreté nationale du Maroc EEAS - European External Action Service IAEA - International Atomic Energy Agency (IAEA) PFA - Algerian Borders Police - Police des frontières algérienne (Direction Générale de la Sûreté Nationale) SBGC Belarus - State Border Guards Committee of the Republic of Belarus US DoE - US Department of Energy (DOE)	01/01/2010 30/06/2018	CON-AA						
277 - NUSEC JRC.G.II.6	1820 - ITRAP ITRAP+10 PHASE 2	The objective, based in the experience gained implementing the first phase, is: To strengthen the capacity of the EU Ms labs for testing of detection radiation equipment. To test Mobile detection equipment, based on revised testing procedures. To give feedback to standardisation organisations from experience gained through the implementation of ITRAP+10.	JRC.A.7 MARIANA GONÇALVES	9.1.2.b	HOME	HOME	Wiktor Wojtas, DG HOME A1	DEVCO TAXUD		17/12/2013 16/12/2018	CON-AA	171	WP2 : Intercomparison exercise -	Identifying EU national labs to be recognized in testing of equipment: Revision of the testing procedures and organisation of a round robin exercise. Reports on the procedures and on the intercomparison results.	16/12/2018	Validated methods, Reference methods and measurements	
												173	WP1 : Project Management deliverables - Final report	Deliverables of the WP1 Project Management are the Inception Report, the periodic Progress Reports (6-monthly) and the Final Report	16/12/2018	JRC technical reports	
												22	Intercomparison exercise	Identifying EU national labs to be recognized in testing of equipment: Revision of the testing procedures and organisation of a round robin exercise. Reports on the procedures and on the intercomparison results.	16/12/2018	Validated methods, Reference methods and measurements	
												23	Proposal for improvements to IEC standards	Based on experience and test results (from ITRAP+10 and WP 3883 DISNU) , proposals contributing to the development and revision of ISO/IEC standards for radiation detection and measurement equipment and methods used in nuclear safety, security and safeguards will be elaborated.	14/12/2018	JRC contributions to standards	
277 - NUSEC JRC.G.II.6	2215 - C-BORD Effective Container inspection at BORDER control points	The 19 members strong C-BORD EU consortium (see note) aim at the development and field testing of a toolkit for container inspection at borders and seaports which includes: advanced passive radiation monitors, active techniques (tagged neutrons and photofission), enhanced X-ray imagery, vapour analysis (sniffer) technology. Efficient inspection of bulk freight is critical to trade and to society as the criminal disruption of container trade can severely damage economies whilst endangering public health and safety. ISO freight containers are targets for smuggling, illegal immigration, trafficking of drugs and dangerous illicit substances, including nuclear material, chemical and biological warfare agents and radioactively contaminated goods. No single inspection technology can cope with these challenges: how to increase number of controlled containers without "overseeing" risky ones? The mission of C-BORD is a comprehensive cost-effective solution for the generalised inspection of container and large-volume freight in order to protect EU borders, coping with a large range of container inspection needs, e.g. large versus small ports, sea-border versus land-borders, and threats, including in particular SNM, explosives, illicit drugs, tobacco and stowaways. By optimising the container inspection chain, at equal throughput, C-BORD should allow to reduce the need for manual inspections while keeping the same probability of detection illicit or dangerous content. C-BORD will	JRC.G.II.7 Hamid TAGZIRIA	9.1.2.b	HOME	HOME	Wiktor Wojtas	TAXUD	- KFKI Institute for isotopes - UNIVERSITA DEGLI STUDI DI PADOVA - University of Manchester INFN - ISTITUTO NAZIONALE DI FISICA NUCLEARE CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives Cust Tax NL - Douane Informatiecentrum, Tax and Customs Administration, Customs Intelligence Centre, NL FGFAF - Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung E.V.	01/06/2015 30/11/2018	CON-IA	Reports	Report on the Results achieved and Public Workshop	Technical report on the results obtained during the current stages of C-BORD . Proceeding of the Final Public Workshop.	30/11/2018	JRC technical reports	
												WP4ofCBO RD	Rapidly re-locatable tagged neutron inspection system (RRTNIS)	WP4 includes the design phase, with special focus on the operator radiation hazard, as well as all sub-components procurement and testing, the full integration of the software and hardware components and the laboratory qualification of the RRTNIS prototype. The device shall be ready at M33. The fielding of the system and the operation support during the demonstrations are considered. The RRTNIS will be integrated at UNIPD with the exclusion of the neutron generator. CAEN and NCBJ will contribute to the integration. The prototype will be transferred to JRC Ispra where the neutron generator will be mounted. The test protocol with details of the simulants for explosives, chemical warfare agents and illicit materials as well as some pure element material available at JRC will be prepared. Survey of radiation hazard around the TNIS when in operation at 107 neutron/s (JRC authorization) will be performed to check the exclusion area defined at Task 4.2.	30/11/2018	JRC technical reports	
7785 - MEDAKNOW JRC.G.II.7	3660 - QUALINU Ensuring quality and building expertise in nuclear forensics	This activity aims at improving the response to nuclear security events, analytical and evaluation skills in the nuclear forensic area, exchange of expertise at European and international level, as well as awareness and interagency cooperation. This includes • Networking of experts from Member States using existing platforms of nuclear forensics, i.e. the Nuclear Forensics International Technical Working Group (ITWG) • Demonstration of measurement quality and interpretational skills through an interlaboratory comparison exercise	JRC.G.II.6 Maria WALLENIUS	9.1.2.b	HOME	HOME	Wojtas Wiktor		IAEA - International Atomic Energy Agency (IAEA)	15/12/2016 14/06/2018	CON-AA	3660201801	Ensuring Quality and Building Expertise in Nuclear Forensics: Final report	Final report describing results of the project	30/04/2018	JRC technical reports	
277 - NUSEC JRC.G.II.6	6560 - EDS Enhanced detection & standardisation	A new method for detection of SNM with a high potential for practical applications will be developed. The method concerns interrogation of a fissile sample with pulses of epi-thermal/thermal neutrons with subsequent detection of coincident prompt fission neutrons in an array of liquid scintillation detectors. The neutron coincidences in short time intervals are a strong signature for the presence of SNM. The task includes experimental investigations at the PUNITA facility. Developments include using faster acquisition electronics for better performance in the PSD analysis aimed at determining the prompt fission neutron component of the fission signatures. Within this WP, methodologies, algorithms and technologies to minimize innocent alarms and manage NORM will also be investigated and a novel algorithm developed. NORM data from different sources such as end users and operators and from other projects such as CBORD will be collected. Where warranted specific testing and experimental verification would be carried out. The WP will aim to test and assess newly detection systems and methods, such as He3 alternatives	JRC.G.II.7 Hamid TAGZIRIA	9.1.2.b	HOME	JRC	n/a	ENER TAXUD		01/01/2018 31/12/2019	INS-RS	NORM	Develop algorithm and methodologies for the analysis and management of NORM	•Investigate state of the art technologies and methods used for the management and analysis of NORM in seeking to reduce and minimize innocent/nuisance alarms •Develop a novel algorithm for the identification of radionuclides present in Naturally Occurring radioactive Materials (NORM) in conventional plastic scintillator based Radiation Portal Monitors. •Collect NORM data from different sources such as operators, end users (e.g. Antwerp Port) and other EU projects (e.g. CBORD). •Carry out specific testing and evaluation in controlled laboratory environments, in field and on computers.	31/12/2019	JRC technical reports	
												SCIENCEPU B	Scientific publications and technical reports	1)A technical report on testing procedures for gamma ray imaging systems 2)A scientific publication or a technical report on assessment results of imaging systems 3)A scientific publication on the application of pulsed neutron interrogation to detect Special Nuclear Material (SNM) in CARGO 4)A scientific publication on novel algorithms and methods to analyse NORM	31/12/2019	JRC technical reports	
277 - NUSEC JRC.G.II.6	6580 - FORAN Forensics Analysis	The analysis of samples from real incidents provides high visibility to this activity and puts nuclear forensics in the spotlight. Delivering credible and defensible results is therefore essential not only for the incidents under investigation but also for the reputation of the JRC. Rapid and careful analysis of nuclear material intercepted from illicit trafficking requires a high level of preparedness and well established procedures and thoughtful, scientifically sound development of a dedicated analytical plan. These conditions are best met by practicing, by continued monitoring of measurement and interpretational quality and by close interaction with main stakeholders (investigating authorities, law enforcement etc.). Under the work package, the following activities will be carried out: •Analyse, upon Member States' request, samples seized from real incidents •Participate in collaborative materials exercises as joint learning experience •Conduct operational and interdisciplinary exercises with Member States authorities •Participate in virtual exercises focusing on data interpretation and comparative information analysis •Include classical forensic aspects in the examination of exhibits and evidence This work package has been newly created in order to better reflect the importance and visibility attributed to the investigation of real incidents. Although we cannot predict if or how many requests for support in the investigation of nuclear security incidents will be taken to the JRC by Member States (or other countries outside the EU), we need to be prepared at any time. Additionally, the continuous strive for timely and accurate results, as well as for a comprehensive examination as the basis for enabling informed decisions by prosecution or at policy level	JRC.G.II.6 Maria WALLENIUS	9.1.2.b	HOME	JRC	n/a	ENER		01/01/2018 31/12/2018	INS-RS	1	Scientific publications of Nuclear Forensics collaborative material exercise (CMX-5)	Paper on the results obtained on the 5th collaborative material exercise organized by the "Nuclear Forensics International Technical Working Group – ITWG"	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												2	Cooperation with national authorities for analysing real samples or through joint exercises	Final reports describing the findings of joint activities such as comparative analysis of traditional forensics evidence in JRC's glove-box environment and (in parallel to that) in a police forensic laboratory or analytical results of seized material	31/12/2018	JRC technical reports	
												3	Results of joint nuclear forensic activities	Paper on collaborative scientific activities carried out in the framework of bi-lateral or multi-lateral nuclear forensic development work	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
277 - NUSEC JRC.G.II.6	7322 - IDENTICLASS Development of new methods for IDENTIFICATION and CLASSIFICATION of uranium powders based on image texture and NIR Spectroscopy signature (IDENTICLASS)	The IDENTICLASS project contributes to the Exploratory Research (ER) Programme. This ER project will focus on developing a new approach for the characterization of uranium containing powders, primarily UOC. It combines different image texture analysis methods (such as AMT, angle measure technique, GLCM, grey level co-occurrence matrix; GLRM, grey level run matrix, Heterogeneity, locally binary pattern; etc.), with information on the molecular structure (obtained by NIR spectroscopy) and then combine the analytical data for further processing. The expected result of this exploratory research is to obtain a new method which makes use of a dedicated mathematical model based on data fusion, hence combining image texture features (the results are strongly related to the sample's morphology) and NIR spectroscopy data (the results are related with the sample's chemical composition). This new model will be tested using a suite of almost 100 UOC samples that are available in the Directorate G.II.6 laboratories. Moreover, the concept for dedicated laboratory equipment integrating NIR spectroscopy, optical microscopy with data fusion and multi-variate data analysis will be developed.	JRC.G.II.8 LORENZO FONGARO	9.1.2.b	JRC	JRC	n/a	DEVCO ENER HOME	- University of California, Los Alamos National Laboratory CEA - Commissariat à l'Energie Atomique et aux Energies Alternatives EEAS - European External Action Service EUROPOL - EUROPOL Agency (IAEA) IAEA - International Atomic Energy Agency (IAEA) JAEA - Japan Atomic Energy Agency LLNL - Lawrence Livermore	16/03/2018 15/03/2020	INS-ER	UserID7322 20201	Scientific Publications on the determination of different nuclear forensic signatures and presentation at conferences on the R&D	Paper on novel or improved methodologies for determining characteristic parameters and several conference contributions on the use of colour, image texture analysis and hyperspectral image analysis/infrared spectroscopy for nuclear forensics will underline the leading position of JRC in the area of nuclear forensics.	15/03/2020	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												UserID7322 20202	Final Report on the ER results on analysis of uranium ore concentrate powder samples	Study on the potential application of the colour, image texture analysis and hyperspectral image analysis/spectroscopy to create a classification model for a rapid identification of uranium ore concentrate powder samples. The samples collection available in JRC-KRU will be used for the model development.	15/03/2020	JRC technical reports
9.1.2.c provide technical and statistical support to the modernisation of EU dual-use export control policy, and the development of an EU export control network; analyse open source information a contribution to the EU nuclear non-proliferation; provide training and operational support for Member States and international organisations;																
7839 - STRIKE JRC.G.II.7	681 - STREX Strategic export control	The WP in its various forms since 2011 supports the harmonised implementation of dual-use items' export control policies (EC Regulation 428/2009 and amendments; restrictive measures against certain countries). This has been recognised officially in various statements by Member States, by DG TRADE and also in the latest REPORT FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT COM(2016) 521. The main activities encompass EU Guidelines for harmonised implementation of the dual-use controls; periodical analyses of confidential export authorisations and the EU dual-use Pool of Experts' technical advices. Very important is also the contribution to annual amendments of EC Regulation 428/2009's Annex I ("EU dual-use control list") and amendments deriving from international regimes; sanctions regulations' annexes (e.g. Reg. 1375/2016 with measures targeting Iran); contribution to Impact assessment; Sanctions; Support to EU cooperative programmes' development with third countries; JRC awareness raising; research on compliance; dual-use technologies. Training for export control licensing and customs	JRC.G.II.7 Filippo SEVINI	9.1.2.c	TRADE	JRC	Anders JESSEN	ENER FPI HOME TAXUD	- United States Department of Energy EEAS - European External Action Service ESARDA - European Safeguards R&D Association NSG - Nuclear Suppliers Group (NSG) WCO - World Customs Organization	01/01/2014 31/12/2018	INS-RS	70	Strategic Trade Review 2018	The journal is edited by JRC experts and published on line on the web-site of Liege university. The WP will continue editing and producing 2 "Strategic Trade Review" issues in 2018. If the planned resources and the current Contract Agents will be confirmed.	31/12/2018	Books and monographs with JRC editorship
7785 - MEDAKNOW JRC.G.II.7	756 - STANP Strategic trade analysis for non proliferation	Trade analyses on strategic goods in support to non-proliferation, IAEA nuclear safeguards, and to inform EU policies for export controls and outreach activities in Third Countries. Research and development on strategic trade analysis techniques mutated from statistical and economic methods. Design and development of information technology tools to host, structure, visualise and present trade data by commodities, geopolitical areas, regulations and export guidelines on strategic trade.	JRC.G.II.7 Cristina VERSINO	9.1.2.c	TRADE	JRC	A. Jessen, Head of Unit DG TRADE E1 (WTO coordination, OECD, Export Credits and Dual Use); S. Chardon, DG TRADE E.1.	DEVCO ENER TAXUD	IAEA - International Atomic Energy Agency (IAEA) US DoE - US Department of Energy (DOE) WCO - World Customs Organization	01/01/2014 31/12/2018	INS-RS	140	The Big Table tool collection maintenance - 2018	The Big Table (TBT) is JRC's search tool on reference documents related to IAEA safeguards, export controls and trade nomenclatures. Development of an administration tool to maintain The Big Table (TBT) database up-to-date will be developed. The tool will facilitate the addition of new documents to the collection as well as the revision of existing ones. The tool will support the maintenance of correspondence tables linking related items listed in different documents of the collection.	21/12/2018	Scientific information systems and databases
7785 - MEDAKNOW JRC.G.II.7	5181 - DUSE Dual Use Technical and Trade Analysis Support	Administrative Arrangement with DG TRADE in the field of dual-use export controls (follow-up of AA WPK 1782 DUAL USE, Dec. 2011 - June 2016). Objectives as specified in the AA Technical Annex: (1) To provide DG TRADE with in-depth expertise on scientific and technological issues associated with export controls, in particular in connection with the list of dual-use items and emerging technologies of concern; (2) To enhance the level of Commission participation in control lists-related discussions in multilateral export control regimes; (3) To support EU-wide capacity building and the enhancement of technological expertise throughout the EU export control network. (4) To collect and analyse key data in support of EU export control policy, including on the implementation of the dual-use Regulation and other restrictions on trade in dual-use items. Deliverables foreseen under this contract are all limited distribution, their titles are listed in the note to the work package description.	JRC.G.II.7 Cristina VERSINO	9.1.2.c	TRADE	TRADE	A. Jessen, Head of Unit DG TRADE E1 (WTO coordination, OECD, Export Credits and Dual Use); S. Chardon, DG TRADE E.1.	DEVCO ENER TAXUD		01/01/2017 31/12/2018	CON-AA					
7839 - STRIKE JRC.G.II.7	6562 - STC-KMD Strategic Trade Control - Knowledge Management Development	The concept of knowledge management and Community of Practice for EU strategic trade control will be developed building up on JRC experience in supporting the common commercial policy and dual-use export controls, relying on experience and practice of support to the direct implementation of export controls in the EU and cooperation with third countries, as well as relying on the diffused dual-use technologies competence of JRC directorates. The objectives shall be to: •Develop a Community of Practice and identify their needs •Identify and collect strategic trade control related best-practices, guidelines and relevant open source wires	JRC.G.II.7 Filippo SEVINI	9.1.2.c	TRADE	JRC	n/a	CNECT DEVCO ENER FPI GROW HOME RTD TAXUD	EEAS - European External Action Service ESARDA - European Safeguards R&D Association FPI - Foreign Policy Instruments Service US DoE - US Department of Energy (DOE) WCO - World Customs Organization	01/01/2018 31/12/2018	INS-RS	20	Identify and collect strategic trade control related best-practices, guidelines and open source wires	List of existing best-practices, sources of information and other relevant documents, web-sites	30/06/2018	JRC technical reports
												40	Developing the Strategic Trade Control community of practice	Identification of relevant partners and networks to be associated in the initiative and of the needs to be addressed, including dissemination and protection of sensitive information	31/12/2018	JRC technical reports
9.1.2.d help Member States, partner countries and international institutions (IAEA, etc.) to increase technical knowledge of nuclear security using the European Nuclear Security Training Centre.																
65 - DANTE JRC.G.10	3511 - BFS Training for BFS	Under the contract n. 30692 with the German Federal Office for Radiation Protection (Bundesamt für Strahlenschutz - BFS), 2 hands-on training exercises per year are held for BFS Mobile Expert Support Teams on detection, categorization and identification of nuclear or other radioactive materials.	JRC.G.II.6 JANOS BAGI	9.1.2.d	HOME	n/a	n/a		BFS - Bundesamt fuer Strahlenschutz	01/01/2016 31/12/2018	CON-TW	1807	Messübungen für die allgemeins Gamma Spektrometrie	Provision of specific training course(s) as described in the contractual agreement (programme, teachers, training material, etc.). Topic: Messübungen für die allgemeins Gamma Spektrometrie	31/12/2018	Training
65 - DANTE JRC.G.10	3625 - SUCAB Support capacity building in nuclear security through training at EUSECTRA	The capability to address nuclear security threats depends on the availability of an appropriate technical infrastructure and on the human capital for operating it. Capacity building activities are carried out in the nuclear security area. This includes the development of training modules for training of professionals, cross discipline training, re-training and train-the-trainers. Moreover, it covers the development of scenarios for table-top and for hands-on exercises and most importantly it comprises the provision of appropriate samples of nuclear materials and of other radioactive materials as well as naturally occurring radioactive materials enabling training under realistic conditions. The training materials and training infrastructure developed under this work package will constitute an essential element for the implementation of training activities carried out under institutional or competitive activities.	JRC.G.II.6 Jean GALY	9.1.2.d	DEVCO	JRC	Devco: Eddie Maier	ENER HOME TAXUD	IAEA - International Atomic Energy Agency (IAEA) MS EU - Member states EU US DoE - US Department of Energy (DOE) WCO - World Customs Organization	01/01/2016 30/12/2019	INS-RS	1809	SUCAB trainings 2018	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2018 and their organisation.	30/12/2018	Training
												1909	SUCAB trainings 2019	Coherent set specific training courses (programme, teachers, training material, etc.) delivered in 2019 and their organisation.	30/12/2019	Training
65 - DANTE JRC.G.10	5115 - NDT-3 Nuclear Detection Training on behalf of DoE	JRC will provide training on nuclear detection including conceptual aspects of nuclear security and nuclear detection, basics of radiation detection, practical training using portal monitors, alarm adjudication, use of hand-held equipment for alarm verification, measurement exercises using nuclear and other radioactive materials. NDT-3 is on-going till September'18 and the JRC commits contractually the provision of 4 training events and 6 workshops in this time frame (first will be delivered in April'17). It shall be noted that focus went away from Front Line Officers training and is further directed to capacity building and best/good practice sharing (involving focus on train the trainer type of support).	JRC.G.II.6 Jean GALY	9.1.2.d	HOME	n/a	W. Wojtas, HOME.A.1.002	DEVCO TAXUD	Cust Aut MS - MS Customs Authorities MS EU - Member states EU US DoE - US Department of Energy (DOE)	01/10/2016 30/09/2018	CON-TW	1812	Nuclear detection training-USDOE	Provision of specific training course(s) as described in the contractual agreement (programme, teachers, training material, etc.).	30/09/2018	Training
65 - DANTE JRC.G.10	5116 - NDT-TAXUD-2 Nuclear Detecton Training and Support for EU Customs	JRC will provide training on nuclear detection including conceptual aspects of nuclear security and nuclear detection, basics of radiation detection, practical training using portal monitors, alarm adjudication, use of hand-held equipment for alarm verification, measurement exercises using nuclear and other radioactive materials. AA with TAXUD for frontline officers from EU MS. Organisation and provision of field exercises in MSs will be supported by the JRC.	JRC.G.II.6 Jean GALY	9.1.2.d	TAXUD	TAXUD	TAXUD B.2 Wil van Heeswijk	HOME TRADE	Cust Aut MS - MS Customs Authorities MS EU - Member states EU WCO - World Customs Organization	01/10/2017 30/09/2019	CON-AA	1813	Nuclear detection training-TAXUD	Organisation and execution of training courses related to nuclear detection methods. Train the trainer activity shall be privileged.	01/10/2018	Training
65 - DANTE JRC.G.10	5117 - NDT-HOME Nuclear Detection Training EU HOME	Organisation and provision of training for law enforcement community at the EUSECTRA. JRC will provide training on nuclear detection including conceptual aspects of nuclear security and nuclear detection, basics of radiation detection, practical training using portal monitors, alarm adjudication, use of hand-held equipment for alarm verification, measurement exercises using nuclear and other radioactive materials.	JRC.G.II.6 Jean GALY	9.1.2.d	HOME	HOME	W. Wojtas, HOME.A.1.002	TAXUD	INTERPOL - INTERPOL Law-enforcement Nat. Auth. - MS Law-enforcement National Authorities MS EU - Member states EU	01/12/2017 01/12/2018	CON-AA	1811	Nuclear training for law enforcement	Provision of specific training course(s) as described in the contractual agreement (programme, teachers, training material, etc.).	03/01/2018	Training
9.1.2.e contribute to safeguards, proliferation resistance, and the physical protection of innovative designs of nuclear reactors in collaboration with the GIF.																
7785 - MEDAKNOW JRC.G.II.7	712 - CONTE Concepts, methods and techniques for non-proliferation	The work-package supports the evolution of the nuclear non-proliferation regime with various activities. It investigates concepts such as: safeguards by design (SbD), proliferation resistance (PR) evaluation methodologies for nuclear energy systems, and the IAEA State Level Concept for nuclear safeguards". It explores techniques and tools and looks into the potential of various types of information to support the non-proliferation regime taking a "systems thinking" perspective. It develops and - where needed - applies dedicated tools for the acquisition, processing of such information". It also monitors open source information related to nuclear non-proliferation and security and retains the capability to perform upon request technical analyses on selected technical non-proliferation issues as performed in the past in support to the Iran nuclear file and related deal. It includes technical work in support to the International Partnership for Nuclear Disarmament and	JRC.G.II.7 Giacomo COJAZZI	9.1.2.e	ENER	JRC	Head of Unit ENER.E.1, P. Meylemans	DEVCO TAXUD TRADE	EEAS - European External Action Service EU SITCEN - EU SITCEN - EU Situation Centre GIF - Generation-IV International Forum IAEA - International Atomic Energy Agency (IAEA)	01/01/2014 31/12/2018	INS-RS	170	R&D on Safeguards Regimes conceptual aspects-2018	R&D on conceptual aspects of International Safeguards Regimes (EURATOM and IAEA). It will include R&D on the use of open source (OS) information to support nuclear non-proliferation: it will reflect on the role of OS analysis in informing the NP analysts on i.a. possible undeclared activities on clandestine sites. The activity will adopt a systems thinking approach. The deliverable also covers domain-related EC Support Programme to the IAEA Tasks such as Task 16-CCA-002 on Guidance on implementation of State Level Approaches (SLAs).	21/12/2018	JRC technical reports
												200	Nuclear Security Media Monitor (NSMM)-2018	NSMM operation, maintenance and update. Maintenance and update will involve both the system and the monitored information sources over the web. Based on JRC's EMM technology, NSMM automatically monitors open source information relevant to the nuclear security & non proliferation domain. The front page of the system is openly available. Depending on the needs defined together with IAEA in 2017 (task EC-D-01880), NSMM functionality might be extended based on JRC's I.3 EMM technologies. The system is used also by G.10.	21/12/2018	Scientific information systems and databases
9.2. International cooperation and development																
9.2.1. 2030 agenda on sustainable development																

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
9.2.1.a under the new European consensus on development, help to monitor and implement the SDGs by developing and integrating knowledge management tools and organising information on related policies, indicators, methods, and data. In doing this, make it easier to incorporate the social, economic, and environmental information needed to achieve the SDG targets, identifying interlinkages (trade-offs and co-benefits) and taking into account																
222 - DRMKC JRC.E.1	374 - GHSL-CORE GHSL - Baseline data production, methodological developments and international partnerships	GHSL-CORE establishes the core methods and the baseline spatial data for development of global human settlement and exposure indicators using satellite and socio-economic census data. It consolidates scientific methods and systems for reliable, automatic information gathering, extraction, and analysis. DG REGIO relies on the information and tools developed by the work package to inform the EU Urban Agenda and the New Urban Agenda. In addition, the work supports the post-2015 Int. frameworks, namely Sendai framework for Disaster Risk Reduction (DRR), Sustainable Development Goals (SDG's), particularly its Goal 11 (make cities & human settlements inclusive, safe, resilient, sustainable), and the Paris Agreement on the reduction of climate change. In line with remit of Sendai Framework for DRR and with the SDG's, the work package supports international scientific partnerships on remote sensing of human settlements including capacity building, sharing data and methods. In particular, GHSL-CORE is supporting the Group of Earth Observation through coordinating the Human Planet Initiative, which establishes a new community of practice aimed at supporting the family of post-2015 frameworks with methods, tools, and information	JRC.E.1 Thomas KEMPER	9.2.1.a	REGIO	JRC	Lewis Dijkstra (REGIO) Lewis.DIJKSTRA@ec.europa.eu	ECHO ESTAT	GEO - The Group on Earth Observations OECD - Organisation for Economic Co-operation and Development (OECD) UN HABITAT - United Nations, Human Settlement Programme (UN HABITAT) UN ISDR - United Nations International Strategy for Disaster Reduction (UN-ISDR) UNDP - United Nations Development Programme	01/07/2016 31/12/2019	INS-RS	ATLAS2018	Atlas of the Human Planet 2018	The Atlas of the Human Planet provides updated information on the human presence in the planet focussing each year on different cross-cutting thematic issues related to the monitoring of the implementation of the post-2015 international frameworks. It is based on the GHSL data produced by the GHS-Core work package. The Atlas is edited by the GHS-Core workpackage and includes contributions from the GEO Human Planet Initiative.	30/11/2018	Science-for-policy reports
4856 - ARCTIC JRC.C.5	4915 - ARCTIC Coop International Cooperation in the framework of the Arctic	This work-package contains existing JRC "science for diplomacy" cooperation with the Arctic Council and its subsidiary bodies, a study on traditional knowledge and its links with conventional science and a new topic on the role of smart specialisation in sparsely populated areas including the Arctic, in cooperation with the relevant regions.	JRC.C.5 Julian WILSON	9.2.1.a	MARE	JRC	CLOCCHIATTI Alessia (MARE.C.1); PETERSEN Terkel (EEAS.III.B.1); GAMBARDELLA Attilio (RTD.I.4) ENV.C.2	CLIMA ENV REGIO RTD	AACA - Adaptation Actions for a Changing Arctic AMAP - Arctic Monitoring and Assessment Programme EEAS - European External Action Service	01/01/2017 31/12/2019	INS-RS	201801	Indicators for Arctic Resilience	The implementation plan of the Arctic Resilience Action Framework foresees an inventory of existing and emerging measurement protocols and indicators for monitoring progress in implementation of the framework. This deliverable will report on the potential contributions from the JRC to the inventory of existing and emerging measurement protocols and indicators, drawing on activities foreseen under both the ARCTIC work package PACAR and the activities of Project 7596 Resilience4EU, in the framework of the first Arctic Resilience Forum, due to be held in Finland in autumn 2018. Link with Project 7596 Resilience4EU.	30/09/2018	Article contribution to a monograph or other periodicals
												201802	Smart Specialisation in sparsely populated regions and the lessons/common features that could be applied in the Arctic	Policy brief based on the application of the Smart Specialisation concept in sparsely populated regions and the lessons/common features that could be applied in the Arctic context.	30/11/2018	JRC contributions to policy documents
												201901	Science for EU Arctic Policy	The deliverable will be a science for policy report examining the impact of the JRC Arctic project on EU Arctic policy objectives. Timed for the completion of the Finnish chairmanship of the Arctic Council and three years after the adoption of the EU Arctic policy, it review the effectiveness of the JRC ARCTIC project in meeting its' objectives, including engagement with Arctic council bodies, including AMAP, SDWG, AACA and the expert group on black carbon and methane.	30/06/2019	Science-for-policy reports
												201902	Insights, expectations and visions of Arctic communities	In the framework of WP 4915 ArcticCoop (Project 4856) Unit I.1 will cooperate with Unit C.5 to plan and carry out engagement with Arctic communities in futureing the governance of their environment and livelihoods tapping into different insights including "traditional knowledge" and existing scenarios. The outcomes of these engagements include a report of insights, expectations and visions of the Arctic communities involved.	30/06/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201903	JRC collaboration with the FPIs "Black Carbon in the Arctic" and "Arctic Policy Assessment"	The JRC is identified as collaborating with two Arctic FPI (foreign policy instruments): Black Carbon in the Arctic managed by the AMAP secretariat and Arctic Policy Assessment managed by University of Lapland. By mid-2019 both projects will have been running for over a year, it is thus timely to produce a report on the progress in each collaboration.	15/11/2019	JRC technical reports
337 - CoM JRC.C.2	6360 - CoM South Med Covenant of Mayors South Mediterranean	The project aims to adapt the "Covenant of Mayors" (CoM) to the ENPI South Mediterranean Partner Countries. The purpose is to provide the ENPI South countries and the project beneficiaries with technical and scientific assistance, analysis and input to support the project implementation, including Sustainable Energy and Climate Action Plans guideline and implementation and monitoring guidelines. The WPk contributes to the achievement of the project's objective by supporting the development of the capacities of local authorities in the region to formulate and implement sustainable local policies, such as those implied by joining the CoM and developing the related SECAPs. In the WP the following activities will be undertaken: adapting the existing methodology and tools; evaluation of SECAPs, feedback to the Covenant Cities, the Project and the EC (DG NEAR); monitoring of the CoM South implementation; providing technical help desk service; developing methodology, including adaptation and access to energy. In the WP the following activities will be undertaken: adapting the existing methodology and tools; evaluation of SECAPs, feedback to the Covenant Cities, the Project and the EC ; monitoring of the CoM South implementation; providing technical help desk service; developing methodology. The main methodology to be used is in line with the one applied to the CoM initiative with some adaptations. The technical support provided by the JRC will have a nature of guidance as well as methodological and technical support to the Project and	JRC.C.2 PAOLO BERTOLDI	9.2.1.a	NEAR	NEAR	n/a	CLIMA ENER FPI		01/03/2018 28/02/2021	CON-AA	1	Annual evaluation of the CoM South initiative	Production of an annual report to summarize the results achieved and the lesson learned in the CoM South initiative up to September 2018, based on SEAP and SECAPs. The main CO2 emission and sustainable energy indicators will be presented based on SECAPs and Monitoring Reports. The report will also cover adaptation and access to energy. Best practices in policies (mitigation, adaptation and access to energy) by cities will be identified.	31/12/2018	Science-for-policy reports
												2	Analysis of the submitted SECAPs	The JRC will evaluate the final SECAPs as submitted officially by the cities, including Baseline emission inventories, climate mitigation and adaptation. A report on the analysed SECAPs will be prepared.	31/12/2018	JRC technical reports
												3	Revision of the monitoring guidelines	Under this task the monitoring guidelines of the SECAP implementation will be developed to include adaptation and access to energy. Then by using these guidelines the monitoring of the SECAP implementation will be carried out	31/08/2018	JRC technical reports
												4	Methodological adaptation of the CoM South to the new Global Covenant of Mayors	With the methodological developments in the frame of the Global Covenant, there is the need to adapt the CoM South Guidebook to the Global harmonised methodology, where possible, and at the same time to preserve the regional specificity in relation to climate actions.	30/09/2018	JRC technical reports
437 - SAFE&CLEAN-CONSTRUCT JRC.E.4	6480 - Eurocodes Balkan Adoption and implementation of the Eurocodes in the Balkan region	The interest in the Eurocodes adoption and implementation in the non-EU Balkan countries is based on the opportunity for an advanced common standardization environment. Moreover, adoption and implementation of the Eurocodes will help the Candidate Countries to fully implement EU acquis at the time of accession and support Potential Candidate Countries to progressively align with the EU acquis. The JRC has offered scientific and technical support to non-EU Balkan countries within the E&I Action in 2013-2016. All countries in the region reported significant progress in the Eurocodes adoption at the workshop at Skopje in 2016. However, they face challenges, as there is a lack of relevant institutional support for the adoption and implementation of the Eurocodes. As a result, further effort and technical assistance is necessary to support the introduction of the Eurocodes into the national regulatory environment which is a basic step in full implementation. EU experts can share knowledge with competent organizations in non-EU Balkan countries on technical methods and techniques underpinning EU policy implementation. Additionally, there is a need for creating a regional platform to enhance collaboration within the Balkan countries on the adoption and implementation of the Eurocodes. Of particular importance is the harmonization of seismic hazard, snow, wind and thermal maps. This will be supported by the establishment of a Eurocodes Community of Practice at the Balkan region. The overall objective of the activities is to enhance building capacities within the National Authorities and facilitate the adoption and implementation of the Eurocodes in this region through further technical assistance directed at three levels: (i) National regulatory framework level – to facilitate implementation of the Eurocodes in the National regulatory framework; (ii) Implementation level – to assist the training of practitioners on use of the Eurocodes; (iii) Maintenance and upgrading level – to increase awareness of the National Authorities and National Standardization Bodies on maintaining the existing Eurocodes and keep pace with the coming-up second generation of the Eurocodes. The training and guidance material to be developed through the activities will support other third countries that are in the process to adopt the Eurocodes. The activities will be performed in collaboration with CEN and EU Member States. Work is relevant to DRMKC, KC TP and cities initiative.	JRC.E.4 ADAMANTIA ATHANASOPOULOU	9.2.1.a	GROW	JRC	n/a	NEAR	CC EU - Candidate Countries EU Reg Aut Entr - Candidate Countries / Members States regulatory authorities on Enterprise	01/01/2018 31/12/2020	INS-E&IA	1	Open source training material and report facilitating the implementation of the Eurocodes in national regulatory framework	The workshop audio-visual material (presentations) from the workshop will be edited, compiled to be made available on the Eurocodes website for free download, thus multiplying the impact of the Workshop on implementation of the Eurocodes in National regulatory framework, to be held in 2018. The dissemination of the workshop material will provide an opportunity to build on the experience, initiatives and difficulties concerning the implementation of the European standards and policies for construction in the Balkan region. A JRC report will be prepared based on the material developed and discussed at the workshop. The report will focus on assessing the challenges non EU- Balkan countries are encountering in the Eurocodes implementation in the national regulatory framework and providing recommendations for facilitating the procedure. The report will be of interest to countries worldwide (e.g. Georgia, Sri-Lanka) that have expressed interest in the adoption of the Eurocodes.	20/12/2018	Science-for-policy reports
												2	Open source training material on seismic design of building and bridge structures with Eurocodes	The training material, the presentations and eventually audio-visual material from the summer school on the seismic design with the Eurocodes will be made available on the Eurocodes website for free download, thus spinning-off the impact of the event worldwide. The event will provide an opportunity to build on the experience, initiatives and difficulties concerning the implementation of the European standards and policies for construction in the Balkan Region. A JRC Report with a summary of the training material and impact assessment of the event and conclusions will be prepared.	16/12/2019	Science-for-policy reports
												3	Roadmap for maintaining the existing Eurocodes and preparing for the second generation of the Eurocodes	The material presented at the workshop in 2020 with the representatives of the National Authorities and National Standardization Bodies will form a basis of a JRC report/manual on the roadmap for maintaining the existing Eurocodes and keeping pace with the coming-up of second generation of the Eurocodes. The experience and results of creating a regional platform (Community of Practice) to enhance collaboration within the Balkan countries on the adoption and implementation of the Eurocodes will be disseminated. Particular attention will be paid on the harmonization of seismic hazard, snow, wind and thermal maps of the Balkan countries with the support of the established regional Community of Practice. The report is aimed to build administrative capacities in the respective authorities/regulators in the Balkan countries and other interested parts of the world (e.g. Horizon 2020 associated countries, Sri-Lanka).	16/12/2020	Science-for-policy reports
222 - DRMKC JRC.E.1	6582 - TR-AID for ECHO TR-AID for ECHO 2017/2018	EU Aid Explorer (formerly TR-AID) is a web based corporate tool of the European Commission (https://euidexplorer.ec.europa.eu). It has been developed with the purpose of sharing external assistance data amongst donors, beneficiaries and other stakeholders in the world. The tool is continuously being extended to add further functionality and data to meet the needs of the different stakeholders. The project focuses on aid transparency, accountability, aid effectiveness, coordination amongst donors, and fragmentation of aid. It is vital to note that improving transparency, information and accountability are core principles for the effective use of development finance. The Integrated Analysis Framework (IAF) of ECHO, developed and piloted in 2013 following an internal process review of ECHO's needs-based decision making, is an integrated annual exercise leading to the preparation of Humanitarian Implementation Plans and prioritisation of countries for the WWD annual funding allocation (i.e. ECHO's humanitarian assistance budget allocations). The Integrated Analysis Framework website, called IAFPortal (http://iafportal.jrc.ec.europa.eu) was developed and launched under the DRM2014 (AA33522) arrangement. The system was used in the Annual Aid Strategy cycle	JRC.E.7 Anjula GARG	9.2.1.a	ECHO	ECHO	n/a	DEVCO FPI NEAR	MS EU - Member states EU	01/12/2017 30/11/2018	CON-AA	1	Further Customised and maintained EAE for ECHO	Report on implementation of the AA and its completed tasks. These tasks include adding new functionalities and tailoring existing ones, as defined by DG ECHO, in the EU Aid Explorer, and for IAF (Integrated Assessment Framework)	30/11/2018	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. ID	Title	Description	Expect. Rel. Date	Category	
6479 - K4SDFS JRC.D.6	6843 - KnowSDGs Knowledge management for Sustainable Development Goals	The UN Agenda 2030 for Sustainable Development, with 17 SDGs and 169 targets, offers an integrated and complex development framework that cuts across many EU policies. Sharing knowledge will avoid gaps and duplication, whilst facilitating the analysis of trade-offs and promoting synergy, coherence and co-benefits. This WPK will develop knowledge management tools that organise information on policies, indicators, methods, data and policy position documents related to the achievement of the SDGs. It will support the Better Regulation Tools to ensure further mainstreaming of sustainable development into European policies and initiatives Flagship initiative. It will facilitate the study of inter-linkages among SDGs in terms of trade-offs and synergies between SDGs and their targets in relation to EU policy priority areas. It will contribute to the development of a long-term vision and narrative for Sustainable Development by contributing to the project "The World in 2050" (TWI2050) including a focus on Green Finance as implementation tool for the Agenda 2030.	JRC.D.6 Apollonia MIOLA	9.2.1.a	SG	JRC	n/a	CLIMA DEVCO EEAS ENV ESTAT NEAR	OECD - Organisation for Economic Co-operation and Development (OECD) UNDESA - UN Department of Economic and Social Affairs WB - World Bank	01/01/2018 31/12/2019	INS-RS	201801	Inter-linkages among SDGs and Policy coherence	The mapping exercise of the EU policies into SDGs will be complemented by the analysis of the interlinkages among SDGs to improve policy coherence. It will apply network analysis tools to visualise trade-offs and synergies between SDGs and their targets in relation to EU policy priority areas.	31/12/2018	Science-for-policy reports	
												201901	TWI2050	The TWI2050 contributes to the development of a long-term vision for Sustainable Development to assist the implementation of the SDGs by contributing (inter- alia) to the project "The World in 2050" (TWI2050) and coordinating the interdisciplinary input from across JRC.	31/01/2019	Science-for-policy reports	
												201902	Stakeholders platform	Contributing to the EC Stakeholders platform on SDGs which will be set up as indicated by the EU Communication COM(2016) 739 final. It will include functionality for cross-policy analysis and communication with respect to SDG policy implementation and ensure that the SDGs implementation is informed by evidence.	30/11/2019	Science-for-policy reports	
												201903	Community of Practice on SDGs (on-line and off-line Activity)	The on-line Community of Practice in Connected managed by H2 will be complemented with offline activities such as workshops, meetings, conferences involving external stakeholders from the international scientific community, private sector, civil society. It will contribute to the global community of organisations and experts committed to collaboratively generating, managing and sharing knowledge and data to mobilise a sustainable future. The Community of Practice on Sustainable Development establishes a Commission wide network of experts. Using the categories provided by the SDG framework experts from all services at the desk-level will have the opportunity to exchange topic-specific experience and information. Such a network will help integrate policies across services and improve policy coherence.	31/12/2019	Science-for-policy reports	
7512 - FAIRNESS JRC.I.1	7043 - Poverty Mapping of deprived communities and poverty	Poverty often manifests also in how and where build their dwellings. The most prominent manifestations of urban poverty are the massive slums of the megacities in the global South. UN-HABITAT defines slums as a group of households in an urban area who lack at least one of the following criteria: durable housing, sufficient living space, easy access or adequate sanitation, and the security of tenure.	JRC.E.1 Thomas KEMPER	9.2.1.a	REGIO	JRC	n/a	DEVCO ESTAT	UN HABITAT - United Nations Human Settlement Programme (UN HABITAT) UNDR - United Nations Development	01/01/2018 31/12/2018	INS-RS	PovertyMap ping2018	Mapping of deprived communities and poverty	The technical report will summarise the methodology and the results of the pilot project and, provided positive correlations a found, the results may contribute to the Atlas of the Human Planet 2018 (User ID ATLAS2018 - Internal ID 545119).	31/10/2018	JRC technical reports	
9.2.2. Food security and nutrition, rural development and sustainable agriculture																	
9.2.2.a monitor agricultural resources, analyse situations of food and nutrition insecurity (including food poverty) through a food system approach; provide support with economic and biophysical modelling and information systems to help build communities that are more resilient, especially to the impacts of climate change. Provide an advanced knowledge base to help achieve zero hunger in 2030; forecast crop yields and production to support global food																	
482 - Food & Nutrition Sec JRC.D.5	616 - AGRO-DEV Analysing Agriculture for Developing Countries	AGRO-DEV analyses the impact of policies measures and programmes (in Partner Countries as well as EU cooperation policies/programmes) on the farming sector and on food security and poverty level in selected African economies, in support and/or anticipation of competitive activities for DG DEVCO (TS4FNS administrative arrangements and possible continuations). Effects measures range from international, regional, country, local and farm/household levels. The first levels –from international to country– focus on effects in terms of prices, commodity markets and employment. The latter, local and farm/household levels, namely encompasses small regions, villages and farm-household analysis, with emphasis on farm household consumption, production, income, investment decision, and structural change	JRC.D.4 Sergio GOMEZ Y PALOMA	9.2.2.a	DEVCO	JRC	DEVCO C1	AGRI RTD	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AREC - African Regional Economic Communities AU - African Union IFPRI - INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE	07/01/2013 29/01/2020	INS-RS	1	Modelling Agriculture for Dev. Countries (Micro)	Improvement of the methodology for quantitative Quantitative Impact Analysis of EU and Country Policies on selected African Countries at Micro (Farm-Household) and Regional level in support to activities under the AA-TS4FNS 1, 2, 3 and 4	20/12/2018	Science-for-policy reports	
												2	Modelling Agriculture for Dev. Countries (Macro)	Improvement of the Methodology for Quantitative Impact Analysis of Country Policies on selected African Countries at Macro level, with particular focus on the nutritional, demographic aspect of the single-country CGE model (STAGE_DEV) and link with the micro level analysis, in support to activities under TS4FNS 1, 2, 3 and 4	29/01/2020	Science-for-policy reports	
482 - Food & Nutrition Sec JRC.D.5	1003 - MARS-FS Monitoring Agricultural Resources for Food Security	The project will focus on the development and improvement of crop monitoring and modelling methods in support of the EU food security related policies and projects. In particular it will progressively improve the currently existing methods in the agriculture and food security monitoring domain, by using innovative Earth observation data such as those made available by the Copernicus project. The methods and information systems developed, will be applied further to strengthen capacity and collaboration with relevant partners in developing countries, in collaboration with UN agencies (mainly the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP)) and international and regional research centres. In the JRC, data and methods produced by this work package will be used by other work packages (e.g. AGWARN and TS4FNS) as the main information source for reports and bulletins about food availability in countries exposed to high risk of food insecurity. The work package will also provide information on postharvest losses, which is necessary to estimate food availability and to prepare food aid interventions, by contributing to the APHLIS+ project (African Postharvest Losses Information system). The activities for supporting the APHLIS+ project include the development of two early warning systems, one about increased postharvest losses due to rainfall at harvest time and one about pre-harvest aflatoxin contamination linked to drought. APHLIS data directly contribute to the Food Loss Index of SDG 12.	JRC.D.5 Felix REMBOLD	9.2.2.a	DEVCO	JRC	J-P Halkin, HoU C1	AGRI ECHO RTD	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AREC - African Regional Economic Communities AU - African Union CGIAR - Consultative Group on International Agricultural Research ECOWAS - Economic Community Of West African States EEAS - European External Action Service IFPRI - INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE IGAD - Intergovernmental Authority on Development NEPAD - OST - New Partnership for Africa's Development (NEPAD) SANSAN - South African National Space Agency WFP - World Food Program of the United Nations	01/01/2016 31/12/2019	INS-RS	201801	Improved crop monitoring methods for food security	Continue the methodological improvement of crop monitoring methods for food security based on Earth Observation and Agro-meteorological data such as for example using Sentinel data for project implementation and monitoring and improving quantitative yield forecasting in countries outside Europe with limited data availability. Include new methodological developments in the crop monitoring tools such as SPIRITS (Software for Processing and Interpreting Remote sensing Image Time Series) and CST (Crop Statistical Tool) which are made available to the public and used by competitive projects such as TS4FNS (4906) and GME&Africa (5013).	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
												201802	Postharvest Loss estimation for policy making	Continue the support to APHLIS+ project by leading the development of early warning systems for postharvest losses increases or aflatoxin production linked to climatic drivers. APHLIS+ postharvest losses estimates will be a direct contribution to the Global Food Loss Index (SDG 12).	31/12/2019	Scientific information systems and databases	
												201901	Improved crop monitoring methods for food security	Continue the methodological improvement of crop monitoring methods for food security based on Earth Observation and Agro-meteorological data such as for example using Sentinel data for project implementation and monitoring and improving quantitative yield forecasting in countries outside Europe with limited data availability. Include new methodological developments in the crop monitoring tools such as SPIRITS (Software for Processing and Interpreting Remote sensing Image Time Series) and CST (Crop Statistical Tool) which are made available to the public and used by competitive projects such as TS4FNS (4906) and GME&Africa (5013).	31/12/2019	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)	
482 - Food & Nutrition Sec JRC.D.5	1023 - RESIFOOD Resilience-building for improved food & nutrition security	This work package will address the determinants of household vulnerability and resilience to food and nutrition insecurity, in line with the Commission's Communication COM(2012) 586 and with geographic focus on Africa. It will (i) assess household and community resilience to food and nutrition insecurity, and (ii) investigate the determinants of resilience to food and nutrition insecurity in different environments and settings. Nutrition as an input and outcome of resilience will also be addressed, in particular those nutrition policies that promote the 1 000-day window of opportunity (to improve nutrition for mothers and children in the 1 000 days from a woman's pregnancy through to her child's 2nd birthday). This work package will contribute to the JRC horizontal project on resilience with input on the resilience measurement methodologies, and input on the EU initiatives and programmes for building resilience in developing countries.	JRC.D.5 Francois KAYITAKIRE	9.2.2.a	DEVCO	JRC	Jean-Pierre HALKIN	ECHO NEAR RTD	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AU - African Union ECOWAS - Economic Community Of West African States EEAS - European External Action Service IGAD - Intergovernmental Authority on Development WFP - World Food Program of the	01/01/2014 31/12/2019	INS-RS	1	Reports on modelling determinants of resilience to food and nutrition insecurity	Technical reports on the modelling results and policy recommendations to improve resilience to food and nutrition insecurity in selected countries to be defined in consultation with DG DEVCO. Recommendations on indicators for monitoring progress on the resilience agenda.	31/12/2019	JRC technical reports	
												2	Scientific publication on modelling determinants of resilience to food and nutrition insecurity	Scientific paper on modelling determinants of resilience to food and nutrition insecurity and alternative approaches to resilience assessment. Contribution to the Community of Practice of the Resilience4EU Project (Ref JPB: 7596)	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS	
482 - Food & Nutrition Sec JRC.D.5	2249 - TS4FNS 2nd PART Technical and scientific Support to agriculture and Food and Nutrition Security sectors 2ND PART	This description describes the 2nd TS4FNS package. The JRC will provide support for: i) improvement of information systems on agriculture, nutrition and food security, ii) policy and economic analysis to support policy decision-making process and iii) scientific advice on selected topics concerning sustainable agriculture and food and nutrition security. Support is provided in selected developing countries mostly in sub-Saharan Africa. Contract signed. 4156000€	JRC.D.4 Sergio GOMEZ Y PALOMA	9.2.2.a	DEVCO	DEVCO	Jean-Pierre Halkin DEVCO C1	AGRI	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AU - African Union ECOWAS - Economic Community Of West African States EEAS - European External Action Service IGAD - Intergovernmental Authority on Development WFP - World Food Program of the	19/12/2014 31/12/2018	CON-AA	7	Modelling Agriculture for Dev. Countries (Macro Economic analysis)	Policy impact analysis at the country level in a selected relevant Sub Sahara African country using CGE approach	31/12/2018	Science-for-policy reports	
482 - Food & Nutrition Sec JRC.D.5	3363 - TS4FNS - Part 3 Technical and scientific Support to agriculture and Food and Nutrition Security sectors (TS4FNS).	This description describes the 3rd TS4FNS package. The JRC provide support for: i) improvement of information systems on agriculture, nutrition and food security, ii) policy and economic analysis to support policy decision-making process and iii) scientific advice on selected topics concerning sustainable agriculture and food and nutrition security. Support is provided in selected developing countries mostly in sub-Saharan Africa	JRC.D.4 Sergio GOMEZ Y PALOMA	9.2.2.a	DEVCO	DEVCO	Jean-Pierre Halkin DEVCO C1					CON-AA	1	Policy impact at the Macro level	Report on the Macro Economy in selected African Countries	31/12/2018	Science-for-policy reports
													3	Microeconomic analysis of public policies	Modelling impact analysis of selected policy measures - e.g. input subsidies, price support, etc. – at the micro level in selected African Countries to be decided in agreement with DEVCO	31/12/2018	Science-for-policy reports
482 - Food & Nutrition Sec JRC.D.5	4868 - AGWARN Global Agricultural Early Warning	The work package will support the EU food security related policies and projects by managing the ASAP (Anomaly hot Spots of Agricultural Production) global agricultural early warning and monitoring information system and by producing monthly short reports about agricultural production anomalies. Such analysed information about global hotspots of agricultural production anomaly is crucial for providing timely and easily understandable warnings to policymakers about food production shortages to come, and to support their decisions regarding early response measures. The information produced will be made available in near-real time to colleagues in DG DEVCO and in EU Delegations as well as to the general public. Furthermore, the information produced will enable the JRC to contribute to existing international monitoring systems that produce internationally consolidated food security early warning information, such as the GEOGLAM crop monitor for countries at risk (EWCM), which includes contributions by the World Food Programme (WFP), the Food and Agriculture Organization of the United Nations (FAO), FEWSNET, etc.). The information system will be global but focusing mainly on countries with high risk of food insecurity, and in this sense it will be fully complementary to the JRC's MARS crop forecasts for Europe, which provide more detailed information for DG AGRI.	JRC.D.5 Felix REMBOLD	9.2.2.a	DEVCO	JRC	Jean-Pierre HALKIN	AGRI ECHO NEAR RTD	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AREC - African Regional Economic Communities AU - African Union CGIAR - Consultative Group on International Agricultural Research GEO - The Group on Earth Observations SANSAN - South African National Space Agency USAID FEWS NET - USAID Famine Early Warning Systems Network (FEWS NET) WFP - World Food Program of the	01/01/2017 31/12/2019	INS-RS	201801	Timely agricultural early warning information and contribution to GEO crop monitoring countries at risk	Monthly updates about global hot spots of agricultural anomalies based on the ASAP (Anomaly hot Spots of Agricultural Production) system and contribution to GEO's Crop Monitoring for Early Warning (CM4EW). The warning messages will be edited by D5 agriculture analysts based on an automatic warning classification using remote sensing and agro-meteo indicators as well as auxiliary data sources. The warning messages will be understandable to non-remote sensing and spatial data experts in policy DGs and outside the EC. Scientific input to the G20 GEOGLAM (GEO Global Agricultural Monitoring) initiative through the MARS interface with the global community of practice.	31/12/2019	JRC contributions to policy documents	
												201802	Early warning system maintenance and development	Continue the development of the ASAP system both in terms of improvement of indicators and methods and also on the system architecture side. This will include for example water balance indicators instead of simple rainfall anomalies and also the improvement of near real time filtering of Earth observation data.	31/12/2018	JRC technical reports	
												201901	Early warning system maintenance and development	Continue the development of the ASAP by including more indicators and possibly seasonal weather forecasts. Expand the high resolution visualization platform by including time profiles of LANDSAT and SENTINEL2 data at parcel level.	31/12/2019	JRC technical reports	
482 - Food & Nutrition Sec JRC.D.5	4906 - TS4FNS - 4 Technical and Scientific Support for Food and Nutrition Security - Part 4	The objective of the AA is to support EU institutions and the partner countries in the formulation of policies and programmes on sustainable agriculture and food and nutrition security, through the provision of demand-driven technical and scientific advice. The JRC provides support for: i) improvement of information systems on agriculture, nutrition and food security, ii) policy and economic analysis to support the policy decision-making process, and iii) scientific advice on selected topics concerning sustainable agriculture and food and nutrition security. The main geographical focus is Sub-Saharan Africa, with actions in other areas of the world affected by food crises or areas of particular relevance to DG DEVCO.	JRC.D.5 Francois KAYITAKIRE	9.2.2.a	DEVCO	DEVCO	Jean-Pierre HALKIN	ECHO NEAR				CON-AA	3	Microeconomic analysis of public policies	Modelling impact analysis of selected policy measures - e.g. input subsidies, price support, etc. – at the micro/local levels in selected African countries, to be decided in agreement with DG DEVCO.	31/12/2019	JRC technical reports
													4	Global report on food crises	Preparation of the Global report on food crises in the framework of the Global Network Against Food Crises	31/12/2018	Science-for-policy reports
													5	Food and nutrition security reports	Drafting of food and nutrition security assessment reports or contribution to joint bulletins in the event of crises, including political or natural disaster-related crises and conflicts, which could produce or exacerbate food crises.	31/12/2018	JRC technical reports
													6	Improved food and nutrition security analysis	This item covers several products contributing to the elaboration of improved resilience, food and nutrition security analysis methodologies and processes, as well as JRC support to regional and national information systems on food security and nutrition in DG DEVCO priority countries. It also includes the maintenance of the data infrastructure and tools to maintain the capacity to monitor and assess the food security situation in countries at risk of food crises.	31/12/2019	JRC technical reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7761 - ANTICIPATE JRC.I.2	7023 - FOR-FOODSYS Piloting and testing a food systems mapping tool	In taking the ground work already prepared in the project FOR-FOODVISION (WP2016(P) – 3778), the objective of this project is to pilot, test, and launch a food systems mapping tool. Such a tool should allow to: • Map a current food system and identify the critical linkages within the system and between the food system and other systems • Move from the current 'as is' model towards a 'where we want to be' model taking into account global and national trends and drivers of change • Identify the critical areas for change in the system (i.e. the leverage points) needed in order to move towards a 'where we want to be' model	JRC.I.2 Laurent BONTOUX	9.2.2.a	DEVCO	DEVCO	n/a	AGRI SANTE		01/03/2018 15/05/2019	CON-AA	201901	Food Systems Mapping tool : guidelines of use, methodological aspects and process design	Report summarising the activities, the outputs, the outcomes and the learnings of the development of the food systems mapping tool in 2018, including the output of the 2 workshops and the process of designing the tool + a guidelines on how to use the tool	15/04/2019	JRC technical reports
9.2.3. Climate change, environment, natural resources, and water																
9.2.3.a carry out analysis, help build capacity, and provide data, maps and methodologies on the extent of and vulnerability to climate change in developing countries; inform the preparation and implementation of programmes aimed at climate change adaptation and actions under the global Covenant of Mayors for Climate and Energy, building on the experiences with the EU Covenant of Mayors;																
222 - DRMKC JRC.E.1	292 - RCDFA Risk, Climate and Development Funding Analytics (Extension of WPK Transparent Aid)	This WP covers the core applied R&D activities underlying the EU Aid Explorer (EAE), the web-based corporate tool of the European Commission that tracks development and humanitarian funding by major donors to beneficiary countries. It aims to support the three post-2015 international frameworks on Disaster Risk Reduction (DRR), Sustainable Development Goals (SDGs), and Climate Change (COP21). This Work package will address target F of Sendai for building Funding analytics based on data sources, both existing and under development, which could be considered appropriate in measuring international cooperation in support of DRR such as from the OECD and UN agencies. The WP aims also to advance the know-how needed to provide a more comprehensive picture of funding (including remittances, Foreign Direct Investments etc.) to the beneficiary countries. New methods for measuring the fragmentation and effectiveness of external aid, as well as monitoring EU financing related to the DRR, CC and SDGs, are to be integrated in EU Aid Explorer. The data for funding could also be linked with disaster loss databases making it possible to analyse trends between funding and loss data.	JRC.E.7 Anjula GARG	9.2.3.a	DEVCO	JRC	Ellen Kelly (Policy Officer), HoU, Erica GERRETSEN, Marco Panigalli (HoU), Pierre Charlier (Policy Officer), Michel Bucher	ECHO FPI NEAR	MS EU - Member states EU	01/01/2014 31/12/2019	INS-RS	2	Gap Analysis: funding data for Sendai,SDG,CC,Addis	The report aims to research gaps in funding data which make it difficult to track the funding for SDGs, Sendai, Paris and AAAA. It will include a study of funding data for Remittances, Foreign Direct Investment, and OECD's TOSSD (Gap Analysis: funding data for Sendai,SDG,CC,Addis Ababa Action Agenda AAAA)	31/12/2018	Science-for-policy reports
												3	Annually updated data on state of funding	The data will be updated in EU Aid Explorer for Development, Humanitarian aid, and subject to data availability in deliverable 1, also for Remittances, and Foreign Direct Investments.	31/12/2019	Science-for-policy reports
9.2.3.b monitor, provide scientific advice, develop ICT tools, disseminate information and build capacity for partners in third countries to support multilateral or bilateral agreements on natural capital and sustainable management of natural resources, with a focus on forestry, land, and land use change, soil, biodiversity, ecosystem services, agriculture, air and water, where appropriate in cooperation with relevant international organisations and conventions																
701 - NC-Forest JRC.D.1	503 - ReCaREDD ReCaREDD: Strengthening regional capacities for reporting on mitigation actions of forest sector	The project will contribute to sustainable forest management by enhancing the capacity of existing institutions to report on their mitigation actions in the forest sector (REDD+) and by providing relevant information to policy makers. This project will use the best available knowledge to engage with partner countries to jointly develop forest monitoring techniques and to strengthen national capacities to report on REDD+ challenging activities, such as forest degradation and forest regrowths.	JRC.D.1 Frederic ACHARD	9.2.3.b	DEVCO	DEVCO	Ms Cristiana PASCA PALMER HoU, DEVCO.C.2	CLIMA ENV	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)	13/11/2013 12/11/2018	CON-AA	201801	Technical support to partner countries in Tropics	Scientific & technical support to enhance capacities of developing countries regarding mapping and monitoring of deforestation & forest degradation, and related carbon emissions and sinks (focusing on 10 countries in Sub Saharan Africa, Southeast Asia and South America)	12/11/2018	Training
												201802	Technical assistance to customer DGs	Provision of technical assistance, independent opinion and/or peer review on projects, activities, studies and assessments produced in the context of REDD+ or FLEG with related organisation of expert meetings or workshops	12/11/2018	JRC contributions to policy documents
												201803	Information systems - regional forest observatory	Scientific information systems and databases for regional forest observatories in Eastern Africa and continental Southeast Asia	12/11/2018	Scientific information systems and databases
568 - WEFE Nexus JRC.D.2	2143 - ACE WATER 2 African Center of Excellence Phase 2	Aims at supporting the development of the NEPAD Water African Network of Centres of Excellence in linking research and policy making in the field of transboundary water management. It will enlarge the existing Water Centres of Excellence, currently active in Western and Southern Africa, to Eastern and Central Africa, and facilitate the establishment of a Human Capacity Development Programme addressing junior professional and technician level capacity in the water sector in Africa.	JRC.D.2 Cesar CARMONA MORENO	9.2.3.b	DEVCO	DEVCO	Antoine Saintraint (DEVCO C5)			11/12/2015 31/08/2020	CON-AA	2	2017 Annual Report	JRC technical report describing the activities implemented during 2017	15/02/2018	JRC technical reports
												3	2018 Annual Report	JRC technical report describing the activities implemented during 2018	15/02/2019	JRC technical reports
												4	Final Report	Technical report describing the activities implemented during the implementation period	31/12/2019	JRC technical reports
												6	Regional database Hydro-Climatology Data-Analysis	Technical report describing the Hydro-Climatology Data Analysis	15/12/2018	JRC technical reports
												7	Establishing Common Water Sector Priorities	Technical report describing the Water Sector Priorities in 14 African Countries and Strategy Implementation Plan	15/10/2019	JRC technical reports
4842 - GCAD JRC.D.6	3784 - GLOBES Global Observatories for Biodiversity and Ecosystems Services	This WPK is about the provision of reference information and web services that are supporting the access to knowledge products on global biodiversity and associated development goals that are essential to EU policies on development and biodiversity. More precisely, this WPK will further develop the information tools required to assess, monitor and forecast biodiversity and ecosystem services at the global scale (with a focus on protected areas), help the EU ensure maximum aid effectiveness, and underpin indicator development for Sustainable Development Goals 14 and 15 as well as 17. Overall project results will further update and improve the baseline information and knowledge products sought by the EC and the UN Convention on Biological Diversity (CBD) to assess progress on key targets and support developing countries in establishing their National Biodiversity Strategies and Action Plans (NBSAPs). We will further anchor JRC's support to developing countries through the	JRC.D.6 Gregoire DUBOIS	9.2.3.b	DEVCO	JRC	Philippe MAYAUX	AGRI CLIMA ENV GROW	EEA - European Environment Agency EEAS - European External Action Service UN CBD - UN Convention on Biological Diversity UNDP - United Nations Development Programme UNEP - United Nations Environment Programme (UNEP) WB - World Bank	01/01/2017 31/12/2020	INS-RS	1	Support to the 14th Conference of the Parties of the UN Convention on Biological Diversity	The 14th Conference of the Parties of the UN Convention on Biological Diversity will require from GLOBES to 1) update the country indicators of the Digital Observatory for Protected Areas (DOPA) for the CBD Secretariat; 2) contribute to the Protected Planet Report 2018 published by UNEP; 3) Support to the EU Delegation for and at the COP 14; 4) further develop connectivity indicators and pressure indicators on protected areas.	15/12/2018	JRC contributions to policy documents
												2	Update and further development of the DOPA web services 2018	The web services distributing the reference information underpinning the knowledge products of the Digital Observatory for Protected Areas (DOPA) need to be further developed to allow more frequent, automatic and higher resolution updates when processing data from the UNEP-WCMC, the Red List of Threatened Species, Copernicus, etc., to further support requests from third parties (e.g. BIOPAMA, DG ENV, DG DEVCO, CBD). The web services will be further organized along the covered SDGs (14, 15, 17).	31/12/2018	Scientific information systems and databases
568 - WEFE Nexus JRC.D.2	3888 - WEFE4Dev WEFE Nexus perspectives in developing countries	The WEFE4Dev Work Package links scientific and technical capacity at the JRC on data, modelling and information systems on Water-Energy-Food-Ecosystems (WEFE) in Developing Countries with a particular focus on Africa. By working with regional and international organisations and the African networks of excellence in water sciences, it will facilitate mainstreaming of Nexus policy recommendations and action plans for future investments in EC regional and global policies thus complementing the EC WEFE Nexus Dialogues Programme and providing assistance to the EC Water Diplomacy initiatives. It will provide scenario and trade-off analyses to explore opportunities for sustainable economic growth through an integrative cross-sectoral approach. It will help measure progress by African countries towards the SDGs by assessing the policy impacts across different sectors (energy, food, industry, urban, environment, tourism, ...) taking into account e.g. structural reasons for resource scarcity, increased urbanization and population growth trends, increasing migration, adaptation to climate change, use of clean technologies and non-conventional supply. A cross-disciplinary flagship deliverable will be the report addressing the spatial interdependence of the energy and agriculture sectors and their physical and socio-economic exposure to water and climate in transboundary river basins in Africa.	JRC.D.2 Cesar CARMONA MORENO	9.2.3.b	DEVCO	JRC	Paolo Ciccarelli, Antoine Saintraint DG DEVCO C5	ENV HOME NEAR	FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) AMCOW - African Ministers' Council on Water UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNEP MAP - Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution (United Nations Environment Programme for the Barcelona Convention) UNESCO IOC - United Nations Educational Scientific and Cultural Organization - Intergovernmental Oceanographic Commission	01/01/2016 31/12/2020	INS-RS	201801	e-NEXUS Decision Support Tool	The e-NEXUS Decision Support Tool (DST) will integrate hydrologic, agricultural, climate variability and socio-economic open-source tools to provide integrated development options and scenarios to be considered by African stakeholders. e-NEXUS functionalities will be compatible with the e-Station developed by GMES&AFRICA (WPK id 5013 - in collaboration with unit D.06) and to be installed in African institutions in charge of water-energy-food security-ecosystem sectors as a support to the policy design in the frame of the Africa-EU Partnership Programme.	31/12/2018	Technical systems
												201802	On-line African Atlas on WEFE Cooperation & SDGs	As a support to the definition and implementation of the EC Development policies (DEVCO, EEAS) and based on the African WEFE Data Base, the on-line African Atlas on WEFE Cooperation and SDGs will be a dynamic tool addressed to policy-makers to stress hotspots and cues on the potential disequilibrium in the different WEFE components under different climate variability scenarios, natural resource supply, socio-economic and human demand at River Basin scales in Africa (focus areas: Senegal, Niger, Nile, Congo, Tchad, Zambezi River Basins). This will include an analysis of the remittances financial flow investments on the WEFE sectors. The Atlas will provide GIS layers and cues to feed the development of the EU Migration Inclusion Indexes (WPK id 4828) for an understanding of the root causes of migration.	31/12/2018	Technical systems
												201903	Report "Fairness in access to resources: addressing tradeoffs in water, energy, food and ecosystem security in Africa"	This report will analyse implications for policies, investments and technologies to secure value, fairness and resilience in African countries. It will include a trade-off analysis of impacts on agricultural and energy production in Africa due to e.g. rainfall (and climate) year-to-year variability, irrigation and fertilization management practices. Report findings, conclusions and recommendations will be based on the deliverables coming also from other WPKs (WEFE-Energy, WEFE-Agriculture, WEFE-2030, EC-NEXUS DEV, WEFE-SENEGAL, ACE WATER2).	31/12/2019	Science-for-policy reports
												1	BIOPAMA Reference Information System (RIS)	A set of IT tools supporting EU policies on biodiversity and development cooperation by mapping, collating, analysing, validating and communicating in a systematic and digestible way reference data, methods, tools and knowledge	30/06/2018	Scientific information systems and databases
												10	Protected Area Ecosystem Services	Review of methods for measuring ecosystem services provided by protected areas	30/11/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												11	Open DOPA 1.0	Tools for validating global datasets on species, threats and ecosystems in protected areas. The collected data will allow to assess for the first time key information gaps and address information reliability. A first phase in 2017 will develop a prototype of these tools which will subsequently be rolled out during 2018.	28/02/2018	Scientific information systems and databases
												12	DOPA Analyst 1.0	DOPA Analyst will be developed as a Beta release during 2017-18. Reviewed and updated according to feedback received, DOPA Analyst will further focus on the use of the Copernicus Global Land Services to improve the monitoring of biodiversity and ecosystems services at the global scale. The public release of DOPA Analyst 1.0 should further strengthen support to developing countries which don't have the means to perform locally complicated analyses and will support the objectives of BIOPAMA2.	30/06/2020	Scientific information systems and databases
												2	BIOPAMA Regional Reference Information System RRRIS	A set of regional instances (nodes) of the BIOPAMA Reference Information System, based on a common technology platform, but reflecting the specific geographic context and thematic priorities of each region, namely: Pacific Islands Protected Area Portal Caribbean Gateway Southern African Development Community Trans-Frontier Conservation Area Portal East African Community Regional Reference Information System Central Africa Forest Observatory / Central African Protected Areas Network Portal	30/06/2018	Scientific information systems and databases
												3	State of Protected Areas	Bi-annual reports for the ACP region, compiled using input from each project region on the state of protected areas, using the knowledge base of the BIOPAMA Reference Information System and its regional nodes	30/06/2019	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
4842 - GCAD JRC.D.6	4902 - BIOPAMA 2 Biodiversity and Protected Areas Management in ACP countries, Phase II		JRC.D.6 Stephen PEEDELL	9.2.3.b	DEVCO	DEVCO	Philippe MAYAUX	AGRI CLIMA ENVV	AU COM - African Union Commission COMIFAC - Commission des Forêts d'Afrique Centrale (COMIFAC) Forest commission of central africa IUCN - International Union for Conservation of Nature SADC - Southern African Development Community UN CBD - UN Convention on Biological Diversity	09/06/2017 08/06/2023	CON-AA	4	ACP Protected Areas Database	Reference database of Protected Areas across the ACP region combining information gathered and compiled by BIOPAMA Reference Information System, containing base data, indicators and trends on themes including: Site location, geometry and basic geographic characteristics Key landscape features Socio-economic context Ecosystem Services Pressure and threats Management effectiveness and governance Species occurrence and diversity	31/05/2023	Scientific information systems and databases
												5	BIOPAMA RIS Training	A package of resources and activities to support the technical capacity building objectives of the project, focused on the RIS and its components, namely: Training course materials, Training courses, workshops to be run within stakeholder regions and institutions On-line learning resources To be done through direct training and training-of-trainers	30/06/2018	Training
												6	Management Effectiveness and Governance Assessment	Testing, development and enhancement of the IMET (Integrated Management Effectiveness Toolkit), and the analysis and visualisation of the results of the on-site assessments through the BIOPAMA RIS, presented as a JRC Technical Report to be updated every 2 years	30/06/2019	JRC technical reports
												7	BIOPAMA Annual Project and Technical Report	Technical report summarising the developments of the BIOPAMA Reference Information System and its links to other reference data sources and systems, produced annually. The administrative aspects will be presented annually in line with the annual Steering Group Meeting (expected in September each year), and with an annual public technical report at the end of each calendar year.	31/05/2023	JRC technical reports
												8	Information Management for Protected Areas	An up-to-date, independent source book on the state of the art in information technology for conservation, planning and reporting.	30/06/2020	Books and monographs with JRC editorship
												9	Management Effectiveness & Governance	Review of methods and indicators for assessment of protected areas management and governance, including IMET and equivalent tools	30/06/2019	Article contribution to periodicals or to conference proceedings listed in SCOPUS
568 - WEFE Nexus JRC.D.2	4904 - WEFE SENEGAL Managing the Water-Energy-Food Nexus in the Senegal River basin	The Senegal River Basin Development Authority (OMVS, in French) is an organisation grouping Guinea, Mali, Mauritania and Senegal with the purpose of jointly managing the Senegal River and its drainage basin. With the development of important activities in processing industry, water, agriculture and energy, the OMVS aims to promote a sustainable development at economic and human level to stabilise migration in the region. Key issues linked to environmental degradation and water management in the river basin will be considered to identify and implement concrete mitigation and adaptation measures through the integration of a NEXUS Water-Energy-Food Security Dialogue developed at the scale of the river basin. The project aims at fostering sustainable resource management through public policies based on scientific and technical knowledge by the development of data-based products and visualisation tools for policy makers in the water domain but also on other related sectors as Energy and Food Security of the NEXUS. This is fundamental to feed efficient and coherent dialogues among the stakeholders in a transboundary river basin like the Senegal River Basin.	JRC.D.2 Cesar CARMONA MORENO	9.2.3.b	DEVCO	DEVCO	Paolo CICCARELLI (DEVCO), Marta MOREN ABAT (ENV)	AGRI ENER ENVV	AMCOW - African Ministers' Council on Water NEPAD - OST - New Partnership for Africa's Development (NEPAD)	01/07/2017 31/12/2020	CON-AA	201801	Development of a Prototype of the Decision Support	Development of a Prototype of a Decision Support System for Environmental Monitoring through the detection of environmental trends and anomalies at the river basin level. The System will contribute to the monitoring of the River Basin Organisation priorities: Water Quality, Environmental Degradation, Impact of the Climate Change and Variability on the water resources and associated economics activities (agriculture, industry, energy production), water accessibility and health of the population.	31/12/2018	Scientific information systems and databases
												201901	DSS for Improvement the WEF NEXUS management	Development and implementation of a Decision Support System (DSS) for Environmental Monitoring through the detection of environmental trends and anomalies at the river basin level. The System will contribute to the monitoring of the River Basin Organisation priorities: Water Quality, Environmental Degradation, Impact of the Climate Change and Variability on the water resources and associated economics activities (agriculture, industry, energy production, ...), water accessibility and health.	31/12/2019	JRC technical reports
												202001	WEFE Case Studies (High Mail, Fouta Djallon, Delta)	The case studies examine how we can optimise water infrastructure (built and natural) to sustainably meet the needs across the water, energy and food sectors, looking at new innovations, institutional arrangements, policy, decision making and financing.	31/12/2020	JRC technical reports
564 - CESAR JRC.D.6	5013 - GMES&Africa Global Monitoring of Environment and Security in Africa	The Land Resources Monitoring (LRM) Unit of JRC has been involved from the very beginning in the process launched by the EC in the late '90ies" to support Africa in the use of Earth Observation Technologies for sustainable development. Upon demand of DEV and AIDCO services (now DEVCO), the JRC was particularly active in the conception and the implementation of the PUMA (2000), AMESD (2005) and MESA (2012) projects. The implementation of the "GMES&Africa Action Plan" is now concretely starting, with this 1st "Pan-African GMES&Africa project" which is the natural evolution of the 18 years' PUMA-AMESD-MESA process, now to be extended also to the Northern Africa countries. The focus of the Project will be on Water resources, on Coastal and Marine resources and on Sustainable Management of Natural Resources and its The follow-up is carried out in support to and in close coordination with DEVCO, GROW, the EU Delegations in Africa and EUMETSAT. Beyond providing the necessary advice and technical support to the EU services and to ensure	JRC.D.6 Marco CLERICI	9.2.3.b	DEVCO	DEVCO	Zdenka DOBISOVA	JRC	ACP Sec - African Caribbean and Pacific (ACP) Secretariat - The Secretariat of the African, Caribbean and Pacific Group of States AMCOW - African Ministers' Council on Water ARC - AGRHYMET Regional Centre (ARC) AREC - African Regional Economic Communities	01/01/2017 31/12/2020	CON-AA	1	eStation 2.0 Evolution	The « Environmental Station » (eStation) is a tool conceived by the JRC in the frame of the AMESD and MESA projects. Its role is to process automatically the data disseminated through the EUMETSAT broadcasting system in order to assist the thematic expert in monitoring the environment and in the writing of their reports. Within GMES&Africa it will be maintained and further developed, for including the EO products made available from Sentinel constellation.	31/12/2018	Scientific information systems and databases
												2	Training	Training activities, to be carried out by the JRC both in Europe (Ispra and other location according to the needs) and in Africa, will focus on the use of the eStation and the use of low and medium resolution satellite data managed by the system. On aspects related to other data than those indicated above and other informatic systems than the eStation (for instance high resolution data for forest inventories), the JRC is willing to provide support.	31/12/2019	Training
568 - WEFE Nexus JRC.D.2	5442 - EC NEXUS-DEV Science supporting the EC - WEFE Nexus Dialogues	The EC NEXUS DEV competitive project is inscribed in the framework of the DEVCO project on "EC Nexus Dialogues" Phase I (2016-2018). The project will implement research studies, building up teams of nexus experts from the countries/regions to support "EC Nexus Dialogues" Phase I and to guide Phase II i.e. leveraging of investment projects. The specific objective is to support scientifically the EC nexus processes and dialogues in 2 of the selected 5 regions: Africa (Nile, Niger, Senegal and SADC) and the Neighbourhood (with particular focus on the MENA region) leading to the establishment of scientifically sound nexus frameworks. In this context, the following activities will be carried out: • A Position Paper/Policy Brief that explains the symbiotic relationship between the Water-Energy-Food Nexus and the SDGs. This paper should be complementary to the work that will be implemented by the JRC institutional project (WEFE4Dev). Based on a close collaboration with the key international organisations working in this domain (e.g. IUCN, IWA, UNECE, IIASA, the "Geneva Nexus Group"), this paper will provide a state of the art, study cases and lessons-learned, technical analysis, ... of the WEFE Nexus relevant and directly linked to the SDG goals and their targets and how the latter would	JRC.D.2 Cesar CARMONA MORENO	9.2.3.b	DEVCO	DEVCO	Antoine SAINTRAINT	ENV NEAR	IUCN - International Union for Conservation of Nature UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE	01/01/2017 31/12/2019	CON-AA	201702	Research support to Africa NEXUS dialogues	Short-term research support following requests from regional nexus dialogues (to be co-defined by DEVCO and JRC in collaboration with GIZ and partners). This activity will be seeking the collaboration of JRC partners such as the NEPAD CoE networks and others regional and international networks. The JRC will provide relevant WEF information and indicators that will feed into the policy-making debate and will be used to inform member states, partner countries and regional organisations.	31/12/2018	JRC technical reports
												201703	Research support to MENA NEXUS dialogues	Short-term research support following requests from MENA nexus dialogues (to be co-defined by DEVCO and JRC in collaboration with GIZ and partners). This activity will be seeking the collaboration of JRC partners such as the NEPAD CoE networks and others regional and international networks. The JRC will provide relevant WEF information and indicators that will feed into the policy-making debate and will be used to inform member states, partner countries and regional organisations.	31/12/2019	JRC technical reports
337 - CoM JRC.C.2	6363 - CoM East Covenant of Mayors for Eastern Countries	This Work Package contributes to the adaptation of the European initiative "Covenant of Mayors" (CoM) to the East Neighbouring countries (Georgia Azerbaijan, Armenia, Ukraine, Moldova, Belarus) and the successful implementation in the region. The purpose is to provide these countries and the project beneficiary cities with specifically designed technical and scientific assistance, analysis and input to support the project implementation, including Sustainable Energy Action Plans guidelines, implementation and monitoring guidelines (addressing mitigation of climate change, adaptation to climate change & access to energy). The initiative will be closely monitored and an annual progress report will be published with aggregate data on CO2 emissions reductions and local climate action policies to identify the efficacy and results.	JRC.C.2 PAOLO BERTOLDI	9.2.3.b	NEAR	NEAR	n/a	CLIMA ENER FPI		01/09/2017 31/08/2020	CON-AA	1	Annual evaluation of the CoM East initiative	Production of an annual report to summarize the results achieved and the lesson learned in the CoM East initiative up to September 2018, based on SEAP and SECAPs. The main CO2 emission and sustainable energy indicators will be presented based on SECAPs and Monitoring Reports. The report will also cover adaptation and access to energy. Best practices in policies (mitigation, adaptation and access to energy) by cities will be identified.	31/12/2018	Science-for-policy reports
												2	Analysis of the submitted SECAPs	The JRC evaluate the final SECAPs as submitted officially by the cities, including Baseline emission inventories, climate mitigation and adaptation. A report on the analysed SECAPs will be prepared	31/12/2018	JRC technical reports
												3	Revision of the monitoring guidelines	Under this task the monitoring guidelines of the SECAP implementation will be developed to include adaptation and access to energy. Then by using these guidelines the monitoring of the SECAP implementation will be carried out	30/06/2018	JRC technical reports
												4	(Methodological) Adaptation of the CoM East Guidebook to the Global Covenant of Mayors	With the methodological developments in the frame of the Global Covenant, there is the need to adapt the CoM East Guidebook to the Global harmonised methodology where possible and at the same time to preserve the regional specificity in relation to climate actions.	30/09/2018	JRC technical reports
9.2.4.Energy																
9.2.4.a map out and monitor activities, develop geographical information system tools, support sustainable energy planning and the implementation of the Covenant of Mayors, share best practice and build capacity in support of international, bilateral, and regional energy cooperation initiatives, including on energy efficiency and renewable energy.																
337 - CoM JRC.C.2	261 - CoM South Covenant of Mayors South	The project aims to adapt the "Covenant of Mayors" (CoM) to the ENPI South Mediterranean Partner Countries. The purpose is to provide the ENPI South countries and the project beneficiaries with technical and scientific assistance, analysis and input to support the project implementation, including Sustainable Energy Action Plans guideline and implementation and monitoring guidelines. The WPK contributes to the achievement of the project's objective by supporting the development of the capacities of local authorities in the region to formulate and implement more sustainable local policies, such as those implied by joining the CoM and developing the related SEAPs. The WPK will also contribute to making national authorities more aware of involvement of cities in policy issues such as local waste and water management, urban mobility and transport, local energy use. In the WP the following activities will be undertaken: adapting the existing methodology and tools; evaluation of SEAPs, feedback to the Covenant Cities, the Project and the EC; monitoring of the CoM South implementation; providing technical help desk service; developing methodology. In the WP the following	JRC.C.2 PAOLO BERTOLDI	9.2.4.a	DEVCO	DEVCO	DI PIETRANTONIO Nicola (NEAR) <Nicola.DI-PIETRANTONIO@ec.europa.eu>	ENER		18/12/2012 31/03/2018	CON-AA	201801	SEAP implementation monitoring	Under this task the monitoring guidelines of the SEAP implementation shall be developed. Then by using these guidelines the monitoring of the SEAP implementation shall be carried out.	31/01/2018	Science-for-policy reports
												4	Overall assessment of the CoM South	Overall assessment report based on the SEAP submitted and evaluated, type of measures implemented, achieved and predicted CO2 and energy savings, best practices, multi-level governance	15/03/2018	Science-for-policy reports
337 - CoM JRC.C.2	4480 - CAP4DEV Mapping electrification impacts and sustainable energy planning for African cities	The JRC will support DEVCO's Electrifi initiative and will extend the Covenant of Mayors work on sustainable energy planning to African cities. There are 2 components: 1) Creating a web-based application to show the results and status of the Electrifi projects in a geographically-based context. 2) Supporting the implementation of the Covenant of Mayors (CoM) in Africa.	JRC.C.2 Sandor SZABO	9.2.4.a	DEVCO	DEVCO	Felice Zaccheo	CLIMA CNECT		01/03/2017 28/02/2020	CON-AA	1	Creating a web based application for the Electrifi	JRC will support the selection process within the Electrification Financing Initiative (Electrifi). DEVCO requires GIS-based information related to rural electrification projects on a regional scale. The JRC will contribute with its expertise in various energy technologies, GIS data analysis in the energy/electricity sector.	30/06/2018	Scientific information systems and databases
												2	Covenant of Mayors: sust. energy African Cities	The JRC supports the implementation of the Covenant of Mayors (CoM) in Sub-Saharan Africa with adapted methodologies and reporting tools. The JRC will participate in the advisory board of the CoM for Sub-Saharan Africa to share experience from the Covenant EU-28, ENPI East and ENPI South. It is assumed that up to 6 cities of the region will join the CoM.	30/06/2018	Science-for-policy reports
9.2.5.Horizontal policies: aid effectiveness, transparency and policy coherence																

JRC 2018 - 2019 DETAILED WORK PROGRAMME																	
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category	
9.2.5.a develop methodologies, indicators and ICT tools, and carry out macro and microeconomic analyses of development issues in support of the agenda for change, policy coherence for development and aid effectiveness; focus on measuring the impact of EU aid.																	
222 - DRMKC JRC.E.1	3380 - DEVCOAA 2016-17 DEVCO AA 2016-17	EU Aid Explorer (formerly TR-AID) is a web based corporate tool of the European Commission (https://euaidexplorer.ec.europa.eu). It has been developed with the purpose of sharing external assistance data amongst donors, beneficiaries and other stakeholders in the world. The tool is continuously being extended to add further functionality and data to meet the needs of the different stakeholders. The project focuses on aid transparency, accountability, aid effectiveness, coordination amongst donors, and fragmentation of aid. It is vital to note that improving transparency, information and accountability are core principles for the effective use of development finance.	JRC.E.7 Anjula GARG	9.2.5.a	DEVCO	DEVCO	Erica GERRETSEN (HoU), Ellen Kelly (Policy Officer)	ECHO FPI NEAR	MS EU - Member states EU	09/06/2017 08/12/2018	CON-AA	1	Further developed EAE to meet SDG17	Report on implementation of the AA and its completed tasks. Tasks include developments in the EU Aid Explorer to accommodate the requirements of meeting SDG goal 17, target: finance. The deliverable will be delivered according to the schedule in the AA.	30/11/2018	JRC technical reports	
222 - DRMKC JRC.E.1	6782 - ECHO AA 2018-2019 ECHO AA 2018-2019	EU Aid Explorer (formerly TR-AID) is a web based corporate tool of the European Commission (https://euaidexplorer.ec.europa.eu). It has been developed with the purpose of sharing external assistance data amongst donors, beneficiaries and other stakeholders in the world. The tool is continuously being extended to add further functionality and data to meet the needs of the different stakeholders. The project focuses on aid transparency, accountability, aid effectiveness, coordination amongst donors, and fragmentation of aid. It is vital to note that improving transparency, information and accountability are core principles for the effective use of development finance. The Integrated Analysis Framework (IAF) of ECHO, developed and piloted in 2013 following an internal process review of ECHO's needs-based decision making, is an integrated annual exercise leading to the preparation of Humanitarian Implementation Plans and prioritisation of countries for the WWD annual funding allocation (i.e. ECHO's humanitarian assistance budget allocations). The Integrated Analysis Framework website, called IAFPortal (http://iafportal.jrc.ec.europa.eu) was developed and launched under the DRM2014 (AA33522) arrangement. The system was used in the Annual Aid Strategy cycle	JRC.E.7 Anjula GARG	9.2.5.a	ECHO	ECHO	n/a	DEVCO	OECD - Organisation for Economic Co-operation and Development (OECD) UN OCHA - United Nations, Office for the coordination of Humanitarian Affairs	01/12/2018 30/11/2019	CON-AA	201901	Final report	Report on implementation of the AA and its completed tasks. These tasks include adding any new functionalities and tailoring existing ones, as defined by DG ECHO, in the EU Aid Explorer, and for IAF (Integrated Assessment Framework)	30/11/2019	JRC technical reports	
10. A Union of democratic change																	
10.1. Methodological support for better regulation																	
10.1.a Competence Centre on Modelling - contribute to high-quality impact assessments of policy proposals and policy options, and promote a responsible use of modelling at EU and Member State level;																	
6039 - CC-MOD JRC.1.1	2303 - Corporate Modelling Corporate Modelling Inventory & Knowledge Management System	The objectives of the Corporate Modelling Inventory & Knowledge Management work package are to develop and operate a Commission-wide knowledge management tool for modelling, and to operate the Community of Practice on Modelling. The Corporate Modelling inventory - MIDAS - allows anyone on the Commission network to find models in use in any Commission Service for policy support, and to assess their (re-)use for specific policy purposes. The models reported in MIDAS are interlinked, as they answer complex questions, in particular for activities like ex-ante Impact Assessments. MIDAS captures these interdependencies, and allows to identify synergies early in the process, which leads to greater efficiency and better results for policy making. Through access to related data, past policy contributions and related publications, MIDAS furthermore enhances the transparency of models and model results used for policy making, and our understanding of the ongoing support within and across different domains. The work package is also responsible for the day-to-day management of the Inter-Service Group on Modelling Inventory (ISG-MI). The ISG-MI is the governance body for MIDAS in which 23 Commission Services are represented. This work package will build on the ISG-MI to create a Community of Practice on Modelling, which will be an EC-wide network for the exchange of modelling-related knowledge. By organising seminars, workshops, and training to policy makers and modellers, the work package increases the capacity in the Commission to a transparent and more coherent use of modelling in EU policy making. The establishment of the corporate modelling inventory & knowledge management has been a direct result of the recommendations by "Mutualisation of Knowledge" report, and the "Reflection Paper on Information Management". As such, the work package is a core component of the Competence Centre	JRC.1.1 Nicole OSTLAENDER	10.1.a	SG	JRC	Mona BJORKLUND (SG.C2)	AGRI CLIMA CNECT COMP DEVCO DIGIT ECHO EMPL ENER ENV EPSC ESTAT FISMA GROW HOME MOVE NEAR REGIO RTD SANTE TAXUD TRADE			01/01/2015 31/12/2019	INS-RS	201801	Report on the ISG-MI and Community of Practice	The WPk provides the secretariat to the Inter-service Group on Modelling Inventory (ISG-MI), facilitates the Community of Practice on Modelling, and discusses and interacts with other relevant Commission-wide fora (e.g., the Impact Assessment Working Group) to promote a coherent use of modelling in EU policy making. This report summarizes the activities conducted in 2019.	22/12/2018	JRC technical reports
													201802	MIDAS Corporate 2018	The evolution of the corporate modelling inventory towards open science for better regulation and knowledge management. This will include a module to support the Better Regulation Guidelines and Toolbox, and the further integrate MIDAS into the existing EC infrastructure, in particular the CELLAR of the Publications Office. This will also include the coordination of information about the models in use within the different DGs, the Quality Assurance of the inventory, and information provided by the operational CC-MOD.	22/12/2018	Scientific information systems and databases
													201803	Ad-hoc support	Cross-cutting activities and services to help the JRC implement its work programme and strategy	31/01/2018	JRC technical reports
													201901	Report on the ISG-MI and Community of Practice	The WPk provides the secretariat to the Inter-service Group on Modelling Inventory (ISG-MI), facilitates the Community of Practice on Modelling, and discusses and interacts with other relevant Commission-wide fora (e.g., the Impact Assessment Working Group) to promote a coherent use of modelling in EU policy making. This report summarizes the activities conducted in 2019.	29/03/2019	JRC technical reports
													201902	MIDAS Corporate 2019	The evolution of the corporate modelling inventory towards open science for better regulation and knowledge management. This version will include an update and extension of the Better Regulation Guidelines and Toolbox module, the exposure of MIDAS as machine readable content to other COM Services, and a module on transparency. This will also include the coordination of information about the models in use within the different DGs, the Quality Assurance of the inventory, and information provided by the operational CC-MOD.	20/12/2019	Scientific information systems and databases
6039 - CC-MOD JRC.1.1	3812 - Baseline Scenarios Transparency and coherence of baseline scenarios for EU long-term integrated policy assessments	The objective of this Work Package is to improve the transparency, quality and consistency of baseline scenarios used for the policy modelling at the Commission. In close collaboration with modelling teams and the relevant policy DGs, currently used baseline scenarios in the modelling support for policy will be mapped and compared across models. Based on insights gained from the analysis, recommendations will be put forward that aim at improving the quantification of evidence for EU policy making.	JRC.1.1 Eckehard ROSENBAUM	10.1.a	SG	JRC	Stephen White (DG ENV.A.2) stephen.white@ec.europa.eu; Viviane Andre (DG ENV.A.2) viviane.andre@ec.europa.eu;	ENV EPSC ESTAT GROW SG	EEA - European Environment Agency OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2016 31/12/2019	INS-RS	2018001	Development of harmonised baseline scenarios	Jointly with I.2., modelling teams and relevant policy DGs, a harmonised baseline scenarios will be developed for a number of policy areas. Among others, this deliverable will contribute to the development of a post-2016 EU Reference Scenario.	20/12/2018	Science-for-policy reports	
												2018002	Report on workshop with "Community of Experienced"	An interactive workshop with the community of those who have experience in linking qualitative and quantitative research, to collaboratively identify ways of merging the respective methodologies. The results will be compiled in a report.	20/12/2018	Science-for-policy reports	
												2019001	Implementation and testing of baseline scenarios	Implementation and testing of alternative baseline scenarios using a suitable set of models with a view to examine the implications of different assumptions for key variables such as population trends or energy prices for trends in GDP growth, energy use and emissions.	20/12/2019	Science-for-policy reports	
6039 - CC-MOD JRC.1.1	5029 - MQandSA Quality, transparency and sensitivity analysis of models	The aim of this work-package is to help improving the quality and transparency of models that are being used for EU policy making. This work package organises scientific reviews of the model quality and transparency. The model review is done by external experts with involvement of the Commission staff. The selection of models to be reviewed is done in close collaboration with the Inter-Service Group on Modelling Inventory and the modelling teams. Each model review will produce a report about the model quality and transparency. The work package also provides services and tools related to sensitivity analysis and uncertainty quantification. These tools are increasingly employed by practitioners in any field of science for the assessment, validation and verification of simulation models and computer codes in the presence of uncertainty. The JRC is world leader in this subject, contributing with its competence to the methodological development and the diffusion of the discipline worldwide. The objective is to keep track of all scientific advancements in the field of Sensitivity analysis, contribute to this advancements with new methods (research), and to assist, guide and educate JRC staff (training) and other DGs of the European Commission (policy support and training) in the set up and execution of sensitivity analyses, and facilitate the acquisition of skills. The workpackage will provides ad-hoc support to Policy DGs on model quality assurance. In the impact assessment guidelines the Secretariat General (SECGEN) recommends the use of mathematical models and their quality assurance. Sensitivity analysis is recommended as a tool for quality assurance in the toolboxes of the impact assessment guidelines.	JRC.1.1 Daniel ALBRECHT	10.1.a	SG	JRC	Mona BJORKLUND HARRATI	ENER REGIO			01/01/2017 31/12/2019	INS-RS	MQSA100	Sensitivity analysis of JRC models	In collaboration with different JRC units, Sensitivity Analysis (SA) will be used to help improving the quality of JRC models. The field of application of the models may extend from the world of economy to engineering, or to environmental science.	31/12/2018	Science-for-policy reports
													MQSA101	Summer School on Sensitivity Analysis 2018	This is the tenth summer school organized by the JRC since 1999. Summer schools on sensitivity analysis are organized every two years to attract students and researchers worldwide. The number of participants is kept below 40 to allow better interaction between lecturers and students. The school lecturers are JRC staff as well as experts from academia that belong to the JRC scientific network	31/12/2018	Training
													MQSA102	Quality, transparency and coherence in model-use for policy making	This report summarises the key findings of the Competence Centre on Modelling and the Community of Practice on Modelling. These findings are formulated as actionable recommendations to further enhance the quality, transparency, and coherence of modelling and model use for policy making.	31/12/2018	Science-for-policy reports
													MQSA103	Report on the review of models	Model quality and transparency are important for the credibility of EU policy making. This report contains the findings of the panel of experts that reviewed selected models. Candidate models to be reviewed in 2018 are LUISA (Unit JRC.B.3 Territorial Development) and LISFLOOD (Unit JRC.D.2 - Water and Marine Resources Unit).	30/11/2018	Science-for-policy reports
													SAMO204	Support - Lab. of Interoperability of Smart Grids	The work package will contribute to the upgrading of the methodology of design of experiments currently being devised in the laboratory of interoperability of smart grids. This will optimize the execution of simulations and real experiments.	31/12/2018	JRC technical reports
													SAMO209	Training course - sensitivity analysis to EC staff	This training course will give an overview of the field of sensitivity Analysis to a selected number of EC colleagues that need in their daily activities the use of computer codes with uncertainty in their inputs. Practical, hands-on training will also be given in the course.	31/12/2018	Training
													SAMO211	Methodological advances in Sensitivity Analysis	Following the review of RHOMOLO and gas supply models - made in collaboration with REGIO.B.3 and JRC.C.3, new sensitivity analysis methodologies can be developed. One scientific journal article on methodological advances in sensitivity analysis will be published.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
													SAMO212	Handbook on Sensitivity Analysis	Syllabus (2017) will be completed and converted in a multi-authored handbook with first principles on Sensitivity Analysis (Sensitivity Analysis), including case studies from different areas of science, research and industry. The handbook will be written both with contributions from JRC staff and external experts in Sensitivity Analysis. Wiley is a priori the most likely publisher.	31/12/2018	Books and monographs with JRC editorship
		Multi-Criteria Evaluation builds on formal modelling techniques serving the purposes of decision and policy making; in the policy cycle, it refers to the policy formulation step. When a public policy needs to be implemented (at a European, National or regional level), there is a need of comparing different options and valuating and evaluating them (ex-ante) to assess their social attractiveness. The main achievement of Social Multi-Criteria Evaluation (SMCE) is the fact that the use of various evaluation criteria has a direct translation in terms of plurality of values and dimensions used in the evaluation exercise. SMCE accomplishes the goals of being inter/multi-disciplinary (with respect to the research team), participatory (with respect to the community) and transparent (since all criteria are presented in their original form without any transformations in money, energy or whatever common measurement rod). Such a focus requires the highest academic quality, deep knowledge of the state-of-the-art in the field, and the ability to look at prevailing conceptual models in a critical but constructive way.										1	Social multi-criteria evaluation for ex-ante impact assessment	Commission Impact Assessment explicitly considers several objectives e.g. effectiveness and efficiency; the one of fairness should also be included. Thus a multi-dimensional framework such as social multi-criteria evaluation is needed. Questions to be answered are: in impact assessments, is it technically feasible for the Commission (or a support study) to assess the likely distributional impacts of its proposals? How can the Commission integrate a plurality of views into its policies in a coherent and transparent manner (coherence and transparency being key BR requirements)?	31/12/2018	Science-for-policy reports	
												2	Evaluation of large-scale policies	While till now SMCE has been mainly used in specific project evaluation analyses (e.g. environmental issues localized in specific geographical areas), its multi-dimensional approach could be used in more general policy domains where the plurality of views (e.g. concerning the social aversion towards a given degree of inequality) and the multiplicity of criteria for assessing public policy objectives could be considered together in a coherent and transparent manner. As a first step, a comprehensive evaluation of a recent EU large scale policy will be developed as an illustrative example	31/12/2018	Science-for-policy reports	

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Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
6039 - CC-MOD JRC.1.1	5240 - SMCE Social Multi-Criteria Evaluation of Policy Options		JRC.1.1 Giuseppe MUNDA	10.1.a	SG	JRC	Mona BJORKLUND HARRATI	DEVCO ENER ENV EPSC HOME REGIO	Tech Serv - Member States and their Technical Services/type approval authorities	01/01/2017 31/12/2019	INS-RS	3	Training courses on the use of social multi-criteria evaluation for ex-ante impact assessment	Three training courses can be organised, one in 2017, one in 2018 and one in 2019, in Brussels. The main objective is to show to policy officers of the various DGs, the potentialities of SMCE for ex-ante impact assessment. Main topics: A brief overview of Cost-Benefit Analysis Introduction to Multi-Criteria Evaluation Social Multi-Criteria Evaluation Structuring a SMCE process Preference Modelling in SMCE The Issue of Consistency: Lessons Learned from Social Choice Literature Real-world examples	31/12/2019	Training
												4	Development of a computer model helping the framing of real-world policy problems.	The importance of mathematical approaches in SMCE is their ability to allow a consistent aggregation of the diverse information (economic, social, environmental, etc.). Although various multi-criteria software packages exist, surely there is room for a more comprehensive approach in SMCE, where various mathematical developments have not been implemented yet. Moreover an EC on line computer model might make the access to this resource easy and free, allowing its use also in developing countries.	31/12/2019	Scientific information systems and databases
10.1.b Competence Centre on Microeconomic Evaluation - provide technical advice, methodological support, specialised training and exchange on counter-factual impact evaluations;																
603 - CC-ME JRC.1.1	6390 - CC-ME ES CC-ME Evaluation Support	This work-package covers the core mission of the Competence Centre on Microeconomic Evaluation: variety of support activities on causal impact evaluation for different DGs for which no competitive agreement is in place. These activities foster the awareness, knowledge, data collection and implementation of causal impact evaluation and will be tailored to the specific needs and interests of currently five DGs (DG EAC, DG HOME, DG NEAR, DG DEFCO and the to be DG SRSS). Other DGs interested in this service in the future will be covered by this work-package as well. In particular activities will be centered around policies for which causal impact evaluation is sought, and range from advisory activities guiding and supervising external evaluation, providing support and expertise on data collection as well as providing expertise on the conduction of causal impact evaluation. The activities will support DGs to meet evaluation requirements stated in the 'Better Regulation Package'.	JRC.1.1 SYLKE SCHNEPF	10.1.b	JRC	JRC	n/a	DEVCO EAC HOME NEAR SG	WB - World Bank	01/01/2018 31/12/2018	INS-RS	1	Support activities for DGs EAC, HOME, DEFCO, NEAR, SRSS	The main deliverable of this workpackage covers a huge variety of service supports, like participation in interservice consultations and advisory boards, supervising outsourced evaluations of DGs policies, providing support and expertise on data collection and advisory activities for the implementation of causal impact evaluation (CIE) for DGs EAC, HOME, DEFCO, NEAR and SRSS. These are DGs with which CC-ME is in the process of or currently providing service support. In addition, other interested DGs can be covered within this workpackage.	31/12/2018	JRC contributions to policy documents
												2	Workshop on CIE for policies	For DGs interested, a one day workshop will be organised on the value added of causal impact evaluation for the specific content area of the DG. These workshops will include the following three main components: i) training in counterfactual impact evaluation, ii) the value added of counterfactual impact evaluation for the DG's policies and iii) existing causal impact results of DGs policies. The workshop will be shaped to the interested DG's needs. It is aimed to have a presentation by a representative of the Scrutinyboard to discuss criteria of good impact evaluation.	31/12/2018	Training
												3	Knowledge generation using causal impact evaluation for interested DGs	For those DGs interested, knowledge generation using causal impact evaluation will be provided. For example, for DG HOME voting behaviour and geographical proximity to refugee centres will be examined for Italy.	31/12/2018	Science-for-policy reports
603 - CC-ME JRC.1.1	6462 - CC-ME.ADE CC-ME Analysis, Data, Evaluation	This work-package contains the core institutional activities of the Competence Centre on Counterfactual Evaluation, that are needed to deliver on its stated goals and services. These activities will be synergistic with respect to the support work foreseen under the remaining work-packages tailored to the needs of SG or policy DGs. (CC-ME.BR-REFIT, -GROW, -SANTE, -REGIO, -RTD, -CRIE V) In particular they will be centered around important policy questions, with special reference to counterfactual impact evaluation methods and applications to labour, education, inequality, migration, health, competitiveness, growth. Many of the foreseen output reports are relevant for the economic as well as social impact of policies of the European Union. Organisation of Conferences and communities of practices (CoP) are foreseen to complete the institutional activity.	JRC.1.1 ENKELEJDA HAVARI	10.1.b	SG	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	Education, employment, pensions and health	This deliverable includes a number of studies related to education, labour market outcomes and health conditions of individuals. It also includes studies that look at the impact of reforms in education (e.g reforms targeted to students of different ages), labour market (e.g programmes targeted to youth), pension and health systems in different countries.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												3	Migrants, refugees, conflicts and security	The number of immigrants and refugees in the European countries has rapidly increased in the recent years. It becomes then crucial to analyze on one side how immigrants integrate in the hosting countries in terms of employment outcome, health and access to housing. On the other side it is also important to evaluate the impact of immigration on the hosting country such as natives' employment outcomes, voting behavior, crime and security. This deliverable also includes a series of studies on immigration, security and the impact of conflicts.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												4	Regional studies and policy interventions at firm level	This deliverable includes a series of studies on the impact of interventions on firm performance (productivity, innovation, R&D), impact of regulatory measures on outcomes defined at the regional or local level (regional studies), and further studies on trade, innovation, research policy.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												5	Counterfactual Methods for Policy Impact Evaluation (COMPIE) conference 2018	The aim of the conference is to bring together policy makers and researchers to discuss developments in counterfactual methods applied to the impact evaluation of policy interventions, with a focus on EU employment and social policies. It serves as a bridge between policy makers and researchers working in the area of policy evaluation.	31/12/2018	JRC technical reports
												6	Communities of Practice (CoP) and networking activities	This deliverable foresees the organisation of events such as communities of practice that include training sessions within the JRC, the European Commission and more broadly.	31/12/2018	Training
												7	Ad-hoc support	Cross-cutting activities and services to help the JRC implement its work programme and strategy	31/12/2018	JRC technical reports
												603 - CC-ME JRC.1.1	6463 - CC-ME.BR-REFIT CC-ME Better regulation and REFIT	The objective of this WP is to deliver advice on technical issues associated with ex post evaluation of interventions in line with the "Better regulation for better results - An EU agenda". This will have a particular focus on REFIT initiatives. In particular, this work-package will include: A. Advice to DGs on technical issues associated with ex post evaluation of interventions. B. Participation in the steering group of CIE analysis on selected REFIT evaluations and other ex post quantification of impact under the "Better regulation agenda". C. Training on ex post analysis (data and methods) for DGs in collaboration with SG. This work-package will be further developed in collaboration with Unit SG.DSG1.C.1. D. Ex-post evaluation of two specific EU Directives. E. Contribution to the 2018 EU Justice Scoreboard	JRC.1.1 MASSIMILIANO FERRARESI	10.1.b
2	Participation in the steering committees for CIEs	Participation in the steering committees of CIE analysis for REFIT evaluations and other ex post quantification of impact under the "Better regulation for better results - An EU agenda". In particular a feasibility study for ex post CIE will be produced.	31/12/2018	JRC contributions to policy documents												
3	Training on CIE analysis (data and methods)	To provide training to all policy DGs on ex-post evaluation, and on the needed conditions for this to be feasible and effective in the EU policy cycle. These conditions include: -data availability, linkage and collection; -presence of proper competencies in house and in the private sector; -needed policies for an efficient market for providers of CIE; -links and proper timing between evaluation and policy planning. This training will be yearly and delivered in Brussels.	31/10/2018	JRC contributions to policy documents												
4	Evaluation of the Late Payment Directive	The Late payment Directive (2011/7/EU), introduced a stricter regulation on delays in payments both on Business to Business (B2B) and Government to Business transactions (PA2B). The CC-ME.SG will focus on PA2B transactions in order to evaluate, by means of CIE methods, whether such a Directive helped firms to increase their economic performance.	30/06/2018	JRC technical reports												
5	Evaluation of the Airport charges Directive	The Airport Charges Directive (Directive 2009/12/EC), was the first EU intervention to set a common framework for the regulation of the main features of airport charges. The Directive applies to all EU airports (including NO and CH) with passengers exceeding, in a given year, 5 million passengers (or the largest airport in MS with no airport exceeding this threshold). The CC-ME.SG will focus on the Directive in order to evaluate the impact on the level of airport charges by means of CIE methods.	31/12/2018	JRC technical reports												

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
												6	Contribution to the 2018 EU Justice Scoreboard	Evaluation of the impact of judicial reforms, such as the optimisation of the judicial map, on the efficiency of the justice system and eventually on firms economic performance. The analysis will be focused on some EU countries: Italy, Portugal and Spain.	31/05/2018	JRC technical reports
603 - CC-ME JRC.1.1	7044 - CC-ME SURR Support for the Review of the Roaming Regulation	The objective of this WP is to provide support to the review of the EU roaming rules that entered into force on 15 June 2017. In particular, this work-package will include: A. Contribution to the shaping of the analytical framework of the roaming review. B. Contribution to the Commission's interim report on roaming regulation implementation: general review. C. Contribution to the Commission's interim report on roaming regulation implementation: analysis of mobile operators' fair use policies. D. Sustainability analysis on individual mobile operators' data. E. Contribution to steering Commission's study SMART 2017/0091 on assessing wholesale roaming costs.	JRC.1.1 GIULIA CANZIAN	10.1.b	CNECT	CNECT	n/a			01/02/2018 31/07/2020	CON-AA					
10.1.c Competence Centre on Composite Indicators and Scoreboards - help to develop monitoring and benchmarking tools.																
661 - COIN JRC.1.1	1030 - COIN International Strengthening the JRC International network on Composite Indicators & Scoreboards	The WP includes six strands of activity: (a) support to EU Member States requests on the revision of indicator frameworks (e.g. request by the Italian government on measure nations attractiveness), (b) audits of composite indicators and indicator frameworks conducted by the JRC upon request of international organizations and EC services that are active in the EU and international policy arena, (c) extending the functionalities of the COIN Explorer (a JRC platform under development in 2016 that maps indices and scoreboards in use by the EC and helps drawing country-specific policy recommendations), (d) production of the new version of the JRC-OECD Handbook on Composite Indicators and Scoreboards, (e) research activities on methodological advances for composite indicators, (f) training to EC officials (& open to the wider public where applicable) on the development, quality assurance, communication and visualization of composite indicators and scoreboards.	JRC.1.1 CARLOS JORGE TACAO MOURA	10.1.c	JRC	JRC	Michaela SAISANA	REGIO SG	- Yale University - Columbia University - MASSACHUSETTS INSTITUTE OF TECHNOLOGY FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) CEDEFOP - The European Centre for the Development of Vocational Training CU - Cornell University DFI - Development Finance International ECB - European Central Bank EIGE - European Institute for Gender Equality EMCDDA - European Monitoring Centre for Drugs and Drug Addiction INSEAD - Institut européen d'administration des affaires ITU - International Telecommunication Union OECD - Organisation for Economic Co-operation and Development (OECD) Oxfam - Oxfam THE EUROPEAN HOUSE - AMBROSETTI - THE EUROPEAN HOUSE - AMBROSETTI UN ECE - UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE UNDP - United Nations Development Programme WIPO - World Intellectual Property Organization	01/01/2014 31/12/2019	INS-RS	201801	JRC audit of international indices	At least two JRC audit reports (either contributions to monographs or JRC technical reports) that describe the statistical properties and sensitivity of international composite indicators. These JRC audits are to be conducted upon invitation of key partners who shape international policies through the development of international indices. These indices have to be of direct relevance to Commission priorities.	30/11/2018	Article contribution to a monograph or other periodicals
												201802	Trainings on Composite Indicators and Scoreboards	The JRC will organize at least one training for key institutional/academic partners in the network on topics related to Commission priorities that are monitored through indicator scoreboards and composite indicators.	30/11/2018	Training
												201803	Handbook on Composite Indicators & Scoreboards	After ten years from its release, a revised and updated version of the 2008 JRC-OECD Handbook on Constructing Composite Indicators will be produced that notably extends the content of the Handbook in terms of methods used, lessons learned from the more than 100 JRC audits on composite indicators, case studies analysed and key recommendations when using indicator frameworks to draw policy conclusions. The drafting of the report is ongoing since 2016.	30/11/2018	Books and monographs with JRC editorship
												201804	COIN Tool User's Guide - Update	Update to the User's Guide for the COIN tool, which helps index developers to "automatically" assess some of the statistical properties and robustness of their composite indicators and scoreboards.	30/09/2018	Science-for-policy reports
												201805	COIN Data Hub	The COIN Data Hub will offer an overview of about 450 indices and scoreboards of relevance to Commission policies. The hub will include more than 150 Commission-developed scoreboards and indices and about 300 indices and scoreboards, which are developed by international organizations, that have high relevance to the Commission priorities. Description, methodology, geographic and temporal coverage, as well as frequency of update for the different sources will be there to provide insights into what data is available, including its potential for supporting different types of analysis.	30/11/2018	JRC technical reports
												201806	Academic publications related to heatmaps, scoreboards and composite indicators	At least two academic publications with key institutional partners in the network on topics related to Commission priorities that are monitored through indicator scoreboards or composite indicators. These articles will aim at advancing the understanding and monitoring of multidimensional phenomena (both methodological advances and literature reviews). High impact journals will be targeted.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
												201807	Ad-hoc support	Cross-cutting activities and services to help the JRC implement its work programme and strategy	31/12/2018	JRC technical reports
661 - COIN JRC.1.1	3962 - Consumers&Markets Monitoring & Benchmarking tools for JUST, GROW, EMPL	The WP includes institutional activities in support to two policy DGs. (1) [SG] Social Scoreboard for the European Pillar of Social Rights. In support to CAB Juncker, the JRC will propose social benchmarks based on the Social Scoreboard and study the coherence between the Social Scoreboard and the Macroeconomic Imbalances procedure. (2) [DG EMPL] Analysis and revision of Flexicurity. The JRC will assess the statistical coherence for the EMCO list of indicators related to the four key components of flexicurity and help to revise the flexicurity definition and indicator framework underpinning the monitoring of flexicurity. Second, with labour market convergence along flexicurity lines anchored in the five Presidents' report on completing EMU, the JRC will build on earlier work and assess where EU MS stand now and whether MS clusters in term of flexicurity have held or diverged over the crisis. The WP also includes support to international organizations (e.g. Elcano Global Presence Index), and to other JRC Units (B1 - Resilience) by conducting pre-audits of full statistical audits of indices and scoreboards.	JRC.1.1 MARCOS DOMINGUEZ TORREIRO	10.1.c	JRC	JRC	Lars Michael ENGSTED	EMPL GROW JUST	- CONSUMERS INTERNATIONAL - CONSUMERS ASSOCIATION THE QUALITY OF LIFE - NATIONAL INSTITUTE FOR CONSUMER RESEARCH - European Consumers' Organisation CoE - Council of Europe EEAS - European External Action Service OECD - Organisation for Economic Co-operation and Development (OECD) Reg Aut Empl - Candidate Countries / Members States regulatory authorities on Employment	01/01/2016 20/12/2019	INS-RS	201801	Flexicurity – Revamping the flexicurity analytical framework: conceptual and empirical analysis of the links between flexicurity policies, resilient labour markets and economic outcomes	This report will contain a critical review of the different flexicurity conceptual frameworks as proposed in the literature. The links between flexicurity and resilient labour markets will also be factored into the analysis. In addition, statistical and econometric methods will be selected to obtain as sound as possible empirical evidence of the actual impact of flexicurity policies on labour market outcomes across EU countries over the last years.	30/11/2018	Science-for-policy reports
												201802	ASEM Sustainable Connectivity Monitor	This report, jointly written with the European External Action Service, will describe the development of the ASEM Sustainable Connectivity Monitor. This monitoring tool aims at benchmarking and tracking progress among ASEM partners (53 European and Asian countries), and encourage technical cooperation between the EU and Asia, both in areas where connectivity is increasing and in those where greater progress is needed. Connectivity is to be understood in its broad perspective including all modes of transport (land, sea and air), and also energy and digital links, higher education and research, as well as customs and trade facilitation, among other aspects.	30/11/2018	Science-for-policy reports
												201803	Submission of Peer-Reviewed Article on an indicator framework for social rights	At least one peer-reviewed article relating to composite indicator/scoreboards (either methodological or describing specific implementations) will be submitted, where possible to high-impact journals.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201804	Audit of an index/scoreboard in the field of social rights/markets that is of interest to a policy DG	A statistical audit of an index/scoreboard in the field of social rights/markets that is of interest to a policy DG will be carried out. The objective of the audit will be to carefully analyse the statistical properties of an index/scoreboard and suggest modifications where appropriate with a view to ensure more accurate priority setting and policy formulation in this particular field.	15/12/2018	JRC contributions to policy documents
661 - COIN JRC.1.1	3967 - Budget&more Indicator frameworks for BUDG, ECFIN	The WP includes institutional support to three policy DGs. (1) [DG BUDG] Budget Focused on Results. In line with the Juncker Commission key priority to focus the EU budget on achieving policy and programme results, the JRC will conduct analytical work in this area, complementing last year's activity and proposal for a methodology on performance based budgeting tailor-made to the current and next multi annual financial framework. (2) [DG ECFIN] International Policy Coordination & Macroeconomic Imbalances Procedure Scoreboard (MIP). First, the JRC will support the development of scoreboards and indicators in international policy coordination. Currently, the G20 are discussing the scope for developing a benchmarking tool to help monitoring progress on and coordinating structural reforms at global level. The EU's experience with benchmarking would be 'exported' in this context. Second, the JRC will study the statistical associations between the indicators included in the MIP in order to complement policy inferences on macroeconomic imbalances in the EU. (3) [DG GROW] Following a recommendation of the REACH review in 2013, the JRC will support DG GROW in the development, statistical analysis and drawing policy inference of a set of indicators that measure and monitor the enforcement of two key regulations on chemicals: REACH and CLP. The WP also includes support to international organizations (Tax Justice Network on the Financial Secrecy Index), and to other JRC Units (E1 - Disaster Risk Management on the Index for Risk Management) by conducting full statistical audits of indices and scoreboards.	JRC.1.1 WILLIAM EDWARD BECKER	10.1.c	BUDG	JRC	Camaccini Marco	ECFIN FISMA TAXUD		01/01/2016 20/07/2019	INS-RS	201801	Audit of the Financial Secrecy Index	A full statistical audit of the Tax Justice Network's Financial Secrecy Index (FSI) will be carried out. The FSI is a composite measure which aims to quantify the extent to which financial jurisdictions around the world contribute to global financial secrecy. The objective of the audit will be to carefully analyse the statistical properties of the FSI, and suggest modifications where appropriate with a view to ensure more accurate priority setting and policy formulation in this particular field.	30/07/2018	JRC technical reports
												201802	Monitoring and reporting EU Budget Performance to 2020 and Beyond	This report will build on lessons learned from extracting performance information from the current multi-annual financial framework (MFF) and propose a new framework for the following MFF (2020 onwards). This will consist of guidelines for DGs to refine existing indicators and define new fit-for-purpose indicators. It will outline a reporting structure, and identify complementary contextual indicators, keeping in mind the expected times that indicator information will become available.	01/11/2018	Science-for-policy reports
												201803	An Indicator Framework for Monitoring Enforcement of the CLP/REACH Regulations	The CLP/REACH regulations regard health, environmental and labelling issues of chemicals within the EU. A number of indicators already exist which aim to measure the extent to which these regulations are successfully enforced. A report, in conjunction with DG GROW, will outline improvements and evolutions of this framework in order to maximise its utility.	30/11/2018	JRC contributions to policy documents
												201805	Submission of Peer-Reviewed Articles on Composite Indicators	At least one peer-reviewed article relating to composite indicators (either methodological or describing specific implementations) will be submitted, where possible to high-impact journals.	15/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												201801	Towards a conceptual framework for monitoring	The report aims at proposing a conceptual framework and eventually a monitoring tool, subject to data availability, for measuring environmental pressure in the EU Member States over the past decade	30/11/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
661 - COIN JRC.I.1	3970 - Environment&Climate Indices for ENV, CLIMA, ENER, REGIO, AGRI	the impacts of global warming of 1.5°C and 2°C above pre-industrial levels and showing how the translation of CO2 emissions into regional- and impact-related climate targets could be more powerful because such targets are more directly aligned with individual national interests.	JRC.I.1 SIMONE RUSSO	10.1.c	ENER	JRC	Barbara BACIGALUPI	AGRI CLIMA ENV REGIO	IPCC - Intergovernmental Panel on Climate Change WCRP - World Climate Research Programme (WCRP) WMO - World Meteorological Organization (WMO)	01/03/2016 31/12/2019	INS-RS	201802	Humid heatwaves hazards at different warming levels	The report aims at defining new climate indicators combining multi-hazard climate variables. In particular, the focus will be on the co-occurrence of consecutive hot and humid days. The objective is to identify regions at global and European scale where this combination of temperature and humidity can strongly amplify the mortality risk and hence help shape policies aiming at mitigating climate risk.	30/10/2018	Science-for-policy reports
												201803	Submission of a Peer-Reviewed Article on indicator frameworks related to environmental pressures	At least one peer-reviewed article relating to composite indicator/scoreboards (either methodological or describing specific implementations) will be submitted, where possible to high-impact journals.	30/11/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
661 - COIN JRC.I.1	6502 - BIG DATA PSYCH Big data and psychometrics	The WP builds on the work that has begun in 2017 at the request of the JRC Director General on Big data and psychometrics. The full WP description and history is available on Connected at: https://connected.cnect.cec.eu.int/groups/big-data-psychometrics-and-the-future-of-democracy Collaborating units (informally, without specific HR allocation): C.6, D.6, E.2, F.7, I.3, I.4. Political developments around the world in recent years clearly demonstrate worrying trends towards what some have termed a "post-fact" society in which multiple media channels are open to abuse in order to promulgate - often false - "narratives" or specific "facts" in order to influence and potentially manipulate public opinion. A key finding of the work so far is that any psychological profiling that such models are able to deliver is inherently probabilistic. Especially as regards the Kogan model, it is very difficult indeed to get any precise sense of the level of precision of the model results, as the model itself is shrouded in secrecy and - perhaps - some deliberate obfuscation. It has not so far been possible to "get under the hood" of the model to understand it fully. From a legal perspective, based on	JRC.I.1 Ian VOLLBRACHT	10.1.c	JUST	JRC	n/a	CNECT COMM EEAS	- Columbia University - UNIVERSITY OF CAMBRIDGE OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/01/2019	INS-RS	201801	Research policy paper on big data and psychometrics	Building on the paper written for the workshop on 6 June 2017 in Ispra, this paper will summarise the analysis of real-time developments relating to technological capacities and evolution in private sector methods and public sector realities.	01/12/2018	Science-for-policy reports
												201802	Feasibility note on the JRC-OECD on behavioural insights	This note (Commission internal) will explore the possibility to work with the OECD team on behavioural insights. OECD participation in and presentations at events at the JRC during 2018. JRC reciprocal participation in and presentations to OECD conferences during 2018.	01/12/2018	JRC contributions to policy documents
10.2.Support for innovative policy-making																
10.2.a support innovation in EU policy-making by developing generic tools and processes, taking into account anticipation, behavioural insights, design for policy, citizens' engagement, media monitoring, data and text-mining.																
213 - TMA CC JRC.I.3	438 - EMM Media Monitoring and Open Source Information Analysis for Policy Support	Apply research to advance, maintain and operate multi-lingual data harvesting and analysis components of JRC European Media Monitor-EMM, to provide timely and relevant information on open source news and publications in support to EU policy. Research into how to support the detection and handling of disinformation ("fake news"). Research into monitoring and analysis of social media data. Perform computational linguistic research to develop new analysis products in support of policy. Develop new delivery platforms & tools, including visualisation techniques to disseminate high-level information analysis. Explore new application areas and collaborations to further support and harmonise the media monitoring activities of EU Institutions and Agencies. Interest has been expressed by a number of Institutions (including ECB, ECJ, EIB, the OAS and others). In addition to a purely horizontal support EMM plays a key role in the following policy areas and key orientations 7.2 Home Affairs and Security (7.2.b) EMM will enhance the real-time open source (OS) monitoring activities related to (cyber) security, home affairs & external border management by providing and extending OS analysis capabilities specifically adapted to these activities. It will support collaboration by developing methods for exchange of analytic capabilities (note: not data) between trusted partners. The project will increase	JRC.I.3 Charles MACMILLAN	10.2.a	JRC	JRC	Charles MACMILLAN	CNECT COMM DGT EAC ECHO ESTAT FPI HOME JUST SANTE TAXUD	Council EU - Council of the European Union ECDC - European Centre for Disease Control EEAS - European External Action Service EFSA - European Food Safety Authority EP - European Parliament EUROPOL - EUROPOL FRONTEX - European Agency for the Management of Operational Cooperation	01/01/2017 29/12/2020	INS-RS	438201801	Text Mining Analysis and Media Monitoring	Research and development of text mining and analysis capabilities to further the quality and capabilities of the current software and services supported by EMM. Respond to Institutional ad-hoc requests for advice on, or execution of text mining and analysis tasks. Deliver the systems, operational support and services to meet the objectives of the EMM work package. This deliverable will be linked to a number of publications and releases of new or upgraded technical systems.	31/12/2018	Technical systems
												438201802	Ad-hoc support	Cross-cutting activities and services to help the JRC implement its work programme and strategy	31/12/2018	JRC technical reports
												438201803	Academic publications	At least one academic publication with key institutional partners in the network on topics related to the activities of the Competence Centre.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)
213 - TMA CC JRC.I.3	2781 - TIM Technology TIM Technology	This work package applies text mining and data visualisation techniques to the field of Innovation and technological development. It combines expertise in data gathering, bridging and management, in text mining and semantic analysis, in data visualisation, and in innovation and scientometrics. Depending on the needs of the policy makers, various datasets about innovation are put together and are then submitted to text mining engine before being visualised. Specific visualisations are developed to bring the information and knowledge in the proper format to policy makers. Example of databases used are: patents databases (Patstat + full text patents), publications dataset, trademarks data, news data from media... The TIM technology suite of tools regroups all the systems develop to track and monitor technological innovation. It allows users to visualise innovation at different levels and from various perspectives: technology monitoring; innovation in cities, regions, and countries; innovation in companies or research organisations; etc. The TIM Technology suite can be accessed by all Commission staff and by EU entities gravitating around the Commission. This work package includes	JRC.I.3 Olivier EULAERTS	10.2.a	JRC	JRC	Olivier EULAERTS	VTT - Technical Research Centre of Finland	01/01/2015 31/12/2020	INS-RS	1	Activity report	Due to the service nature of the activities under this work package, an activity report at the end of each year will document services provided and developments made.	14/12/2018	JRC contributions to policy documents	
7653 - ENGAGE JRC.I.2	2880 - JRCXSTS Science and Technology Studies	This WP implements in practice the ideas of quality assurance of science that informs policy making firmly rooted in the Post-normal Science (PNS) framework and in Science and Technology Studies (STS) scholarship. The WP consolidates a strong competence of the JRC on critical thinking using the STS and PNS frameworks applied to projects run by the JRC's Knowledge Production Units. It will do so by raising awareness, capacity building on specific methodologies, establishment of interdisciplinary spaces of collaboration within existing policy projects, and more in general it aims at contributing to develop a culture of reflexivity and quality assurance that a boundary institution such as the JRC ought to preserve. This WP puts a strong emphasis on implementing heterogeneous engagements, including citizen engagement about science and technology that is relevant for policy making, as a means to contribute to the social and ethical robustness of the knowledge that informs the policy under discussion. It will do so not only by critically examining prevalent narratives that underpin chosen EU policies but it will also scrutinise knowledge inputs to policy files using a toolbox of quality assurance (qualitative and quantitative) methodologies. In this way, it allows the creation of interdisciplinary spaces where natural and social sciences, as well as the humanities and the arts meet to examine a policy relevant scientific issue with the overall aim to assure that relevant knowledge is provided at each relevant step of the policy making cycle. Bringing together different ways of knowing is understood in this WP as a matter of quality assurance of policy making by what is called in PNS as "extended peer communities". The WP will apply methodologies from the STS and PNS fields to different policy files where science is relevant, namely narrative analysis, public engagement methodologies (material and discursive), pedigree analysis of quantitative and qualitative input to policy, NUSAP (notational system to diagnose uncertainty in science for policy) as well as ethics assessments.	JRC.I.2 Angela MARTINHO GUIMARAES PIRES PEREIRA	10.2.a	RTD	JRC	Rene VON SCHOMBERG	CNECT EMPL GROW RTD SG		01/01/2015 31/12/2019	INS-RS	JRCXSTS1	Capacity Building on Quality Assurance of Science for Policy through STS and PNS frameworks	The activities that will inform the final outcome of this deliverable consist of a series of invited seminars (Contro<-corrente STS talks - at least four seminars per year -2018 and 2019- will be organised with renowned scholars and practitioners of science and technology studies and post-normal science; inspirational workshops on themes that interest Knowledge Production directorates of the JRC (such as with Unit F1), EULearn trainings on knowledge assessment and public engagement, organisation and animation of a community of practice on STS and PNS. The final outcome is in the form of rough guidance about the application of these frameworks in the context of JRC science for policy practices.	20/12/2019	Books and monographs with JRC editorship
												JRCXSTS2	DIY Science and Technology - quality issues	Study of social and ethical issues as quality issues arising in DIY science, exploring quality assurance of science and technology as social and ethical robustness. This is the subject of a PhD project which focus on frameworks of knowledge assessment in an era where expertise is highly distributed and not confined to traditional systems of knowledge production, as well as received notions of excellence, validity and relevance. The project will examine DIY science, including citizen science, open science formats, maker spaces, etc., in different Member States. The project includes a data-base development of the makerspace movement in Europe as well as social research enquiry.	30/06/2019	PhD thesis
												JRCXSTS3	Heterogeneous engagements - practices and tools guidance	A number of collaborations that deploy STS methodologies, namely heterogeneous engagements and critical review of narratives sustaining policy and action in different domains where science and technology are relevant have been developed with Units: C.5 (WPK Arctic Coop 4915 (Project 4856)) - plan and carry out engagement of the Arctic communities in future the governance of their environment and livelihoods; D.2 (WPK H2Ocities Flagship Project WEFEnexus 568) to plan and carry out societal engagement in 2 different case studies (Europe and the Mediterranean) aiming at fostering a debate about governance of the nexus WEF in those regions; F.1 (WPK ToolDev 426 (Project 270) development of guidance on public food procurement for schools based on participatory in schools of 5 MS; F.7 (Flagship Project 'Omics in Society, with a focus on Genomics' 7523) to study narratives and engage societal actors in dialogues about ethics and other social issues.	20/12/2019	JRC technical reports
213 - TMA CC JRC.I.3	3462 - EMM2017 DG COMM EMM SERVICES 2017	Support to DG COMM. This AA covers all technical operational work to support the media monitoring activities of DG COMM. This includes the operational work on EMM (Internet Media Monitoring), the development and operation of the technical interface to the printed press media monitoring contractor, aggregation/integration of the newswires, internet and printed press material, operations of the various	JRC.I.3 Marco VERILE	10.2.a	COMM	COMM	CATTOIR Philippe (COMM)			01/04/2017 31/03/2018	CON-AA	D1	EC media Monitoring	Improved media monitoring and analysis tools for a better informed and aware EC at all levels, enabling EC services to deliver their key aims, which is to provide the Union with the necessary impetus for its development and to define the general political directions and priorities thereof.	31/03/2018	Technical systems
7761 - ANTICIPATE JRC.I.2	3765 - FOR-KNOW Foresight knowledge management and advance	The objective of this work package is to develop and update the infrastructure for the foresight work of the unit. The work package serves also as umbrella for other foresight activities contributing to the strengthening of the foresight knowledge base and the foresight toolbox of the Unit. In 2018, the Megatrends Hub will be continuously updated and improved, it will be opened to all DGs and to external parties outside the Commission for contributions and use. Another objective is having the JRC working more systematically with SG (as described in the Better regulation toolbox), to assist	JRC.I.2 Laurent BONTOUX	10.2.a	JRC	JRC	n/a	DEVCO EMPL ENV	OECD - Organisation for Economic Co-operation and Development (OECD)	04/01/2016 31/12/2019	INS-RS	1	Activity report 2018	This deliverable will describe and summarise in a report all the activities and outcomes achieved in the context of the workpackage.	22/12/2018	JRC technical reports
												2	FTA Conference: how to use foresight insights for present policymaking	The deliverable will consist of the information package in preparation to the FTA Conference that will be organised by JRC. It will contain the results of a number of interviews with experienced policy-makers discussing how (strategic) foresight can be planned, structured and delivered to maximise its use for policy-makers.	28/09/2018	Books and monographs with JRC editorship
402 - EUPolicyLab JRC.I.2	3779 - DESIGN4POLICY Design for policymaking	This is an umbrella work package that brings together the design for policy activities of the EU Policy Lab in support of innovation in policy making and in policy delivery, including internal process and external engagement with stakeholders, users and citizens. More specifically, the work package should contribute to Better regulation: -More inclusive stakeholder engagement processes; -More efficient and effective tools and instruments being developed through design; -More resilient policy options and improved ex-ante impact assessments; -A shift from document to human-centred processes. Better spending: -Leaner more agile policy development processes; -Delivery of policies more reality-rooted through stakeholder, user and citizen involvement; -New relationships with intermediate actors through communities of practice.	JRC.I.2 Christian SVANFELDT	10.2.a	JRC	JRC	Carmen Preising, HoU SG C4	CNECT		01/01/2018 31/12/2019	INS-RS	1	Design for policy activity report 2018	Report summarising the activities, the outputs, the outcomes and the learnings of the Design for Policy activities during 2018	01/03/2019	JRC technical reports
												2	"Friends of the policy lab" network	"Friends of the policy lab" network should be an open network of colleagues that have collaborated with the EU Policy Lab or wish to learn more about policy lab approaches.. Its main purpose is sharing of experiences, training and networking through activities, such as hands-on workshops, inspirational talks and networking. It should contribute to increase the awareness of the role design for policy can play in different processes and activities of the Commission and contribute to a more efficient use of design through alignment of expectations and understanding of working methods. It should also demonstrate how design can act as an integrator of different policy tools (e.g., behavioural insights and foresight) in an experimental lab setting.	01/06/2018	Training
												3	Assessment of design needs with the Commission	Assessment to identify areas within the Commission's internal and external procedures and processes in which design for policy has the potential to make a significant contribution in terms of increasing efficiency, effectiveness and relevance and removing roadblocks to innovation.	01/06/2018	Science-for-policy reports

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
213 - TMA CC JRC.I.3	6370 - TIM analytics TIM analytics	This work package applies text mining and data visualisation techniques to partially-structured datasets relevant for policy fields, except for innovation related data. It includes small-size developments for policy-makers in the Commission. Examples of ongoing projects (May 2017): TIM for genomics, applying TIM techniques to the field of genomics (Dir F JRC); ConnectedTIM, applying TIM techniques to monitor flow of information on connected platform (DG and DDG offices); use of TIM for finding JRC strategic partners (DIR A JRC). TIM analytics is the laboratory where new systems, new features, and new services are being explored. It is essential to explore new ways to support policy making in the broad sense and to have the flexibility to react to short term requests.	JRC.I.3 Olivier EULAERTS	10.2.a	JRC	JRC	n/a			01/01/2018 31/12/2020	INS-RS	1	Actity report	Annual activity report for TIM analytics. Support activities to JRC and Commission are hard/impossible to predict. An annual report will summarise all the support given.	21/12/2018	Scientific information systems and databases
213 - TMA CC JRC.I.3	6372 - TIM Omics TIM Omics	This work package describes activities within the context of the JRC strategy on "Omics", led by Dir F. Omics technologies, and in particular genomics, are disruptive technologies that will impact significantly the individual's life and society in general and therefore there will be a permanent need for policy makers to have hands-on scientific support in this complex and heterogeneous field.	JRC.I.3 Olivier EULAERTS	10.2.a	JRC	JRC	n/a	SANTE		01/01/2018 31/12/2020	INS-RS	1	TIM OMICS	Pilot Visualisation system for genomic-phenotypic associations	20/12/2019	Scientific information systems and databases
7596 - Resilience4EU JRC.B.1	6434 - ResilCoP Resilience Community of Practice	This work package has two main objectives. The first is to establish and vitalize a JRC-wide Community of Practice on Resilience (CoP), and to connect it to the Commission-wide Research Network on Measuring Resilience (resil-net). The second is to coordinate the work of the various work packages and linked activities of the JRC transversal project on resilience. The purpose of the CoP is to share knowledge and facilitate interaction among different areas of the JRC and policy domains of the EC. It enables the identification of synergies and areas of collaboration, and capitalizes the 360-degree expertise of the JRC. It organizes seminars, internal and external workshops, and maintains an active exchange of information and discussion forum on Connected. It also liaises with relevant international organizations, research institutes and leading academics. Within-JRC links has been established with the following activities (and reflected in the composition of the contributors of this work package): CAS on Population and Migration and on Governance of Human society, resilience of public finances; territorial resilience; education (including higher education), human capital and resilience; transversal project on digital transformation; resilience modeling of cities. This work package will explore the various dimensions of public engagement on a limited number of policy areas, that we designate as "demonstrators". The first demonstrator focuses on air quality governance as it directly affects citizen exploring innovative methods and tools that engage citizens in the EU policy cycle. Two cities will be selected to test one or more engagement processes, leading to a number of activities such as: (1)Co-design of an integrated public engagement process encompassing different social research methods and tools such as design, material deliberation and making use of engagement spaces such as makerspaces; (2)Development of background materials and studies that support the engagement activities, including institutional, actors and policy analysis of air quality governance, in the two chosen cities; behavioural analysis of lifestyle related air pollution sources in the cities; Sentiment analysis and framing or topic/context detection techniques of new and traditional media (3)Running of the engagement activities including data collection and visualisation, with for example the use of the SenseEurAir mobile apps, which will be tested as a particular engagement tool. (4)Integration of the outcomes in terms of citizen data collection using the Citizen Science Data platform developed for data management and integration	JRC.B.1 PETER BENCZUR	10.2.a	JRC	JRC	n/a	CLIMA DEVCO EAC ECFIN ECHO EEAS EMPL ENER ENV EPSC ESTAT FISMA GROW HOME	OECD - Organisation for Economic Co-operation and Development (OECD) UNDP - United Nations Development Programme WB - World Bank	01/01/2018 31/12/2019	INS-UR	Dashboard1	An EU-wide dashboard of resilience for cities, regions, and countries.	The resilience projects aims to produce a dashboard of resilience characteristics for cities, regions, and countries that can be used by policy makers as a tool for including the resilience dimension in their policy initiatives. Its main intended uses are the following: * A continuous monitoring of the resilience of the society of the EU and its Member States. * An assessment of the intended or unintended impacts of policies on resilience. * Based on such information, the forming of guidance for new policies improving resilience directly or indirectly. This main deliverable builds upon many small sub-deliverables and components: a report on the outcome of linking established JRC activities into the framework, scientific papers, workshops, policy briefs, reviews.	31/12/2019	Science-for-policy reports
7653 - ENGAGE JRC.I.2	6522 - ENGAGE-DEMO Engage Demo	This work package will explore the various dimensions of public engagement on a limited number of policy areas, that we designate as "demonstrators". The first demonstrator focuses on air quality governance as it directly affects citizen exploring innovative methods and tools that engage citizens in the EU policy cycle. Two cities will be selected to test one or more engagement processes, leading to a number of activities such as: (1)Co-design of an integrated public engagement process encompassing different social research methods and tools such as design, material deliberation and making use of engagement spaces such as makerspaces; (2)Development of background materials and studies that support the engagement activities, including institutional, actors and policy analysis of air quality governance, in the two chosen cities; behavioural analysis of lifestyle related air pollution sources in the cities; Sentiment analysis and framing or topic/context detection techniques of new and traditional media (3)Running of the engagement activities including data collection and visualisation, with for example the use of the SenseEurAir mobile apps, which will be tested as a particular engagement tool. (4)Integration of the outcomes in terms of citizen data collection using the Citizen Science Data platform developed for data management and integration	JRC.I.2 Angela MARTINHO GUIMARAES PIRES PEREIRA	10.2.a	SG	JRC	n/a			01/01/2018 28/06/2019	INS-RS	1	Technical Report 2018	This deliverable consists of a technical report analysing the experiment and drawing recommendations for future work in this field.	21/12/2018	JRC technical reports
7596 - Resilience4EU JRC.B.1	6568 - ResilPeople Context specific risk perception and resilience patterns for individuals and communities (urban/non-urban)	It is proposed to study, depending on social, economic and cultural contexts, the place and the role of individuals (in urban/non-urban environments) and inter-dependency relationships with the rest of the society (being communities, local or national authorities) with respect to risk assessment, crisis management and post-crisis evolution/transformation. These interactions affect people's potential vulnerability (and the capacity to anticipate and prioritise), shapes people's resilience to crisis and reflects the way the society is/isn't organized to protect people. This granular analysis should help shaping the policies needed to provide meaningful support to building social resilience and resilient societies. It should help ensuring the appropriation of global measures at local level, and help taking into account local resilience capacities and the associated drivers. The knowledge acquired on strengths and fragilities of individuals and communities could be used to challenge and/or validate results and conclusions from more traditional resilience systems analysis at macro levels (using country/region indicator values). Moreover, it is proposed to work on obtaining and comparing results for fragile populations in the sub-Saharan region and in the so-called EU "Lagging Regions". Knowing that in the former case problems of economic under-development and insecurity (e.g. food, water, energy) are compounded by the chronic occurrence of many other major stresses, and efforts must be made to reach out the population at large in cities and in rural areas. Resilience is context specific and requires tailor-made approaches. Characterising the differences of behaviours at individual and community levels would help identifying the possible limits of EU international cooperation programmes designed on the basis of EU countries/societies/communities' models. Besides, this work should also help better understanding under which conditions the root causes of fragility listed above may lead to the decision to emigrate or not. And consequently, to what extent policies aimed at improving resilience capacity and well-being reduce the likelihood for the necessity to migrate? Finally, studies point at quality and accessibility issues with poverty data. Collaboration will be sought with organisations working on these subjects and able/willing to conduct surveys at household level, such as research institutes and universities, the World Bank, the OECD, the Red Cross and NGOs.	JRC.E.7 Christophe QUETEL	10.2.a	HOME	JRC	n/a	CLIMA DEVCO EAC ECFIN ECHO EEAS EMPL ENER ENV EPSC ESTAT FISMA FPI GROW JUST MARE NEAR REGIO RTD SANTE SG TAXUD TRADE	IFRC - International Federation of Red Cross and Red Crescent Societies (IFRC) OECD - Organisation for Economic Co-operation and Development (OECD) WB - World Bank WHO - World Health Organization	01/01/2018 31/12/2020	INS-UR					
213 - TMA CC JRC.I.3	6581 - EMM2019 DG COMM EMM SERVICES 2019	Support to DG COMM. This AA covers all technical operational work to support the media monitoring activities of DG COMM. This includes the operational work on EMM (Internet Media Monitoring), the development and operation of the technical interface to the printed press media monitoring contractor, aggregation/integration of the newswires, internet and printed press material, operations of the various media monitoring tools (NewsDesk, MyNews, Media Impact Analysis tool), operational support for the delivery of various media monitoring products on mobile devices. R&D for this AA are carried out under the EMM Workpackage	JRC.I.3 Marco VERILE	10.2.a	COMM	COMM	n/a			01/04/2019 31/03/2020	CON-AA	D1	EC media Monitoring	Improved media monitoring and analysis tools for a better informed and aware EC at all levels, enabling EC services to deliver their key aims, which is to provide the Union with the necessary impetus for its development and to define the general political directions and priorities thereof	31/03/2020	Technical systems
213 - TMA CC JRC.I.3	6585 - EPMM2019 European Parliament Media Monitoring 2019	Development and customisation of a Media Monitoring platform based on the components developed for Commission's DG COMM, on request of the EP DG Communication Unit. This WP is another step in the direction of harmonizing the EU Institutions Media Monitoring activities	JRC.I.3 Marco VERILE	10.2.a	COMM	EP	n/a			01/04/2019 31/03/2020	CON-AA	D1	EP Media Monitor	Improved media monitoring and analysis tools for a better informed and aware European Parliament assisting it to provide the Union with the necessary impetus for EU policy and to define the general political directions and priorities thereof	31/03/2020	Technical systems
213 - TMA CC JRC.I.3	6590 - MOSES2019 Council Media Monitoring 2019	Further development and customisation of a Media Monitoring system for the Council General Secretariat on request of the Council DG for Press, Communication and Transparency, Reijo Kemppinen	JRC.I.3 Marco VERILE	10.2.a	COMM	CONS	n/a			01/01/2019 31/12/2019	CON-AA	D1	European Council Media Monitoring	Improved media monitoring and analysis tools for a better informed and aware European Council, enabling it to deliver its aims, which is to provide the Union with the necessary impetus for its development and to define the general political directions and priorities thereof	31/12/2019	Technical systems
213 - TMA CC JRC.I.3	6841 - CJMM2018 Court of Justice Media Monitoring 2018	The Security and Safety unit of the Court of Justice performs open source monitoring to identify possible threats against the judges or threats arising from controversial Court of Justice rulings. The project aims at providing customized Media Monitoring tools to the Court of Justice of the European Union on request of the Court of Justice DG Infrastructures. This WP is also another step in the direction of harmonizing the EU Institutions Media Monitoring activities.	JRC.I.3 Marco VERILE	10.2.a	ECJ	ECJ	n/a		ECJ - European Court of Justice	01/01/2018 31/12/2018	CON-AA	2018D1	Court of Justice Media Monitor	Media monitoring and analysis tools for the Safety and Security unit of the Court of Justice.	31/12/2018	Technical systems
11. A stronger knowledge management capacity																
11.1. Tools and skills for knowledge management																
11.1.a translation of knowledge into policy - develop knowledge management methods, concepts and skills to translate data, information and knowledge into better EU policies, including through training and the collecting and sharing of country, regional and local knowledge:																
204 - Compliance JRC.F.5	2128 - GMO TRG IV Global Harmonisation of GMO Analysis Support to Regional Networking	The present constitutes phase IV of the project "Towards Global Harmonisation of GMO Analysis by Creating and Supporting Regional Networks of Excellence" carried out by the JRC in the frame of the DG SANTE "Better Training for Safer Food Programme" (BTSF) in support to the implementation of Regulation (EC) 882/2004. The activities complement the EURL GMFF mandate under the same Regulation. Regional Workshops (targeted to Latin America and the Caribbean, Africa, Middle East and North Africa, Asia, and New MS, CC, potential CC, ENP countries) and Training Courses are organised as a means to disseminate the concept and benefit of networking with regard to GMO analysis, to stimulate and support the creation of similar networks in the regions, and to facilitate the acquisition of the required technical expertise. The activities are designed to increase the knowledge and capability of non-EU operators, to help them understanding EU control and safety requirements and to adapt their procedures accordingly. By enhancing global harmonisation of GMO analysis, the project will facilitate global trade and enhance quality of EU imports.	JRC.F.7 Maddalena QUERCI	11.1.a	SANTE	SANTE	Thierry CHALUS - SANTE.G.4 - Thierry.Chalus@ec.europa.eu	NEAR TRADE	Non EU - non EU countries	01/07/2016 15/09/2018	CON-AA	2	Regional Training Workshops on GMO Analysis	Regional workshops and training activities dedicated to Africa, the Middle East and North Africa (MENA), Latin America and the Caribbean (LAC), Asia and East Europe. As part of a multiannual capacity building programme, the activities will 1) consolidate and/or strengthen the existing interest and commitment of regional experts in regional networking, 2) Serve as an occasion for the regional participants to share experience and good practice and to suggest/define a regional roadmap for the subsequent period according to the status/needs of each region, and 3) address specific topics according to regional needs and priorities.	15/09/2018	Training

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7523 - OMICS JRC.F.7	3704 - HealthMETH In vitro diagnostic performance assessment	The new in vitro Diagnostic Medical Devices (IVD) Regulation package foresees an obligatory performance assessment as a step to assess diagnostic genetic tests. Such an assessment should ideally follow an agreed international standard, yet for the latest generation of tests, this is currently lacking. This exposes consumers to uncertain quality of so called life style genetic tests and furthermore hampers the introduction of innovative but safe approaches in clinical diagnostics, creating dysfunctions of the internal market and putting at disadvantage the EU biomedical industry. To address these issues this WPK will establish a state of play in the area of genetic testing and	JRC.F.7 Alexandre PATAK DENNSTEDT	11.1.a	GROW	JRC	Hans Erik HANSSON	SANTE	CEN - European Committee for Standardization EDMA - European Diagnostic Manufacturers Association (EDMA) EMA - European Medicines Agency (EMA) EUCOMED - Eucomed represents	01/01/2016 31/12/2019	INS-RS	3	Regulatory bioinformatics	To continue and initiate international collaborations with the aim of identifying and addressing the technical challenges for implementing computational and in particular Bioinformatics strategies in the regulatory context.	31/12/2019	JRC technical reports
6820 - JPB4EC JRC.A.1	4460 - JPB4DGENV Environmental Knowledge Community Planning Tool	The objective of the project is the development of an information system, Environment Knowledge Browser (EKB), to support the Environment Knowledge Community (EKC) to set up a joint knowledge planning tool. This is a web based tool, accessible to the EKC and includes the knowledge generation from the agreed work programmes of JRC, EEA, ESTAT, RTD and LIFE programme against the priorities of the 7th Environment Action Programme (EAP). The IT System is based on the JRC Project Browser.	JRC.A.1 Ioannis KANELLOPOULOS	11.1.a	ENV	ENV	Elena MONTANI	CLIMA ESTAT RTD	EEA - European Environment Agency	29/03/2016 31/12/2018	CON-AA	2018001	EKB IT System	Final operational IT System following testing from DG ENV, and addressing all agreed requirements. Technical Support and bug fixing will continue for 6 months after the expiration of the AA.	31/03/2018	Technical systems
												2018002	EKB IT System final report	Final Project Report exact content to be discussed and agreed with DG ENV.	29/06/2018	JRC technical reports
5183 - KMHCF JRC.F.7	5184 - KMGF-F Knowledge for Health and Consumer Safety	The work package will anticipate knowledge needs, map knowledge gaps, analyse, elaborate and share available knowledge and suggest research topics to be carried out in the JRC in support to EU policies on consumers, food safety and health. While some topics have already been identified as of emerging priorities (e.g. genome editing, big data and bioinformatics etc.) and will be elaborated in the near future, constant scanning, following meta-analysis and taking into consideration policy demand, available knowledge, feasibility, added value and potential policy impact will allow the early identification of trends and emerging areas of interest/impact. More specifically, within the planned period, the work package will provide advice and possible options to EU policies in the context of emerging challenges linked to biotechnological advances, like those related to genome editing, to the regulatory use of bioinformatics and big data, to antimicrobial resistance and to the health and well-being aspects of the microbiome. The work package will contribute to strengthen the analysis, elaboration, sharing and proper use of available knowledge via the development and implementation of tools and strategies to improve the mining of interesting knowledge, including horizon scanning.	JRC.F.7 Guy VAN DEN EEDE	11.1.a	SANTE	JRC	to be decided	AGRI CNECT GROW RTD TAXUD		01/01/2017 31/12/2019	INS-RS	21	Options for the governance of Genome editing	The deliverable includes the study, discussions, consultation – also through the organisation of experts meetings – and the formulation of options for the governance of Genome editing and related technologies when used in breeding crops and animals, its challenges and the gaps to be bridged. The study will also discuss the uptake of the technologies in the academies and industries and will discuss the ethical issues associated with it.	31/12/2018	Science-for-policy reports
												31	Study of the antimicrobial resistance spread among human, animals, food and the environment	Mapping antimicrobial resistance (AMR) spread among people, animals and the environment and understanding when there is sufficient demonstrated risk to justify intervention in order to provide correct regulatory advice for the design and implementation of a surveillance scheme for AMR spread fully in line with a "One Health" approach.	31/12/2018	Article contribution to periodicals or to conference proceedings listed in SCOPUS
												41	Ad-hoc reports on specific and emerging issues	In line with its mandate to serve as knowledge reference for Commission services and EU policy makers and to provide state-of-the-art science and robust evidence base to support the development and implementation of EU policies on Health and Consumer Safety, Unit F.7 will provide briefings, ad-hoc reports and collect expert opinion on specific and emerging issues.	31/12/2019	Science-for-policy reports
												51	Novel tools for improved knowledge mining & competence mapping	This deliverable is a set of implemented tools and strategies that will be developed to improve the mining of interesting knowledge and the mapping of knowledge related to health and consumer protection in public resources (web, scientific literature), as well as the mapping of scientific competences available within the Directorate F. This will also include the identification of a case study where Machine Learning or Deep Learning can be applied and deliver a Proof-of-concept in making sense of big data related to health. An additional objective of this WPK is to associate the JRC knowledge with a geographic dimension – at both national and regional level – readily available to support the knowledge demand and fill the knowledge gaps of policy DGs. This will be done in collaboration with H.1.	31/12/2019	JRC technical reports
												61	Horizon scanning	A horizon-scan policy report covering policy needs in health and consumer issues and indicating scientific and technological developments that may be of relevance for policy makers. This report will serve as input into the Work Programme and will contribute to the definition of the role of Directorate F in the medium to longer term. The report will include a review of the existing JRC clusters in the area of Health and Consumer Safety and will present options for their future roles.	31/12/2019	Science-for-policy reports
												70	Horizontal Bioinformatics support to DIR. F	The deliverable consists in Bioinformatics Knowledge Management support to several activities of the Directorate F, including: - Management and maintenance of the Central Core Sequence Information System (CCSIS), analysis of GMO sequence data for DG SANTE and EFSA, update and maintenance of Bioinformatics GMO decision support tools and databases (GMOMETHODS, JRC GMO-Matrix, JRC GMO-Amplicons), mainly for the EURL GMFF - Next Generation Sequencing data analysis and management, mainly for the Fraud Detection & Prevention Unit - Exploratory Research Project activities	31/12/2018	JRC technical reports
241 - KM-EnJ JRC.C.7	5381 - CVN Communication, Visualisation and Networking	Strategic communication is key to the future success of the JRC as noted in the 2030 Strategy, and indeed the Energy Union. It is noted that communication on the Energy Union has been prioritised by the Energy Union Project Team in its recent meeting of May 2017 in Strasbourg. The communication initiatives aim to foster recognition – in both political circles and the wider community- that good energy policy decisions must draw on robust scientific evidence to be impacting on the society and our economy. The key objectives are: • Develop a stronger Social media and web presence of Dir. C activities in collaboration with the JRC social media & web teamsteam • Perform activities defined in the service catalogue for the JRC Knowledge communication network including the harvesting of important content/deliverables and anticipate/plan communication actions using a team of antennas (communication correspondents) in each unit of Dir C • Develop visualisation tools, competences, culture and knowledge within both Dir. C, and the JRC • Web presence: edit and publish content related to Energy, Transport & Climate on the Science Hub (research topics pages, tools and databases, events etc.) • Further develop the SETIS website to serve effectively the implementation of the SET Plan • participate in the Web Steering Committee; approve requests for new websites of Dir. C in the Web Registry; • Interactive dissemination tools: in collaboration with the scientists, develop new interactive tools for the Visitors Centre and the future Virtual visitor centre. • Contribute to JRC corporate publications • Events management/coordination for high level energy, transport and climate related events • Connected: act as ambassador for Dir. C and local helpdesk for the directorate • Develop innovative science communication excellence related to energy through collaboration with other centers of communication excellence, leading ultimately to the creation of a broader JRC European Science communication network. • Develop a community of practise by networking with Commission colleagues through Connected, and in a later phase with Member States, academics and industries. The WPK works closely with H1, H2 and A3 Units of the JRC.	JRC.C.7 Darren MCGARRY	11.1.a	JRC	JRC	n/a	AGRI CLIMA CNECT ENER ENV GROW IAS MARE MOVE REGIO	EP - European Parliament SET-Plan Com - SET-Plan Community	01/01/2017 31/12/2019	INS-RS	4	Towards a network of science communication	Towards a network of science communication-- A JRC / Ecsite workshop will be developed and coordinated in the area of both science communication, and collaboration of the JRC with museums and science centres. This initiative will be jointly arranged in close collaboration with H1 and H2. Visualisation tools, procedures, platforms, expertise and knowledge sharing will also be developed within the remit of science communication and knowledge management. Specific initiatives in the energy domain related to collecting and sharing of best practices will be developed. Input will be sought via other centres of expertise. Other centres of expertise will be identified, collaboration and cross fertilisation with other Commission and Parliament initiatives will also be sought.	31/10/2018	JRC technical reports
												5	SETIS Portal - 2018 Edition	Maintenance and further development of the SETIS online portal, which is the main instrument for public dissemination of the SET-Plan activities and achievements. The SETIS website is continuously updated with new assessments and information on energy technology developments in Europe, enriched with online tools and disseminates the SETIS magazine, which is also produced under the same deliverable.	31/12/2018	Scientific information systems and databases
												6	JRC Science Hub / Web presence / social media presence - Dir. C 2018	Within the remit of the JRC Knowledge communication network, Dir C presence and promotion of key deliverables via the JRC Science Hub / Web presence / social media presence will be performed via the Content management / development - Update content related to Dir. C research topics, laboratories, news and events, develop new actions to enhance / promote Dir C. work via modern web based communication tools. Develop means to structurally monitor Dir C web presence / impact	31/12/2018	Scientific information systems and databases
												635557	Science communication Energy facts and story telling	To develop a concept for a session during the EU sustainable energy week on energy facts and storytelling The proposal should be accepted and supported by DG ENER	01/06/2018	Training
												635561	Science communication and visualisation development for Knowledge management	Within the remit of science communication and knowledge management visualisation skills, tools, and culture will be advanced within the Directorate and the JRC, together with H1, H2, and other key players within the JRC. a pragmatic user guide for the structured development of visualisation within the JRC will be developed, including an almanac of energy related info graphics and visualisations, issues such as current JRC wide problems on compatibility issues with tools and DG COM guidelines will be addressed together with the web team from H2. Input and networking will be sought via other centres of expertise. collaboration and cross fertilisation with other Commission and Parliament initiatives will also be sought. Visualisation tools, procedures, platforms, expertise and knowledge sharing will also be developed within the remit of science communication and knowledge management	31/12/2019	Training
												635562	SETIS Portal - 2019 Edition	Maintenance and further development of the SETIS online portal, which is the main instrument for public dissemination of the SET-Plan activities and achievements. The SETIS website is continuously updated with new assessments and information on energy technology developments in Europe, enriched with online tools and disseminates the SETIS magazine, which is also produced under the same deliverable.	31/12/2019	Scientific information systems and databases
												635563	JRC Science Hub / Web presence - Dir. C 2019	Content management / development - Update content related to Dir. C research topics, laboratories, news and events, develop new actions to enhance / promote Dir C. work via modern web based communication tools. Develop means to structurally monitor Dir C web presence / impact	31/12/2019	Scientific information systems and databases
6479 - K4SDFS JRC.D.6	5520 - KM4SDFS Knowledge Management for Sustainable Development	The work package will anticipate knowledge needs, map knowledge gaps and suggest research topics to be carried out in the JRC linked to the current Commission's priorities in terms of competitiveness and economic growth (especially earth observation and agriculture) and social solidarity and environmental responsibility (global environmental stewardship, food security and the Sustainable Development Goals). More specifically the work package will: 1. Support communities and processes on the Connected platform in collaboration with directorate H and with the Directorate D Knowledge Production Units, and support the Knowledge Production units through document and presentation proof reading, content planning and presentation. 2. Contribute to the JRC's outreach and communications, especially with external science centres, social media presence and JRC's digital web presence, including new evolutions to one-stop-shops, data visualisation and 'gateway atlases' that provide a physical paper bridge to existing digital	JRC.D.6 Aude NEUVILLE	11.1.a	JRC	JRC	TBD	AGRI CLIMA DEVCO ENV GROW		01/01/2017 31/12/2018	INS-RS	55201	Global Surface Water Explorer Atlas	The Global Surface Water Explorer is an on-line information system developed by JRC providing a global history of surface water occurrence spanning three decades, at 30m resolution with monthly time steps. This has immense value to many user communities, but making sense of the 6 thematic layers, and the full functionality of the web site can be enhanced through a gateway-atlas. This new concept provides a physical (book form) synthesis of the web site's findings and narratives, along with an accessible guide to 'how to use' the web service, driven by examples and 'real-world' applications, plus digital links to content from the web site. This will add considerably to the user experience and increase the dissemination and utility of JRC generated knowledge. It will act as a prototype for future gateway reports/atlas that may be developed alongside other JRC on-line services, and will contribute to communications, data visualisation and external science centre links.	30/11/2018	Books and monographs with JRC editorship

JRC 2018 - 2019 DETAILED WORK PROGRAMME																
Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. ID	Title	Description	Expect. Rel. Date	Category
	Food Security	Knowledge sources in JRC 3. Coordinate the production of briefings for the Commissioner, DG and DDG within Directorate D, by providing written input to policy initiatives associated to Directorate D competencies, which may include science-for-policy briefs, will support KP Units in inter-service policy meetings and in the presentation of key findings at stakeholder policy forums and events, which may extend to work with directorate H on Skills and Training when required. 4. Manage knowledge produced across the JRC linked to the Commission's development assistance and environment policy areas, especially for links with Africa, for protected area management in ACP countries and for selected SDG indicators.						MARE SANTE SG TRADE				55202	Africa Observatory proof of concept	In 2017 the JRC produced its Africa Flagship report. This brought together a wealth of information from a range of JRC Directorates. This needs to become a living, accessible source of information for policy DGs, counterparts in the Africa Union Commission and key international entities (such as the UN services dealing with the Sustainable Development Goals). This proof of concept will provide a one stop shop offering co-ordination and relationship with EC and AUC services, technical components across the four themes of people, planet, peace and prosperity, plus cross-cutting issues. The proof of concept should eventually lead to sharing information on the most recent and on-going works per theme and geographical area, provide full access to available data, maps, reports and, more generally, technical information.	31/12/2018	Scientific information systems and databases
6485 - KM4SSM JRC.E.7	5540 - ORG-K Collection and provision of organised knowledge	One of the basic objectives of knowledge management is to make existing knowledge easily available. To that end, the searchable repositories (i.e., catalogue, database) of information relevant to space, security and migration, some of which have been initialised in 2017, will be created, updated and further developed. They will contain information on EU policies (legislation, regulations, directives, strategies); on EU-funded R&D projects (FP7, H2020); and on JRC mission reports, meetings, events and other relevant data and information from various sources. These are all categories of information that are already existing, but not easily accessible. This follows a clear need, already expressed by policy DGs. To facilitate the searching, keyword taxonomies will be designed. The work hopes to make use of tools, including text and data mining functionalities, with Unit I.3 support. Furthermore, efforts will be performed to raise cross-awareness and to map the activities in the Directorate. A Summer School "Knowledge Management for Safe and Secure Society" will be organised bringing together JRC colleagues from various directorates and partner Commission's DGs. The programme will include key note plenary sessions and the Ideas Market allowing to showcase the best practices, providing a place for the "bottom up feed" of ideas and concrete case studies for inspiration and "take away". The program will be designed to be beneficial not only to the JRC colleagues, but also to invited Commission's services (e.g. primarily SG, HR, EAC, as well as DGs like EEAS, ECHO, DEVCO, GROW, HOME) and other external partners. Participants will be selected upon the "mutual benefit" criteria. This WPk also covers activities for information and knowledge dissemination, briefings, inter-service consultations and ad-hoc policy support. These are on-going, repeated activities, each of them not big. Even though they result in many small outputs, which are important, they do not result in individually specified deliverables in the work program. Outputs of this WPk that will not result in Pubsy deliverables are: (a) Input to policy documents, joint scientific reports and other Flagship reports; (b) Input to briefings and Inter-Service Consultations; (c) Results of dissemination and knowledge communication activities. As mentioned before, this work just like for all three WPks will continue also in 2019, but details and deliverables are planned only for 2018.	JRC.E.7 Paola PICCININI	11.1.a	HOME	JRC	n/a	CNECT DEVCO ECHO EEAS GROW MARE MOVE RTD	MS EU - Member states EU	01/01/2018 31/12/2018	INS-RS	1	Searchable repository of EU-funded R&D projects on space, security and migration.	Database of European R&D projects on space, security & migration. Include projects that have ended in the last 5 years, ongoing projects and current calls. To contain R&D projects that are funded at EU-level. Collaboration: In Directorate E with all KP units, in the JRC with Directorate H and I mainly, plus Directorate A, at the COMM with DG RTD.	31/12/2018	Scientific information systems and databases
												2	Searchable repository of EU policies on space, security and migration.	Database of policy documents on space, security & migration. It includes regulation, directives, recommendations, decisions, communications, strategies, agendas, action plans, reflection papers, etc. Collaboration: In Directorate E with all KP units, in the JRC with Directorate H and I mainly, plus Directorate A.	31/12/2018	Scientific information systems and databases
												3	Searchable repository of Directorate E mission reports and relevant information from meetings, events and other data from various sources.	Database of mission reports for Directorate E and relevant information from meetings, events and other data from various sources on space, security & migration. Collaboration: In Directorate E with all KP units, in the JRC with Directorate H and I mainly, plus Directorate A.	31/12/2018	Scientific information systems and databases
												4	Mapping of Directorate E activities in relation to other Directorates and DGs	The activities of Directorate E will be mapped with a view to identify synergies and possible collaboration with other activities carried out in the JRC, as well as to identify possible future directions to be undertaken. Collaboration: in Directorate E with all KP units, in the JRC with the other Directorates.	31/12/2018	JRC technical reports
												5	Moving towards a Safe and Secure Society	A workshop will be organized, where European key stakeholders from Commission Services, Member State Authorities, Academia, Industries, Health Care and Social Representatives will be invited to identify the key principles of a safe and secure society. The knowledge collected will provide a multi-dimensional perspective, from science, technology, regulatory framework(s), economic and society point of view. It will be framed in a science for policy report. Collaboration: Units in Directorate E, JRC, and all relevant Directorates in the Commission, e.g., DG Home, ECHO, DEVCO, GROW, etc. will be involved.	31/12/2018	Science-for-policy reports
4855 - GHG-MoVe JRC.C.5	5741 - CHE PLANNED: CO2 Human Emissions	CHE aims to improve our ability to monitor CO2 emissions following the Paris agreement. The JRC Emissions Database for Global Atmospheric Research contributes with global high spatial and temporal resolution gridmaps of CO2 and selected tracer gas (e.g. CO) emissions, with full uncertainty and covariance matrices. These will serve as input for the atmospheric transport models and data assimilation systems in which the uncertainty and in particular the spatial correlation between individual point sources for a given emissions sector or other proxies will be evaluated with different uncertainty bands and covariance matrices. Under this project, JRC is co-chair of workpackage 3 on "Uncertainty trade-off for fossil fuel emissions" and advises on uncertainty gridmaps and covariance matrices, that will be delivered by the other partners of the project. JRC also contributes to the sensitivity assessment of significant parameters to the emission estimates that derive after inverse modeling or data assimilation.	JRC.D.6 Greet JANSSENS-MAENHOUT	11.1.a	GROW	RTD	Hugo ZUNKER (GROW.I.2), BERGMAN Hans (CLIMA.C.2), VAN IERLAND Willem (CLIMA.C.1)	CLIMA ENER ENV RTD	- EUROPEAN SPACE AGENCY IPCC - Intergovernmental Panel on Climate Change UN FCCC - UN Framework Convention on Climate Change (UN-FCCC)	12/01/2017 30/11/2020	CON-IA	201801	Uncertainty trade-off for fossil fuel emissions	First year report on the kick-off of WP 3 "Uncertainty trade-off for fossil fuel emissions (with an overview on the state-of-the-art and of contributing EDGAR products as result of H2020 CHE WP3 co-leadership)	30/09/2018	Books and monographs with JRC editorship
												201901	Emissions gridmaps and their uncertainties	1) Setting up uncertainty framework (also because of the workpackage lead in the H2020 proposal CHE) 2) Second year report as result of H2020 CHE WP3 co-leadership	30/09/2019	Books and monographs with JRC editorship
												202001	Conclusions and outlook on CO2 human emissions uncertainties	Final report of WP 3 "Uncertainty trade-off for fossil fuel emissions (as co-chair of WP3 making use of the input from the other partners)	30/09/2020	Books and monographs with JRC editorship
564 - CESAR JRC.D.6	6000 - CXS4SDG Copernicus for Sustainable Development Goals	The Commission recently announced its plan to fully integrate the Sustainable Development Goals (SDG) of the UN Agenda 2030 into the European policy framework and the current Commission priorities (COM(2016) 739 final). The European Earth Observation (EO) Programme (COPERNICUS) is ideally suited to provide relevant, reliable and impartial geospatial information to efforts aiming at 1) the formulation of EU policies that promote the implementation of the 17 SDGs, 2) the monitoring of progress towards the 169 targets of the UN Agenda 2030 (COM(2015) 44 final), and 3) the analysis of socio-economic/environmental consequences due to different implementation pathways as well as omissions and inconsistencies in the agreed set of SDGs. This WPk will assess the EO/geospatial information needs of relevant DGs in the European Commission in order to gauge the potential of Copernicus products to contribute actively to a successful implementation of the UN's Agenda 2030 and the broader uptake of EO. On the basis of this acquired information, the WPk will carry out a network analysis to visualise/quantify dependencies and inter-linkages between the various SDG targets and available EO-products.	JRC.D.6 Jean-Luc WIDLOWSKI	11.1.a	GROW	JRC	n/a	AGRI CLIMA DEVCO ECHO EEAS ENV ESTAT MARE REGIO	- EUROPEAN SPACE AGENCY ESA AGENCE SPATIALE EUROPEENNE ASE FAO - THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO) OECD - Organisation for Economic Co-operation and Development (OECD) UN FCCC - UN Framework Convention on Climate Change (UN-FCCC) UNCCD - United Nations	01/01/2018 31/12/2019	INS-RS	201801	EO data needs for Commission SDG/policy work	Launch and evaluation of a survey targeting Commission DGs in order to gauge existing and anticipated needs for geospatial information and EO products in support of policy work.	15/12/2018	Science-for-policy reports
												201901	Knowledge representation of EO products & SDG inter-linkages	Apply network analyse tools to visualise/quantify interlinkages, dependencies and synergies in the available palette of EO information products on the one hand, and, the SDG targets and global indicators on the other hand. The goal is to exploit this knowledge representation system to identify optimal EO-product and SDG target combinations to build novel and/or higher-level SDG indicators.	01/06/2019	Science-for-policy reports
7674 - KD4G&I JRC.B.7	6444 - KD&P Knowledge Dissemination and Positioning	The effective dissemination of the knowledge and output produced in Dir. B is the core activity of the Knowledge Dissemination and Positioning work package. It reflects the work of the Unit towards the JRC's vision: "To play a central role in creating, managing and making sense of collective scientific knowledge for better EU policies."	JRC.B.7 MIGUEL QUEROL SUQUIA	11.1.a	SG	JRC	n/a	CNECT COMP EAC ECFIN EMPL EPSC FISMA		01/01/2018 31/12/2018	INS-RS	1	Concept note on knowledge dissemination at Dir B (internal document)	The note will summarise and evaluate the tasks and procedures involved in knowledge dissemination at Dir B. It will review selected deliverables to extract lessons and identify areas for improvement. The goal of the document is to provide a tool for management to steer and improve the knowledge dissemination function in the directorate. The note will be done in co-operation with Units B1-B6, and it will take into consideration the outcome of the mapping exercise of the various DIR. B websites and online tools as well as current communication practices.	30/06/2018	JRC technical reports
8636 - KM-P JRC.H.1	6514 - CoRe-KM Country & Regional Knowledge Management	The JRC aim to become the "knowledge manager" of the Commission means also being able to respond to the growing demand for geographic knowledge, first of all in support of the European Semester, but potentially for all EU policies as they all have a country or regional dimension. The objective of this WPk is to make the JRC knowledge with a geographic dimension readily available (especially with the use of crowdsourcing methods) to support the knowledge demand and fill the knowledge gaps of policy DGs. With the Commission Country Knowledge initiative, 28 interactive spaces are available in Connected since May 2017 providing a full coverage of all EU MS and allowing sharing all the useful country knowledge, as well as being places where new knowledge needs and gaps can be identified. They aim to be the one-stop-shop for all the country-specific knowledge produced by the Commission on a Member State. DG COMM and DG GROW have also joined the initiative.	JRC.H.1 David MAIR	11.1.a	JRC	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	Commission Country Knowledge	Country Knowledge spaces on Connected, actively used by Commission Staff, with Community Management by DG COMM. Engagement of JRC staff to showcase the geographic knowledge on the respective country spaces.	31/12/2018	Technical systems
												2	'Connected European Semester' project on collaborative working	Roll out of the second phase of the Connected European Semester project on collaborative working - moving beyond the technology which supports collaborative working - moving beyond the technology which supports collaborative working to focus on culture change. The aim is to improve the effectiveness, efficiency and engagement of the Semester teams.	31/08/2018	Science-for-policy reports
												3	Socio-economic mapping of Europe (ATLAS)	Publication presenting new perspectives in the analysis of socio-economic indicators at national and regional levels. The 2018 release will present updates in the data and new indicators.	31/12/2018	Science-for-policy reports
8636 - KM-P JRC.H.1	6881 - SKTrain Skills and Training	The project aims at implementing the JRC integrated approach to competence mapping and "KM for policy" training. Identifying skills needed by scientists and policymakers to cooperate in evidence-based policy making processes; developing, delivering and/or overseeing specific trainings to this effect.	JRC.H.1 David MAIR	11.1.a	JRC	JRC	n/a	HR SG	OECD - Organisation for Economic Co-operation and Development (OECD)	01/01/2018 31/12/2018	INS-RS	1	Communities of Practice and KM	Concept and tool for skills locator on Connected embedded within the concept of communities of practice.	30/06/2018	Technical systems
												2	Training and capacity building for scientists in evidence & policy	This deliverable will include a series of training and capacity-building activities to promote professionalization of evidence for policy, such as: MC summer school, JRC session at AAAS 2018 on Evidence & Policy, workshop and training for JRC scientists in research synthesis/systematic reviews, Part 1 course on the role of the JRC in EU decision-making, Part 2 general introductory training for JRC scientists in working with policy-makers.	31/12/2018	Training
												3	Policy Advice	Review of existing behavioural, decision and organisational science and development of new advocacy and communication techniques will be done to understand how to use framing, mental models, storytelling etc. to achieve policy input. This would be done in partnership with the CAS.	31/12/2018	Science-for-policy reports
												4	Training and capacity building for policy makers in evidence and policy	This deliverable will comprise activities to better understand the needs of policy makers, trainings on how to use natural and social sciences in policymaking, how to use technical briefs, events to establish the critical skills decision-makers need for EIPM. Collaboration with OECD is foreseen on developing a strategic agenda on how to support public administration in connecting evidence to policy.	31/12/2018	Training

JRC 2018 - 2019 DETAILED WORK PROGRAMME

Project / Owner Unit	Work Package ID, Acronym and Title	Work Package Description	Owner Unit / Work Package Contact	JRC KO	Main Pol. DG	Funding DG	DGs' Contact	Add. Pol. DG	External Beneficiaries	Start / End	Funding Type	Del. Id	Title	Description	Expect. Rel. Date	Category
7512 - FAIRNESS JRC.I.1	7062 - KM_ROMA Knowledge Management on Roma Inclusion	Information on Roma community and their living conditions is scattered and incomplete. This work package aims to take stock of the available knowledge, information tools underpinning the policy measures in place at European level. The final deliverable will present the scattered knowledge in a holistic and user friendly way. The work package will also deliver information on the knowledge gaps identified using participatory research and policy design techniques with the support of a selected community of experts and practitioners active in the field of Roma socio-economic inclusion. This work package is under the JRC umbrella project on fairness and the focus is on marginalised groups. Synergies with the other work packages, for instance the WPK on Poverty are sought. The recommendations may be eventually be used to design research projects or policy actions by the JRC and international organisations, the EU, national and/or local authorities.	JRC.A.2 Funda CELIKEL ESSER	11.1.a	JUST	JRC	n/a	EAC EMPL NEAR	UNDP - United Nations Development Programme WB - World Bank	01/01/2018 30/09/2018	INS-RS					
11.1.b knowledge-management methods and tools - develop common platforms for the use and sharing of data, information, and knowledge in support of policy-making; contribute to ensuring existing and new platforms and information systems interoperability; provide access to knowledge sources and maximise the use of data and information for better policy-making; facilitate communities of practice and improve knowledge-based communication; create																
6519 - KM-KS JRC.H.2	5561 - K-Access Access to knowledge resources	The WPK manages the JRC eLibrary including access to bibliographic databases. It implements innovative scientific literature alert services and fosters synergies with "Research family DG" Libraries. It coordinates the JRC contribution to the Open Access strategy in collaboration with RTD. Activities also include managing the open access process for JRC publications and training on the use of bibliographic databases. This WPK also includes managing and maintaining the JRC publications and deliverables repository (PUBSY) and the implementation of the PUBSY simplification strategy. Collaboration with Publication Office for taxonomies and semantic technologies (CELLAR) will continue. A pilot will be launched with using ALTMETRICS for tracing impact of JRC outputs (will link with metrics for impact for policy and with social media).	JRC.H.2 Marc WILIKENS	11.1.b	JRC	JRC	Krzysztof MARUSZEWSKI	OP RTD		01/07/2016 31/12/2019	INS-RS	1	Seamless access to scientific	Review the service offer in cost effective ways taking into account budget constraints.	27/12/2019	Scientific information systems and databases
												2	Open Access Agreements	Group agreements with publishers to streamline and simplify the administrative burden in handling open access articles that until now are handled on individual basis.	31/10/2019	Scientific information systems and databases
												3	Commission Inter-Library Community of Practice	Commission Inter-Library Community of Practice	08/07/2019	Technical systems
												4	PUBSY management and maintenance	Managing and maintaining the JRC publications and deliverables repository (PUBSY)	27/12/2019	Scientific information systems and databases
												5	PUBSY strategy action plan	PUBSY strategy detailed action plan and implementation covering simplification actions and enhanced user services	29/11/2019	Scientific information systems and databases
												6	Pilot project with ALTMETRICS	Pilot project with ALTMETRICS: implementation and review report.	30/09/2019	JRC technical reports
6519 - KM-KS JRC.H.2	5562 - K-Diss Knowledge based Communication	This WPK aims at developing, in cooperation with Directorate A and the JRC thematic Directorates, guidance and practice for communicating scientific knowledge for policy, by better targeting groups and products with high impact. The WPK objective is managing the JRC digital communications tools, including web platforms, social media, the JRC events, and the JRC Visitor Centre. Specifically, activities include: i) managing events in Brussels, Ispra and the JRC, flagship events and coordinating with the vertical KM units the events management process in the other JRC sites; ii) managing the visuals/graphics competence group including developing a process for the production of flagship reports; iii) streamlining, rationalising and coordinating JRC web infrastructure in support to the different knowledge management activities (including KCs and CCs); iv) managing the visitor centre and develop virtual lab videos and multi-media tools. A pilot project for mixed Reality for Research and Science Communication will be conducted with JRC E.2 under their project leadership.	JRC.H.2 Marc WILIKENS	11.1.b	JRC	JRC	Krzysztof MARUSZEWSKI			01/07/2016 31/12/2019	INS-RS	1	JRC on social media	Management of the JRC Social Media presence including facebook, twitter, linkedin, and youtube to connect with policy-makers and stakeholders, and Mendeley and Research Gate to connect with scientific Community. Establish guidelines and training for usage of social media. Develop a strategy for the evolution of the JRC's social media presence which goes until 2019.	31/10/2019	Technical systems
												2	JRC Web Presence for knowledge services	(1) Coordination and harmonisation of JRC web presence through the management of the JRC Web Registry in order to ensure that web projects reflect a coherent view of JRC's vision and activities, and to ensure that websites are properly managed throughout their entire life cycle and are run at optimal standards and according to the European Commission's standards and rules. (2) Management of the JRC's EU Science Hub and revision of its taxonomy in light of the JRC Strategy 2030 and the JRC's reorganisation. (3) The development of an EC-branded Knowledge Platform, compliant and compatible with the EUROPA web presence. The focus will be on engaging science/policy communities of interest, interfacing science knowledge into policy processes.	30/11/2019	Technical systems
												3	JRC Visitor's Centre	(1) Operate the JRC visitors centre including its extension to "virtual science" promoting virtual lab videos and multi-media content for maximising dissemination to policy DGs, stakeholders and students. (2) Establish an inventory of up to date science multi-media content and story-telling for visitor centre, exhibits and events and deployment of a content management system.	30/10/2019	Technical systems
												4	JRC Events Management	(1) A process for events planning and management; (2) Managing events in Brussels, Ispra and the JRC flagship events and coordinate with the vertical KM units the events management process in the other JRC sites.	30/09/2019	Scientific information systems and databases
												5	Visual communication products and publications	(1) Visuals/graphics for promotion material, publications, social media, events; (2) production process for flagship reports; (3) Development and promotion of an inventory of JRC science visualisation products; (4) maintenance of the corporate visual identity guidelines.	31/12/2019	Technical systems
7523 - OMICS JRC.F.7	6368 - Omics Soc Omics integration in the JRC	The work package aims at implementing the Omics technologies and concepts into the relevant areas within the JRC that will be impacted by their development. To do that, it will foster interactions with external expertise in the different relevant fields; put together the mapped expertise existing in the JRC into a JRC Community of practice on Omics technologies. The ultimate aim is to implement the JRC concept paper "Omics in Society with a focus on Genomics". The work package will provide the basis for the creation of a future Centre for Advance Studies in the field of "Omics in Society".	JRC.F.7 Maddalena QUERCI	11.1.b	SANTE	JRC	n/a			01/01/2018 31/12/2018	INS-RS	2	JRC CoP - Omics in society - Omics Time	A JRC Community of Practice will be set up in order to foster and build, in a cooperative manner, the capacities necessary to support EU legislators in relation to the challenges and opportunities raised by Omics technologies. Also, an internal event will be organised (Omics Time), with the aim to invite external experts in the various fields in which Omics technologies are expected to have disruptive impact in the coming years. The event will include keynote presentations, as well as working groups composed of external experts and project leaders from across the JRC to forecast the regulatory challenges in the different fields, and map the implementation of the necessary internal knowledge and expertise within the different JRC science areas.	31/12/2018	JRC technical reports
6519 - KM-KS JRC.H.2	6418 - MRR&SC Mixed Reality for Research and Science Communication	Mixed Reality is the union of Augmented and Virtual Reality. It is widely considered to be a game-changing technology, which redefines ways to communicate information or visualize scientific data. This workpackage recognizes the vast synergies existing across all different uses for Mixed Reality, and endeavours to consolidate an emerging community of practice around the Virtual Reality Laboratory (VRLab) started in Unit E.2 in 2017. As such, the activities carried out under this workpackage will aim at offering a common state of the art	JRC.E.2 Thierry BENOIST	11.1.b	JRC	JRC	n/a			01/01/2018 31/12/2019	INS-UR	D1	On the use of Mixed Reality in support of Research and Science communication.	This technical report will aim at reporting on how mixed reality impacted scientific and communication activities in the JRC in 2018.	21/12/2018	JRC technical reports
7642 - JRC-ES JRC.B.7	6421 - ES2018- KM ES2018- Knowledge Management	Units B7 and H1 were invited to join 10 European Semester Country Teams and take an active part in the elaboration of the corresponding country reports in collaboration with policy DGs. As a knowledge management Unit and through its participation to the Country Teams, B7, working in close collaboration with H1, will anticipate the need for JRC inputs as well as consolidate current inputs in liaison with knowledge production Units (e.g. B1, B2, B5, I1). It will also communicate with policy DGs/country team leaders (SG) as regards to the future needs. The B7 direct contribution will focus mainly (but not exclusively) on chapters and sections linked to research, innovation and competitiveness policies and involves a close cooperation with DG RTD, DG GROW and DG EAC. Apart from direct contributions of the country team members, JRC B7 will map and consolidate the information on the current policy fields where JRC is active (fiscal policy, R&I, cohesion policy, macroeconomic policy) from other units (mainly B5, B2 and B1) and potential contributions from other B units. The work will extend to additional areas (beyond Dir. B) where JRC input can be strengthened (energy and transport, migration).	JRC.B.7 THOMAS ZACHAREWICZ	11.1.b	SG	JRC	n/a	CNECT ECFIN EMPL GROW REGIO RTD		01/01/2018 31/12/2018	INS-RS	1	Lessons learnt on KM (internal report), 2018	A second report aimed to reflect on deepening the JRC involvement in the European Semester (ES) process. To include workflows within JRC and between JRC and policy DGs, the interest and challenge to integrate JRC contributions to the preparation of ES country reports by Commission country teams and identification of new cross-country research questions that could be addressed by JRC in the future. Produced in consultation with ES core DGs (SG, ECFIN, EMPL, GROW) and other JRC units. The analysis will include the methods and content that could be also used in the direct work of the JRC with the Member States through SRSS.	31/05/2018	JRC technical reports
7647 - H-EU JRC.B.7	6424 - KM H-EU Knowledge Management Higher Education	This WPK aims to i) establish a community of practice (CoP) around the topic of Higher Education and Higher Education Policy in the EU and ii) to engage in horizon scanning activities. The aim of the CoP is to first bring together JRC researchers working on Higher Education related topics. This includes the JRC B7 team working on Entrepreneurial Universities and the Higher Education Hub. The researchers in B3 and B4 working on higher education related themes, researchers in I1-I3 as well as interested researchers in other units that will be identified in due course. Within the broad topic of Higher Education and Higher Education policy the intention is to focus on HEI's contribution to socio-economic development through the three core missions of higher education institutions: 1) providing higher education and the training of highly qualified manpower to serve labour market needs; 2) engaging in knowledge creation by conducting basic and applied research and 3) the diffusion of knowledge and contributing to innovation processes. In the course of 2018, once the CoP is active in the JRC, the CoP will be extended to other commission services and leading academics outside it.	JRC.B.7 KOEN JONKERS	11.1.b	EAC	JRC	n/a	CNECT EMPL GROW REGIO RTD		01/01/2017 31/12/2018	INS-RS	1	Overarching report on Higher Education, Innovation and Employability	The Community of Practice, the horizon scanning exercise on higher education and the future of work as well as the intermediate reports from E.UNIV2 and part of the 2018 analytical work on Universities and Innovation in the HE Hub WPK will feed into an overarching science for policy report on the contribution of Higher Education on innovation and employability.	01/10/2018	Science-for-policy reports
												2	The differential impact of MSCA funding on researchers from different country groups	Following presentation at several scientific conferences an article will be produced on the basis of the extended analysis carried out with outside experts in a journal like research policy, scientometrics or research evaluation.	01/04/2018	Article contribution to periodicals or to conference proceedings listed in the Thomson-Reuters' Science Citation Index Expanded (SCI-e) or Social Science Citation Index (SSCI)

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8636 - KM-P JRC.H.1	6880 - KP-ConMet Knowledge for Policy Concepts and Methods	The project aims at developing methods, concepts and skills in achieving an impact of knowledge on policy, striving to develop overall JRC and Commission skills in this area.	JRC.H.1 David MAIR	11.1.b	SG	JRC	n/a			01/01/2018 31/12/2018	INS-RS	1	KM methodology for the JRC	Most organisations that apply a KM policy have identified a set of key steps in KM management: creating/identifying Knowledge, storing, sharing and applying/communicating/developing it. A review of knowledge management in public policy organisations will be done, gathering intelligence on global "best in class in KM" organisations such as World Bank and OECD, to serve as benchmark and reference for the JRC in developing its own KM for policy methodology. Close collaboration with the Commission's Information Management Team (IMT) and Information Management Steering Board (IMSB) would be maintained and further developed. Through these KM networks the JRC will take a leading role in the making of a Commission-wide KM strategy and also will gain knowledge for the development of our own KM.	31/12/2018	Science-for-policy reports
												10	One-stop-shop for collaborative working and knowledge sharing	Consultancy and support service advising managers and staff on available methods and tools to all Commission DGs and cross-DG working Groups at the Commission, within the context of the Information Management Steering Board (IMSB) Work Programme, 2018-2019.	31/12/2018	JRC technical reports
												2	One-stop-shop for scientific knowledge	Database of flagship reports, science to policy briefs, KM tools, skills, and a space to share experiences gained from working together on cross-cutting KM integration projects. This would include the crowd-sourcing within the JRC of science-for-policy briefs on urgent and important policy issues with a scientific dimension.	30/06/2018	Scientific information systems and databases
												3	Science communication - a collaboration strategy with external science centres	Developing a strategy for clear and targeted communication on JRC science for policy, in collaboration with major science centres and ECSITE and by better exploiting storytelling methods.	30/06/2018	Science-for-policy reports
												4	Knowledge Visualisation	Pursuing of capacity building in visualisation of knowledge. Implementation of guidelines and best practice in visual communication of both qualitative and quantitative knowledge/infographics, connected with the work of the data visualisation Working Group within the Data4Policy Initiative. Establish a community of practice within the JRC and the Commission	30/06/2018	JRC technical reports
												5	Metrics on impact of evidence for policy	Strategy for measuring impact of knowledge on policy; following the 2017 workshop, review of literature and different approaches to develop a new strategy for the JRC and other knowledge organisations to measure their impact on policy. This includes setting up a pilot with Almetrics.	30/06/2018	JRC technical reports
												6	Downstream exploitation of Horizon Scanning	Development of a concept for exploitation of horizon scanning as incubator for science for policy services (e.g. science to policy briefs, flagship reports, engagement formats), in close cooperation with Directorate I and progressive involvement of all Knowledge Management Units	31/12/2018	Technical systems
												7	Knowledge Management for policy network	Coordination of a network of academic institutions and public sector bodies interested in knowledge and evidence for policy and creating an on-line community for the above. Organisation of events and sessions at major conferences designed to improve our understanding of the knowledge for policy interface and to increase our connectivity with the community of professionals.	30/06/2018	JRC technical reports
												8	Cognition, behaviour and decision-making in policymaking	JRC Flagship report about the state of the science on cognition, emotion, self-interest, power relations, values and decision-making work in political discourse and relations. Economics and other aspects of behaviour are excluded. It will be developed jointly with Unit I2 as part of the Enlightenment 2.0 Programme.	31/12/2018	Science-for-policy reports
6519 - KM-KS JRC.H.2	6900 - Co@Co Connected@Commission	This Work Package is a key contribution to the on-going development of a future high quality, user-centric ecosystem of collaboration and connectivity tools which are necessary for the Commission. It will provide Commission processes and staff with an, easy to use, general purpose collaborative working tool. The JRC continues to act as business owner and support the rolling out to other EC DGs.	JRC.H.2 Paul HEARN	11.1.b	HR	JRC	n/a	BUDG CNECT ENV FISMA GROW NEAR REGIO		01/07/2016 31/12/2019	INS-RS	1	Connected@Commission Steering	Operation of the Connected@Commission Steering Committee in collaboration with SG, HR, DIGIT.	31/12/2019	Technical systems
												2	End user & cross-DG process support	End user support and cross-DG process support with emphasis on communities and meters by better exploiting and /or supporting the work of KCs and CCs.	30/10/2019	Technical systems
												3	Review report and strategic outlook	Review report and strategic outlook of the Connected@Commission Work Package	31/10/2019	JRC technical reports
6519 - KM-KS JRC.H.2	6901 - Co@JRC Connected@JRC	This Work Package comprises the continuous management of the internal collaboration platform by maintaining an updated homepage and featuring most important internal communication initiatives. It entails channelling the two way management communication to staff, facilitating staff engagement with major business processes (e.g. through Digital Assemblies and crowd sourcing ideas, creating new collaborative spaces and tools for easy access and quick to information, as well as supporting Communities of Practice.	JRC.H.2 GEORGETA CORALIA CATANA	11.1.b	JRC	JRC	n/a			01/07/2016 31/12/2019	INS-RS	1	Connected@JRC Action plan implementation and	Connected@JRC Action plan implementation and status report	31/07/2018	Technical systems
												2	Communities of Practice status report	Communities of Practice (CoP) design support, guidance for implementation and status report.	30/06/2018	JRC technical reports
11.2. Intellectual property rights																
11.2.a manage the JRC's and the Commission's portfolio of intellectual property rights; advise and assist the Commission on intellectual property matters; increase awareness of intellectual property rights within the Commission and in the European Parliament;																
430 - CIPS - IP Support JRC.I.4	425 - CIPS - IPsup Central IP Service - IP Support	The main activities under this project are: detection and protection of IP assets (software, database, technical invention ...) of the EU institutions and enforcement of IP rights; advisory role to JRC and Commission on IP issues; IP portfolio management; legal and technical assistance in dealing with litigation and pre-litigation in IPRs files; advise, negotiations and drafting of licence agreements drafting and revision of IP contracts; managing the use of the European emblem.	JRC.I.4 WOUTER VERBURG	11.2.a	SG	JRC	VALILA Ari	AGRI BEP BUDG CDP-OSP CLIMA CNECT	CoE - Council of Europe Council EU - Council of the European Union EP - European Parliament	01/01/2014 31/12/2018	INS-RS	5	Yearly Activity Report	Activities and statistics on the activities of the Central IP Service are produced once a year and used to report to hierarchy and stakeholders.	31/12/2018	JRC technical reports
430 - CIPS - IP Support JRC.I.4	739 - CIPS - IPGov Central IP Service - IP Governance	The aim is to create the necessary infrastructure and tools for an efficient management of IP in the Commission.	JRC.I.4 WOUTER VERBURG	11.2.a	SG	JRC	Ari VALILA	BEP BUDG CDP-OSP		01/01/2014 31/12/2018	INS-RS	16	Yearly Activity Report	Raise awareness on IP with Commission staff.	31/12/2018	JRC technical reports
430 - CIPS - IP Support JRC.I.4	2268 - IPR-EP IPR Support to the European Parliament	to provide customer driven support to various directorates of the European Parliament in line with the support provided to the EC, in particular training and legal advice on IP as well as awareness raising about the importance of sound IPR management within the EU institutions.	JRC.I.4 WOUTER VERBURG	11.2.a	SG	SG	Christelle Courtade		EP - European Parliament	01/09/2014 31/12/2018	CON-AA	3	Legal advice, training in the field of IP	Legal advice, training in the field of IP for staff of the EP.	31/12/2018	Training
430 - CIPS - IP Support JRC.I.4	3921 - Galileo IP IP support to Galileo Satellite Navigation System project	IP Support to DG GROW in relation to Galileo activities, management of the IP portfolio, advice on technology transfer aspects	JRC.I.4 WOUTER VERBURG	11.2.a	GROW	GROW	Max Mara			18/06/2016 16/06/2019	CON-AA	3	Legal advice on IP	Legal advice on IP related to GNSS and Earth Monitoring	31/12/2018	JRC technical reports
430 - CIPS - IP Support JRC.I.4	5860 - DG AGRI2 New trade mark filings quality symbols DG AGRI	New trade mark filings quality symbols DG AGRI	JRC.I.4 WOUTER VERBURG	11.2.a	AGRI	AGRI	n/a			01/01/2017 31/12/2018	CON-AA	2018001	Trade Mark registrations	Registration of the quality symbols as trade marks in in Norway, Ukraine, Turkey, Morocco, Colombia, Brazil, India, Vietnam and Taiwan	31/12/2018	JRC technical reports
11.2.b promote collaboration on intellectual property rights and technology.																
432 - TTO JRC.I.4	428 - TTO Technology Transfer Office	The purpose of this WP is to promote exploitation and the uptake by industry or public administrations of the IPR generated and/or owned by the European Commission. This includes several activities including i) receiving and processing invention declarations from JRC directorates, ii) performing patenting analyses, iii) registering software, iv) reaching out to JRC scientific staff v) organising training and IPR clinics vi) managing patent portfolio vii) organising the annual proof of concept exercise. From mid 2017 the points i), ii), iii), vi) are performed together with the Central IP Service who has also taken the lead on it.	JRC.I.4 Mattias DINNETZ	11.2.b	JRC	JRC	MCCUTCHEON Patrick	GROW RTD	EACI - Executive Agency for Competitiveness & Innovation (EACI) REA - Research Executive Agency of the European Commission	01/01/2014 31/12/2020	INS-RS					
432 - TTO JRC.I.4	440 - TTO Circle European Technology Transfer Offices Circle	The European TTO CIRCLE network promotes collaboration between large public RTOs in the field of innovation and technology transfer by building bridges and creating added value among them. It implements as a commitment of the Innovation Union Communication (SEC(2010) 1161). The project is also a laboratory for testing new ideas and instruments for technology transfer in Europe. Partners are 27 leading European public RTOs whose prime mission is to perform research. They have decided to play a collective role in driving changes to the Technology Transfer landscape in Europe. The growing level of interest and participation witnesses the usefulness and promising impact this network could achieve.	JRC.I.4 SERGIO GRANDE	11.2.b	JRC	JRC	Patrick MC CUTCHEON	GROW	- Natural Environment Research Council - Danish Technological Institute - Max Planck Society - EUROPEAN SPACE AGENCY - LEIBNIZ-INSTITUT FUER FESTKORPER- UND WERKSTOFFFORSCHUNG DRESDEN E.V.	01/01/2014 31/12/2020	INS-RS	1	Plenary Session of the TTO CIRCLE	Report of the Plenary session of the TTO CIRCLE network planned in Sophia Antipolis in June 2018	30/09/2018	JRC technical reports
												2	Meetings of the Managing Board + Technical Reports of Specialised Workshops	reports of the 2 specialised workshops (topic to define) reports of the meetings of the newly elected managing board for the TTO CIRCLE (5 members + JRC + EARTO)	31/12/2018	JRC technical reports

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432 - TTO JRC.I.4	441 - RegInnoPar Regional Innovation Partnerships	In the frame of its technology transfer activities, the JRC supports the development of regional innovation ecosystems in Europe. In particular, the Unit DDC1.03I.4 Intellectual Property and Technology Transfer will coordinate technology transfer initiatives in the context of the EU macro-regional strategies, by fostering knowledge exchange for the development of innovation ecosystems in the four existing macro-regions (Danube, Alpine, Adriatic-Ionian and Baltic). This project incorporates parts of the previous project "JRC Science Parks Initiative (SPI)" whose objective is to foster connectivity at European level between science and business; The project will be implemented in collaboration with JRC-IP colleagues from the Unit A.3 Interinstitutional, International Relations and Outreach, and Unit B.3 Territorial Development (in particular for smart specialisation), as well as external partners such as IASP (International Association of Science Parks), AST-Proton (association of technology transfer practitioners) and and WIPO (World Intellectual Property Organisation). Following the collaboration with IASP in results achieved in 2016/7 on the Danube macro-region, the Support measures to establish an enabling environment to encourage intra-regional cooperation on research, increase levels of collaboration with industry and SMEs, and further foster the integration of the region into the European Research Area (ERA) and Innovation Union. The Action is aimed at strengthening Technology Transfer capacity in the framework Western Balkans Region	JRC.I.4 Sloyan KAYMAKCHIYSKI	11.2.b	REGIO	JRC	Katja Reppel (REGIO)	GROW NEAR RTD		01/01/2016 31/12/2018	INS-RS	201802	Innovation Week	An innovation week will be organised in the second half of 2018 to make progress in the training and coaching of technology transfer professionals from the Danube Region	31/12/2018	JRC technical reports
432 - TTO JRC.I.4	3825 - WETTS Western Balkan Technology Transfer Support		JRC.I.4 ELENA ANDONOVA	11.2.b	NEAR	NEAR	Marcin BRAUHOFF	RTD		01/07/2016 31/12/2018	CON-AA	201801	report from different workshops and training	the work will involve a series of workshops on specific topics relevant to technology transfer. The first one will be held in Croatia in March on bankable innovation projects. They will result in technical reports with review of current status and policy recommendations	31/12/2018	JRC technical reports
												201802	design of a proof of concept programme for the western balkans	a regional programme for proof of concept funding will be designed with EIB and the beneficiary countries with a view to its possible launching in 2019	30/06/2018	JRC technical reports