# Thematic evaluation of the Joint Research Centre's activities in the area of "Security and Anti-Fraud"

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**The Evaluation Panel**

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# 1 Chairman's introduction

This evaluation showed that all JRC staff involved in the thematic area "Security and Anti-Fraud" are highly motivated to participate and help with the evaluation process. Also, it was welcomed that the evaluation could be carried out in an open atmosphere that allowed all matters to be addressed and efficiently be dealt with. As the chairperson I therefore thank the director and all staff engaged with this endeavour for their cooperation that allowed efficient progressing with the work even within the given short amount of time.

With the very nature of an evaluation more focus within the report is given to those areas that deserve attention and change. It should upfront and explicitly be mentioned that the evaluation team not only did pay attention to, but also value every item brought in front of the team during the presentation or the request for information phase. However, to keep the evaluation report as short as possible some of these items are by nature of such report less visible in a report that should also provide recommendation and possibly guidance for improvement of the overall situation.

In general security is a horizontal matter and therefore extreme attention is needed to keep activities within the canvas of given strategies. Combining this nature with research adds a further layer of challenges as the terms and conditions are generally those of administrative bodies and do not make specific exceptions. Such effects are mainly seen with the acquisition and the dynamics of the human resources. This factor has an enormous influence on the overall performance. Still it is only included as one aspect inter alia in the evaluation report as such because neither the thematic area, nor the director, nor the people working within this thematic area, have a possibility to make a general change of the situation from inside their organisation. It still deserves being mentioned in the introduction since it is one of the major causes and food for criticism.

Due to the short time allocated to the evaluation, the panel focussed its work on general and strategic questions and could not address all financial or deep scientific issues. Also benchmarking with other top R&D organisations in this field was not feasible. From the 16 questions mentioned in the Terms of Reference, the questions VIII, XI, XIII and XV could therefore only be marginally addressed.

As the chairperson I have to thank not only the director and the people working with us during the evaluation but also the panel for the lively discussion resulting in this report.

# 2 Executive summary

The thematic evaluation of the Joint Research Centre's activities in the area of Security and Anti-Fraud was carried out between June and October 2010. It was organised on the basis of four evaluation assignments: 1) The Rationale/Relevance of the Theme, 2) Implementation, 3) Achievements and performance level, and 4) Forward looking. The evaluation material comprised an extensive document base.

The assumption that the JRC plays a key role in the field of security research, as well as in providing scientific support to decision-making in the European Commission, was the starting point. These roles are dependent on the ways in which THE JRC is positioned in relation to technological choices and those related to areas of expertise, and international research and innovation networks.

The JRC has various tasks, of which the report focuses on the following: research activity, constructing research, producing information for decision-making purposes, contributing to the innovation cycle, and the targeting of investments.

Emphases of the JRC's roles vary, depending on whether they are examined from the perspective of JRC researchers, management, customers or partners. Differences of opinion also emerge as concerns internal and European viewpoints.

The JRC's role in European Research has long been determined on the basis of the needs of the European Commission and the Member States. The JRC has succeeded well in this role. However, in achieving a profile as a remarkable international research institution, this starting point is becoming insufficient. Constructing an internationally significant profile will continue to require cooperation with other large research organisations. However, in the future this may be achieved within the framework of global division of duties, and no longer through a single organisation.

As regards the JRC's future role, this poses an important individual challenge both to the JRC's internal development and international steering. In the light of a thematic evaluation, this challenge also involves the practices for the dissemination of research results and the organisation's internal operating methods.

# 3  Introduction and Purpose of the Evaluation

The evaluation of the Security and Anti-Fraud area took place between June and October 2010. The evaluation was carried out in line with the JRC Terms of Reference (ToR)[1]. Its aim was to address the specific evaluation questions that appear in chapter 1.3 of the ToR. In this report, the ToR questions have been copied (in boxes) next to the text addressing each one of them. However, the limited timeframe excluded directly answering the questions VIII, XI, XIII and XV.

A panel of five experts met in Ispra for a kick-off meeting on June 21-22. At the kick-off meeting the relevant JRC Heads of Unit and the IPSC Institute Director presented to the panel the activities and the results achieved in the first half of FP7 in this area. The experts were also given a facts and figures document, as well as a set of supporting documents[2] for the evaluation of the JRC actions in the area of Security and Anti-Fraud.

The evaluation was set up as a cycle starting with presentations by the JRC, a question and response session, as well as a feedback process to ensure correctness.

Following the kick off meeting, the panel requested additional information, which was provided in a document[2] sent to all panel experts at the beginning of July 2010. The JRC strategy 2010-2020 which was just issued was also provided. The panel met again, in Brussels, with the IPSC Director and the relevant Heads of Units on August 30, 2010.

This report summarizes the findings of the expert panel and provides a set of recommendations with respect to the work done in the area of Security and Anti-Fraud.

The panel remarks addressed **six broader discussion areas**. These remarks were grouped and are provided in the sequence in an aggregated way.

It is to be noted that all thematic reviews will be aggregated and worked into the formal interim evaluation of the JRC in the EC FP7, to be completed by the panel chairs before the end of 2010.

To avoid misinterpretation and to ensure optimal communication the panel requested and the JRC agreed to support with secretarial work to ensure ongoing communication and feedback.

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[1] *TERMS OF REFERENCE for the establishment of a panel of experts to carry out a thematic evaluation of the Joint Research Centre's activities in the area of Security and anti-fraud (ANNEX).*
[2] *"Security and Anti-Fraud" activities of the Joint Research Centre, 18/6/2010.*

# 4 Discussion areas

## 4.1 Thematic Issues at JRC level

In 2008 the JRC carried out an FP6 ex post review. The chairman of the review panel was Sir David King, former Chief Scientific Adviser to the British Government. The review panel produced an evaluation report [3] (the so-called King report), which included a number of recommendations, aiming at improving the effectiveness of the JRC.

> X) To what extent does the JRC give a follow-up to the recommendations of the JRC FP6 Ex-post evaluation "King-report"?

Most of these recommendations have been addressed by the development of a new JRC strategy 2010-2020, recently published in June 2010.
In response to the King report recommendation, the new JRC strategy 2010-2020 calls for a more thematic approach of JRC activities. For this reason, this FP7 interim evaluation, although being retrospective, has been divided into thematic sub-areas. As the two processes of defining the sub areas for the FP7 interim evaluation and the development of a new JRC strategy 2010-2020 were running in parallel, the definition of the thematic areas for the JRC strategy 2010-2020 slightly differs from the areas as defined for this FP7 interim evaluation. The new JRC strategy 2010-2020 is therefore already a first result of the implementation of the King report.

While the approach added complexity from the point of view of evaluation against given goals and targets since the JRC activities were carried out not being aware of this structure it was still found fruitful as it is much better oriented towards future demands and can better reflect the argumentation for effective recommendations.

Another recommendation made by the King report was that the JRC shall have a more proactive approach. The panel identified in this thematic area indeed a need for the JRC to respond very quickly to policy questions in a reactive mode. However, this may endanger the long term vision and preparation and doesn't allow having the necessary time to respond to urgent issues. A good balance is necessary to prepare the future in a pro-active mode by anticipation of future Commission needs and scientific trends and to be reactive and flexible at the same time. Priorities should be settled as early as possible to first identify these evolutions, through political and technology watch, open seminars and then to concentrate the efforts on the most important questions.

In the Security and Anti-Fraud area, as in several other areas, ICT is both an enabling technology as well as a research theme. The JRC does not address scientific fields per se in isolation; they are almost always closely linked to application areas. The experts however notice that, despite the fact that most of the JRC activities are ICT based; a

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[3] *Ex-post Evaluation Joint Research Centre Direct Actions in the 6th Framework Programmes 2002-2006 Final Report September 2008*

clear ICT research strategy has not yet been endorsed at JRC. No transverse or coordinated approach exists yet at least in a formal way for ICT. In addition, ICT security, which is not only cyber-security, is embedded in several JRC themes while the theme Security and Anti-Fraud addresses only some related topics despite the fact that it has some experience to go beyond this limited mission.

> XVI) What options should be explored for the future orientation of the thematic areas and the overall non-nuclear activities of the JRC in view of the EU 2020 strategy?

**Recommendation:** **The panel considers that ICT research is a necessary and promising research area for the JRC as a whole and constantly bringing in new aspects. Given the 4% of JRC resources to be dedicated to "new areas" under the new JRC strategy 2010-2020, additional resources should be given to the Thematic Area "Security and Crisis Management" for the research in ICT security with a clear focus within identified limits.**

Such clear focus together with coordination as concerns the research target with other parts of the JRC, relevant Commission DGs and EU Agencies (e.g. ENISA) allows forward looking and efficient orientations.

A similar question concerns the space applications, especially for security, which are also embedded in several institutes and themes and not addressed globally in the most efficient way.

## 4.2 Position of the Security Theme within the JRC

Despite the fact that security is not per se an EC "Grand challenge", the expert's panel stressed the importance of the security theme as highly relevant to the needs of European citizen. Consequently, they would suggest that it is put high in the agenda of European policy makers.

> I) To what extent are the objectives and the approach of the activities in this thematic area pertinent to the needs and problems European of policy makers?

The JRC security strategy was defined at first in June 2006 and subsequently endorsed by the JRC Board of Governors and by "Customer DGs". In FP7, the JRC has been continuing its effort to implement that strategy.

With the present thematic areas scheme, IPSC appears to be the only JRC Institute contributing to the security theme. The thematic area (security) shall keep an eye on the other thematic areas, in order to see in what way formal and informal collaborations could be established, also to avoid being singled out in the new JRC organization.  A number of examples of positive collaboration already exist, e.g. for the crisis caused by the Iceland volcanic ashes four different JRC institutes (now belonging to different thematic areas) were involved. Moreover, the Security and Anti-Fraud area is closely related to the areas of Energy Security, GMES, as well as to the Security of Transport Infrastructures. A transversal approach could also be addressed with other institutes for water and food security and climate change impacts.

The constant need and demand for ad hoc research activities is a means to integrate with other institutes challenging the streamlining and strategy orientation at the same time. It is important that the balance therefore be set out with the strategy.

The experts noted some discrepancies between the JRC area of Security and Anti-Fraud, and the new thematic area "Security and Crisis management". In addition, the IPSC currently embraces other activities than just Security and Anti-Fraud or Security and Crisis management. In all these numerous fields of activities, the volume of available resources is limited by this fragmentation.

In the near future, it is suggested to focus the ongoing activities under the theme "Security and Crisis management" and to assign more resources to a smaller number of projects to achieve a critical mass within well defined priorities.

The experts note that the governance model for Security and Anti-Fraud is expected to be redefined under the new JRC strategy 2010-2020. They note, also, that thematic areas lead Directors have recently been appointed (July 2010). Also, several staff positions, such as the Thematic Area Programme Managers, are expected to be defined and appointed soon.

The Security and Anti-Fraud Theme seems to be somewhat artificially composed by ongoing and ad hoc JRC activities. However, the experts consider that the theme was just established prior to the reviews, with the intent of facilitating the evaluation by the reviewers. This was a central JRC decision. The themes for the FP7 interim evaluation were chosen in the middle of the transition period from Institutes to Thematic Areas, therefore they are broadly - but not fully - in line with the future thematic set-up of the JRC.

**Recommendation: The isolation of the Security and Crisis Management Thematic Area, with respect to the other Thematic Areas as defined in the new JRC strategy 2010-2020, shall be adequately resolved; synergy and improvement in networking across Thematic Areas is considered essential as well as a focus on strategic priority research projects.**

## 4.3 Portfolio of the Theme "Security and Anti-Fraud"

The experts note that there are examples of successful collaboration between different JRC actions, especially in competitive projects, where joint participation is recognized. There seems to be, however, a considerably limited connectivity between the single actions' activities in the Thematic Area.

Additionally, the degree of information known about other actions' / units' activities seems to deserve improvement. The portfolio of the Theme appears to be arbitrary, and there is limited strategic alignment visible. Anti-Fraud is not clearly described and justified when looking at the portfolio. This may be due to the existing institute-centric structure, which is expected to be followed up by "thematic governance" soon. The experts expect this approach to foster better collaboration across actions.

The Security and Anti-Fraud theme seems to have a strong reactive approach driven by requests and much less a <u>proactive</u> and strategy oriented <u>approach</u>. The concern is that the work JRC does is on-request by customer, rather than being based on following its own strategic line. As a result, the experts recommend that a budget is assigned to work with a more anticipatory/proactive nature.

> VI) Is the balance between the different activities in this area appropriate and is the level of funding adequate to achieve the objective set in the context of the EC FP7?

The experts note that this remark has already been made by the King report. A certain number of proactive approach examples do exist (e.g., in the area of EUROCODES - development of standards, where the JRC has been actively doing research for more than 10 years, in the area of Container Security, in relation to the work done for Euratom and IAEA for nuclear seals, in the area of the Deposit Guarantee Scheme). Therefore, the panel is confident that the JRC can move fast towards this direction. Finally, an element of proactivity could also be offered by the exploratory research scheme.

> II) To what extent is the policy support work based on relevant, sound and innovative science results?

Simple tools such as seminars with external experts, scientific and technology watch for instance involving also other parts of the JRC could be of value to anticipate new needs in a transparent manner.

<u>Recommendation:</u> **Proactivity should be addressed in a more structured and transversal manner to ensure efficiency and sustainability, i.e., a better balance between reactive and proactive approach is needed.**

The panel considers that proactivity is strongly connected to another element in the governance of the Thematic Area, i.e. the presence of senior/scientific advisers, as foreseen in the new Thematic Area Advisory Boards. This is foreseen by the new Thematic Area structure and has been recommended by the King report. The panel is convinced that this is an essential element in order to help the thematic areas be more proactive, and thus visibly increase the scientific content and value of the JRC work. At

the same time this approach contributes to an improved and professional communication strategy.

**Recommendation: The governance processes at the JRC shall be set out in a more clear manner and responsibilities shall be made clear, especially with the introduction of the new Thematic Areas concept. The recent appointment of TA Lead Directors is considered a positive step in that direction.**

Operational services to the Commission DGs or EU agencies are developed without a mid-long term perspective to hand them over to an appropriate operational player. The operational and maintenance expenses of such services could become a burden to the scientific work. It is clear, however, that developing and operating a service are two different processes. That said, it is considered that the operational part can be run by the JRC only for a limited amount of time.

The panel suggests that the JRC develops a mechanism to make sure that the various phases (research, development, pre operational and operational where justified) are well separated. They also suggest that project cycles including potential operational phases by third parties are identified and defined, where the assignment of a project to a specific type of project cycle should happen in an early stage of the project so as to avoid resources of the thematic area being blocked by operational tasks that could equally be done by non research personnel. Early introduction and collaboration with industrial/operational players would also allow the support of innovation and the European Technical and Industrial Basis.

> IV) How does this added value compare to the baseline options (i.e. no EU-policy/no change from FP6 to FP7)?

The panel considers that the JRC in this area is less active in FP7 than in FP6. The JRC seems to be a victim of its success, as in the last few years it has gained a considerable amount of competitive work by contracts with policy DGs.

JRC scientists and researchers must "choose" between participating in the evaluation of FP7 programmes and partnering in projects. The Experts recommend that the JRC participates to both evaluations and projects, to remain an inseparable part of the European scientific community. The experts consider this not to be a conflict of interest, as it appears to be a common practice with FP7-participating bodies to suggest evaluators (while avoiding potential personal conflicts)

Standardisation is key for innovation. A good example is the development of the Eurocodes by CEN TC 250, on the basis of JRC research and DG ENTR political guidance. An active certification / verification / validation role alone

> VII) Are the facilities of the JRC appropriate for achieving its objectives in this thematic area set in the context of the EC FP7?

> III) To what extent do the JRC activities in this area provide (Community) added value

might, however, take the JRC away from being a research organisation.

The JRC shall not become an operational body. This strategy should also apply to standardization. The JRC role in the whole EU standardization process, which also involves research and development to establish proper standards in new security related areas is however an issue. For instance, some testing and "certification" facilities are needed in neutral places in Europe: as an example, currently Software Defined Radio systems can only be certified in the US by US institutes which is detrimental for the European industrial intellectual property and confidentiality. This role of a European test and validation laboratory should be emphasized in the future in the fields where the JRC and the IPSC in particular have recognized competencies and facilities.  The future "EU security label" that is currently under discussion in some fields could be a driver for this activity. The JRC, which is independent from national or commercial interests and by nature European, can play this role.

**Recommendation: The JRC should have a role in standardization, with an eye towards carrying out pre-normative research in the areas where its competences and unique research facilities could be best exploited. The present staffing and installment of the JRC does not allow for operational tasks (like becoming a certification body) that exceed an experimental phase.**

Availability of a European testing facility for strategic equipment and systems when only non-European organisations exist (for instance for software defined radio, etc). is a crucial aspect for industry and for European governance. With this regard the Security and Anti-Fraud Theme should contribute to the dissemination and implementation of their strategic results. Especially facilitation and fostering European testing facility for strategic equipment by appropriate bodies, where in some cases, public sector entities might be the best or even the only viable solution.

## 4.4 External Collaboration

Although the JRC has a large number of collaborating partners within the Theme of Security and Anti-Fraud, no strategic or top-down development of collaborations plan is visible and in place. The JRC has a high number of partners that, due to its size, needs better focus and a clearer and effectively co-ordinated approach. The JRC is a well-networked organization, but its networking potential is too broad thus lacking structure. In addition, its participation in FP7 networks of excellence or other indirect actions was limited as mentioned in the previous paragraph. This did not allow to identify key partners or "suppliers" through such collaborating projects.

> XIV) To what degree did the JRC participate in networking activities under the indirect actions of FP7 and what is the level of the network partners?

JRC Research programmes could better complement research projects co-funded by DG RTD and Industry by being more active now in such projects.
It could also benefit from a participation in open forums preparing the FP 7 and 8 orientations and projects, such as the Integrated Mission Groups on Security (IMGS) which gather academia, SMEs and research and technology organisations (RTO) in a transparent way.

The JRC mission is to support the policy makers, so the need for future research only is not sufficient and research activities must be seen in the light of the JRC mission. Therefore, the JRC appears to be quite different from a classic research institute.

The experts recommend that the JRC should develop a network of excellence with relevant laboratories (public or private), so as to federate the best knowledge available in Europe. They note, however that this could be done only after the Thematic Area has adequately focussed its activities (e.g., towards the areas of Monitoring and Surveillance / Infrastructure Protection), which would enable the JRC to identify key partners.

The JRC strategy for collaborating with non-EU scientific institutions is also essential. The focus should be on research and an element of protection and security shall be present. Also there should be balance in the exchanges, in terms of resources and availability of research results.

The JRC shall establish solid partnerships with major security research organizations in the Member States. This is necessary to improve the European Research Area, achieve a good complementarity with national programmes and prepare eventually some joint programming, with the JRC bringing the EU added value. The JRC could even employ these organizations for contract research, in case its own staff and equipment cannot cope with demand.

Cooperation with Industry and SMEs deserves also a specific attention in order to contribute to the EU innovation policy. Without creating any competition problem, the JRC should be encouraged to develop a wider network of industrial partners through projects and other relevant initiatives in order to address and transfer as soon as possible the exploitation of its results when possible and support EU innovation in the security area.

**Recommendation: A strategic cooperation policy for external organisations including research and security entities of other Commission DGs and EU Agencies (e.g. ENISA) shall be put in place and strategic partnerships shall be developed following this plan, so as to complement and replace the existing ties with various organizations. The JRC shall also be more involved in stakeholder's forums including also the private sector.**

## 4.5  Scientific Positioning

The expert panel considers that both the researchers and the research done at the JRC are of high value and quality. Monitoring and Control research is of high quality. Critical Infrastructure Protection area has clear role in policy making, research and innovation. Crisis Management research is clearly of high quality and sometimes has global view.

> V) To what extent does the JRC has the competences required for achieving its objectives in this thematic area set in the context of the EC FP7?

The quality of the JRC work is assessed annually by the Periodic Actions Review (PAR) exercise in the categories of scientific outcome and policy support. The PAR results are for management information. Key Performance Indicators are also used to measure performance. Reporting however needs improvement as the currently available tools are considered by the scientists more a burden than a real help.

The Experts suggest that the research work of the Institute should be made more widely accessible and visible, not only through electronic means (e.g. websites, mailing lists, etc.), but also by participation of researchers to leading international conferences and by publishing their work in highly reputable scientific journals. Specific metrics and key performance indicators, such as Technology Readiness Levels, to assess such a performance should be established within PAR and made publicly available, at least on an annual basis.

**Recommendation: A dissemination, publication and exploitation policy should be put in place and assessed on a regular basis to support results of the research work becoming more visible and to actively contribute to networking. The researchers shall be strongly encouraged and supported to publish in high quality conferences and journals as well as to generate, manage and maintain IPR (e.g. through patents).**

The experts believe that a research centre cannot be run the same way as the administration oriented rest of the Commission; this refers in particular to staff and recruitment issues, which are considered inadequate as they are too slow, cumbersome, and - in the end - discourage the highly ambitious scientists to apply. The temporary contract rules are considered too rigid to allow timely recruitment of temporary resources for (example) new competitive contracts. Duration of temporary contracts should rather be oriented along goals and projects. A compromise shall be found to allow for a simple, fast, and flexible recruitment of temporary scientific staff. In addition, a "talent management" process could be implemented to increase the attractiveness of positions in the JRC and encourage the best results.

**Recommendation: The limitations imposed by the EC recruitment rules are strongly impacting on the scientific positioning of the Thematic Area. A compromise shall be found to avoid limitation in the scientific quality of JRC research.**

The scientific positioning of the activities presented is strong, but there is also a large share of applied research to complement the specific support for the policy makers, which is core to the JRC mission. There seems to be no clear line yet where to position the Theme between applied and basic research, as there is a strong demand for high level peer reviewed publications, on the one hand, and a strong need for applied research to connect to the JRC mission, on the other.

The experts noted, however, that the JRC is trying to improve its position in several directions (e.g., policy support, scientific output, competitive income patents, standards, best practices, etc.). This is hard to achieve and does not give a clear signal to the scientific staff on the relative importance of the various activities. The new Thematic Area structure shall clearly indicate what the priorities are and define the JRC positioning, probably as an applied research body.

> **IX)** Are the arrangements for planning, monitoring, reporting and evaluation appropriate and effective? Are they transparent?

## 4.6  External Added Value

The Theme of Security and Anti-Fraud provides its external benefit indirectly by supporting the policy makers to propose better regulations on a profound basis of FP7-funded research, beside the direct support to the Commission DGs. The benefits to the Member States and their research community (e.g. peer reviewed publications) or industry (patents, spin-offs) are rather of indirect nature. Transfer of knowledge seems to be occasion-driven and could be enhanced.

The panel considers that the mission of the JRC shall include an adequate promotion of its research results. This can, in turn, increase its visibility. The development of a stronger patent strategy is believed essential.

Closer links with the EIT (European Institute of Innovation and Technology) or the participation in a future EIT Security KIC (Knowledge and Innovation Community) could be exploited to establish a new innovation policy in security.

However, the EU policy makers are the JRC main "customers". With respect to this overarching mission, industry and SMEs are not considered as being the main "customers" of JRC expertise. RTOs are considered research allies and partners of the JRC (as well as industry…).

> **XII)** Referring to the considerance of the Council Decisions ("whereas" clauses) to what extent do the JRC's FP7 direct actions in this area:
> a) Provide customer driven support to European policy makers?
> b) Engage in international cooperation activities for the purpose of implementing the JRC programme?
> c) Promote the integration of New Member States' /Candidate Countries' organisations and researchers in its activities in particular on the implementation of the S&T components of the *acquis communautaire*?

JRC research results are public via its publications repository system Pubsy and can be licensed to companies in the cases where IPRs exist. There is an IPR unit in the JRC offices in Brussels to formally take care of such issues. Some spin-offs (e.g. LISA radar measurements against landslides, SESAMONET walking path for the blind, medical robotics to assist laparoscopy, etc.) were developed in the past. Nevertheless, commercial profit is not in the mission of the JRC.

The JRC mission is "robust science for the policy makers". Indirectly technologically robust policies of the EC therefore contribute to the benefit of all Member States. The fact that JRC advice goes mainly to Commission Services in Brussels and therefore has limited "direct" benefit to the member states is well known by the JRC management and is regularly a problem to get the Council support on mission and budget decisions.

**Recommendation:** **The JRC Intellectual Property Rights management and the patent/licenses strategy need to be improved, as well as the procedures for transferring mature technologies and operational tasks. Visibility and benefits to member states should be better demonstrated and emphasized in the future.**

# 5  Summary of recommendations to the TA

- The panel considers that **ICT research** is a necessary and promising research area for the JRC as a whole and constantly bringing in new aspects. Given the 4% of JRC resources to be dedicated to "new areas" under the new JRC strategy 2010-2020, additional resources should be given to the Thematic Area "Security and Crisis Management" for the **research in ICT security** with a clear focus within identified limits.

- The isolation of the Security and Crisis Management Thematic Area, with respect to the other Thematic Areas as defined in the new JRC strategy 2010-2020, shall be adequately resolved; **synergy and improvement in networking** across Thematic Areas is considered essential as well as a focus on strategic research projects.

- **Proactivity** should be addressed in a structured manner (a better balance between reactive and proactive approach is needed).

- The **governance processes** at the JRC shall be set out more clearly: responsibilities shall be made clear, especially with the introduction of the new Thematic Areas concept. The recent appointment of TA Lead Directors is a first, positive step in that direction.

- The JRC should have a **role in standardization,** with an eye towards carrying out pre-normative research in the areas where its competences and unique research facilities could be best exploited. The present staffing and installment of the JRC does not allow for operational tasks (like becoming a certification body) that exceed an experimental phase

- A strategic policy for cooperation with external organizations including research and security entities of other DGs and Agencies (e.g. ENISA) shall be put in place. **Strategic partnerships** shall be developed following this plan, so as to complement and replace the existing ties with various organizations. The JRC shall also be more involved in stakeholder's fora including the private sector.

- A **dissemination, publication and exploitation policy** should be put in place and assessed on a regular basis to support results of the research work becoming more visible and to actively contribute to networking. The researchers shall be strongly encouraged and supported to publish in high quality conferences and journals as well as to generate, manage and maintain IPR (e.g. through patents.

- The limitations imposed by the EC recruitment rules are impacting on the **scientific positioning** of the Thematic Area. A compromise shall be found to avoid limitation in the scientific quality of JRC research.

- The JRC **Intellectual Property management** and the patent/licenses strategy need to be improved, as well as the procedures for transferring mature technologies and operational tasks to the private sector.

**Annex**

**TERMS OF REFERENCE**
**for the establishment of a panel of experts**
**to carry out a thematic evaluation**
**of the Joint Research Centre's activities in the area of**
**Security and anti-fraud**

# 1  Introduction

The Seventh Framework Programme of the European Community (EC)[4], the Seventh Framework Programme of the European Atomic Energy Community (Euratom)[5] and in particular their two specific programmes[6,7]  for the direct actions carried out by the Joint Research Centre (JRC), specify the need to carry out interim and ex-post evaluations of the JRC's actions under these programmes.

Previous evaluations of the JRC targeted both EC and Euratom framework programmes at the same time with all scientific themes in one single exercise. Since the Ex-post FP6 evaluation of the JRC activities in 2008 recommended[8] changing to smaller evaluations focusing at thematic level instead; the JRC decided to follow suit and organise its interim evaluations of FP7 based on a series of thematic evaluations.

The ex-post FP6 evaluation already pointed out that the policy-theme structure that FP7 uses for the JRC work programme is not appropriate for a thematic evaluation. Moreover, it strongly suggested that the JRC should make "*smaller, competence or sector-oriented external evaluations*". The JRC decided to follow this recommendation and introduced the term "thematic evaluations" for these smaller evaluations, to indicate a distinction from "programme evaluation".

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[4]  Decision (1982/2006/EC) of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), Official Journal of the European Union L 412/1;

[5]  Council Decision (2006/970/Euratom) of 18 December 2006 Concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011), Official Journal of the European Union L 400/60;

[6]  Council Decision (2006/975/EC) of 19 December 2006 concerning the Specific Programme to be carried out by means of direct actions by the Joint Research Centre under the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013), Official Journal of the European Union L 400/368;

[7]  Council Decision (2006/977/Euratom) of 19 December 2006 concerning the Specific Programme to be carried out by means of direct actions by the Joint Research Centre implementing the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011), Official Journal of the European Union L400/434;

[8]  Ex-post Evaluation, Joint Research Centre Direct Actions in the 6th Framework Programmes (2002-2006), Final Report September 2008 and the response from the Commission: "Ex-post evaluation of the Direct Actions under the Sixth Framework Programmes for Research Technology Development and Demonstration carried out by the Joint Research Centre", SEC(2008)3105

The JRC is currently developing a corporate strategy around a number of core themes as recommended in the ex-post FP6 evaluation and the organisation is gradually converging towards a future programme structure. Without pre-empting the structure of the corporate strategy, the JRC adopted the following working structure to facilitate "thematic evaluations" that will feed into the interim "programme evaluation":

- *Security and anti-fraud*
- *Sustainable management of natural resources*
- *Contribution to the Lisbon agenda*
- *Safety of food and consumer products*
- *Energy and Transport*

A sixth thematic area in the JRC work programme is that of *Nuclear safety and security* funded through the Euratom framework programme. In February 2010 a panel of external experts finalised the interim evaluation of the JRC direct actions in the Euratom FP7 *de facto* completing a thematic evaluation in the field of nuclear safety and security.

These are the terms of reference for a panel of experts set up by the JRC to carry out a thematic evaluation of its activities in the field of *Security and anti-fraud* in the context of an overall EC FP7 interim evaluation of the JRC's direct actions. This panel of experts will analyse existing evidence on the activities of the JRC, and prepare a final report in which it will provide conclusions and recommendations as regards the JRC's implementation of its activities related to Security and anti-fraud under the EC FP7.

# 2   Mandate, deliverables and timetable

## 2.1  Legal basis

The EC FP7 legal text[1] contains the provision for an interim review in the Article 7.2, which states: *"No later than 2010, the Commission shall carry out, with the assistance of external experts, an evidence-based interim evaluation of this Framework Programme and its specific programmes building upon the ex-post evaluation of the Sixth Framework Programme. This evaluation shall cover the quality of the research activities under way, as well as the quality of implementation and management, and progress towards the objectives set."*

The relevant ex-post evaluation referred to in the legal basis is the ex-post FP6 evaluation of the JRC[5].

Specific inter-institutional and Commission requirements further frame this evaluation; in particular those related to the Financial Regulation (Article 27.4), the Implementing Rules (Article 27.3)[9] and evaluation standards[10].

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[9]      Council Regulation (EC, Euratom) No 1995/2006 of 13 December 2006 amending Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 390 of 30.12.2006, p. 1) and Commission Regulation no. 478/2007 of 23 April 2007, amending Commission Regulation no. 2342/2002 (OJ L 111 of 28.4.2007, p.1)

[10]      "Responding to Strategic Needs: Reinforcing the use of evaluation", SEC(2007) 213.

## 2.2 Objectives and scope

The objective of the panel will be to carry out a thematic evaluation of the research and associated policy-support activities of the JRC in the field of *Security and anti-fraud* that establishes fact-based answers to the evaluation questions set out in section 2.3.

The thematic evaluation takes place out in the context of the interim evaluation of EC Seventh Framework Programme for research and training activities (2007 to 2013). Together with the other thematic evaluations this evaluation will be subject to a meta-evaluation that will allow the European Commission to assess the continued relevance of the framework programme's objectives, and to review initial outputs and the early effects of the programme.

## 2.3 Evaluation questions

This interim evaluation covers JRC activities carried out under the Seventh Framework Programme EC (2007-2013) in the thematic area of *Security and anti-fraud*. It should provide substantive answers to the evaluation questions listed hereafter:

*Rationale/Relevance*

i) To what extent are the objectives and the approach of the activities in this thematic area pertinent to the needs and problems European of policy makers?

ii) To what extent is the policy support work based on relevant, sound and innovative science results?

iii) To what extent do the JRC activities in this area provide (Community) added value

iv) How does this added value compare to the baseline options (i.e. no EU-policy/no change from FP6 to FP7)?

*Implementation*

v) To what extent does the JRC has the competences required for achieving its objectives in this thematic area set in the context of the EC FP7?

vi) Is the balance between the different activities in this area appropriate and is the level of funding adequate to achieve the objective set in the context of the EC FP7?

vii) Are the facilities of the JRC appropriate for achieving its objectives in this thematic area set in the context of the EC FP7?

viii) To what extent does the JRC run its activities in this thematic area in a cost-effective manner?

ix) Are the arrangements for planning, monitoring, reporting and evaluation appropriate and effective? Are they transparent?

x) To what extent does the JRC give a follow-up to the recommendations of the JRC FP6 Ex-post evaluation ("King-report")**Error! Bookmark not defined.**?

*Achievements and performance level*

xi) What are the indications in the early outcomes of the activities that the overall and specific objectives of the EC FP7 can be met?

xii) Referring to the considerance of the Council Decisions ("whereas" clauses) to what extent do the JRC's FP7 direct actions in this area:

    a) Provide customer driven support to European policy makers?

    b) Engage in international cooperation activities for the purpose of implementing the JRC programme?

    c) Promote the integration of New Member States' /Candidate Countries' organisations and researchers in its activities in particular on the implementation of the S&T components of the *acquis communautaire*?

xiii) To what degree do the JRC activities in this thematic area support the creation of the European Research Area, e.g. through provision of access to JRC's facilities and contribution to the mobility and training of (young) researchers?

xiv) To what degree did the JRC participate in networking activities under the indirect actions of FP7 and what is the level of the network partners?

xv) From an expert point of view, how does the work in this thematic area compare to similar work done at top organisations in the relevant fields?

*Forward looking*

xvi) What options should be explored for the future orientation of the thematic areas and the overall non-nuclear activities of the JRC in view of the EU 2020 strategy[11]?

## *2.4 Milestones and deliverables*

The panel will start the thematic evaluation with a kick-off meeting to agree on the detailed workings of the panel.

The panel will make an advanced draft final report available for the interim evaluation of the JRC direct actions in FP7 on 15 September 2010 at the latest. The draft report will contain the main findings and recommendations of the thematic evaluation.

The panel delivers a final evaluation report to the JRC on the "thematic evaluation of the Security and anti-fraud activities of the JRC in the EC FP7 programme" in October 2010. The report will count 20 to 30 pages, excluding annexes, with an analysis of findings, a set of conclusions and recommendations based on evidence. It should be prefaced by an executive summary, not exceeding 5 pages.

The JRC will make the findings of the report publicly available.

**Meetings**

The panel will meet up to a maximum of three times between May and September 2010.

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[11]     EUROPE 2020, A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final

# 3 Operation of the Panel of Experts

## 3.1 Composition, identification and selection of experts

The JRC Director General, in close consultation with the Board of Governors, will select five acknowledged experts in the areas of *Security and anti-fraud* and compose a panel that will carry out an independent and objective analysis of the pertinent parts of the JRC Work Programme. The panel will include a highly qualified rapporteur.

The experts will be appointed on the basis of the criterion that they have a high level of expertise in the fields of research and technological development in particular, as attested by higher education qualifications of at least doctoral level and/or proven by having won prizes and awards at national, European and/or international level and/or as evidenced by experience and skills which are widely recognised.

For the composition of the panel attention will also be paid to a balanced representation which ensures expertise in the JRC's *Security and anti-fraud* related activities, affiliation to the academic, public service non-governmental organizations and industry community, a certain geographical spread and gender balance. In addition, it will be an asset if some experts have a proven ability to assess the societal dimension and strategic relevance of the framework programme and the specific programmes.

## 3.2 Working method

The evaluation theme *Security and anti-fraud* comprises the scientific actions indicated in Table 1 given at the end of these terms of reference.

The panel of experts will base their findings on a desk analysis of achievements during the first part of FP7, presentations of selected activities, interviews with selected JRC managers, staff, clients and stakeholders and visits of selected JRC sites. Section 3.3 specifies the full "evidence base" that will be made available to the experts in electronic form (through access to a dedicated web-site) in the course of May 2010. Upon request the JRC will provide hard copies of the general information documents.

At the kick-off meeting the chair decides on the detailed working method for the thematic evaluation. The chair will see to it that the panel members and the supporting expertise are best exploited in the area of the evaluation theme Security and anti-fraud. The panel will hold up to three meetings to come to conclusions and formulate their recommendations.

The chair, in consultation with the JRC, will establish the rapporteur, who takes responsibility for preparing (compiling and editing) the final report, based on all members' written contributions and of relevant material and events identified by the panel members and/or the JRC. The rapporteur will highlight and exploit main points of reports presented by experts, create a PowerPoint presentations where necessary and draft summaries of the discussions held at meetings.

The JRC will make staff available to help organising and support the work of the panel. The staff will also provide input for the production of the report, notably through the collection and distribution of the material for the desk analysis. They will be in regular liaison with the members of the panel and notably the chairperson and the rapporteur to

ensure the smooth running of the work of the panel. They will attend the meetings to provide appropriate information and orientations. The evaluation will be designed and carried out in line with the relevant Commission standards for evaluation[10] and subject to the quality assessment criteria.

An indicative time table of the evaluation can be found in the annex.

## 3.3  Expert support and evidence-base

The panel will carry out its activities through an independent, robust, evidence-based process. At the discretion of the chairperson, appropriate independent experts can be invited to participate in discussing specific issues, including participation to meetings as required.

As evidence base the JRC will provide the panel with all necessary information, in particular:

*General information concerning*
- The baseline against which the assessment will be made  (Framework Programme, Specific Programmes, Multi-Annual Work Programme)
- General reports on progress (e.g. Annual Reports, Annual Activity Reports, results of Customer Surveys)
- Reports of previous  FP Evaluations and Commission replies;
- Relevant figures on human resources and budget implementation
- EUROPE 2020, A strategy for smart, sustainable and inclusive growth

*Specific information*
- Action reports with achievements of each "Security and anti-fraud" action in the JRC work programme during the reporting period
- Statistical information on the implementation of the research activities (i.e. publications, patents, etc.)
- Detailed publication data from the JRC's corporate publication repository (PUBSY)
- Synthesis Report on the JRC Infrastructures, JRC internal report
- JRC Strategy 2010-2020

The panel may want to have the possibility to interview selected representatives of the clients and stakeholders (e.g. European policy makers, beneficiaries of third party work)

## 3.4  Credits

The physical and intellectual works generated by the expert's assignment will remain the property of the Commission. The experts of this panel undertake not to use these works outside this assignment without the previous written agreement of the Joint Research Centre.
The published report will acknowledge the contributions of the members of the panel.

## 3.5 Administrative and financial aspects

The JRC will reimburse travel costs according to the division of labour and travel obligations amongst the panel members and according to the standard rules applied by the Commission. The total budget for the members of the panel (expert fees) and the costs of travel and daily/accommodation allowance are provided in the JRC's institutional budget for 2010.

### Table 1 Actions Thematic evaluation Security and anti-fraud

| Action | Acronym | Title |
|---|---|---|
| 11604[12] | CID | Community Image Data Portal |
| 13204[13] | ECCAIRS | Multimodal Public Transport Safety |
| 21201 | FISHREG | Fisheries Management and Enforcement |
| 21202 | VESPO | Vessel Surveillance and Port Security |
| 31001 | PRIMA | Passport, Identity Management and Access Control |
| 31003 | CORSA | Communications & Radar Sensors Networks for Security Applications |
| 31004 | CI-Supply | Tracing Technologies in the Supply Chain |
| 31005 | PVACS | Physical Vulnerability Assessment of Critical Structures |
| 31006 | OPTIMA | Open source Text Information Mining and Analysis |
| 31008 | SCNI | Protection and Security of Networked Critical Infrastructures |
| 31009 | SITAFS | Statistics and Information Technologies for Anti-Fraud and Security |
| 32001 | FLOODS | Floods - prediction, mitigation, impact assessment |
| 32002 | CI-Chem | Major Hazards and Protection of Chemical Infrastructures |
| 32003 | SAFECONSTRUCT | Risk Prevention and Safety in Construction |
| 41001 | CriTech | Crisis Monitoring and Response Technologies |
| 41002 | ISFEREA | Geo-Spatial Information Analysis for Global Security and Stability |
| 41003 | CONTRAFFIC | Containers Traffic Monitoring |

17 actions - based on PAR 2008 data resources are of the order of:
specific credits ≈ 4.5 M€ and ≈ 150 scientific staff (AD or equivalent)

### Associated action(s)

| | | |
|---|---|---|
| 11601[14] | COSIN-JRC | Community Spatial Information Network |
| 11602[10] | INSPIRE | Infrastructure for Spatial Information in Europe |

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[12]      Also associated to the theme "Sustainable management of natural resources"
[13]      Also associated to the theme "Energy and transport"
[14]      Reviewed under the theme "Sustainable management of natural resources"