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# LPIS QA RP Aggregation/Congruency test

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10 years QA, Varese, 13/03/2019



## RP aggregation

- Method to overcome non feasibility for measurement of the inspected RP
- LUI of the selected RP should be interpreted
- LUI limits should **match** the adjacent LPIS RP boundaries
- What is a match?
- What is NOT a match?



## RP aggregation reporting

If RP aggregation is applicable, than report:

- RP\_FSM = true
- RP\_MEA observed/measured in m2
- all LC classes found on aggregation
- area difference and % (agg – ref sum)
- classification correctness for aggregation
- possible contamination only for inspected parcel (+ point location)
- possible critical defect only for inspected parcel (+ point location)
- possible cause of non-conformity





# Content

- Congruency test application
- Methodology
- Examples
- Conclusion



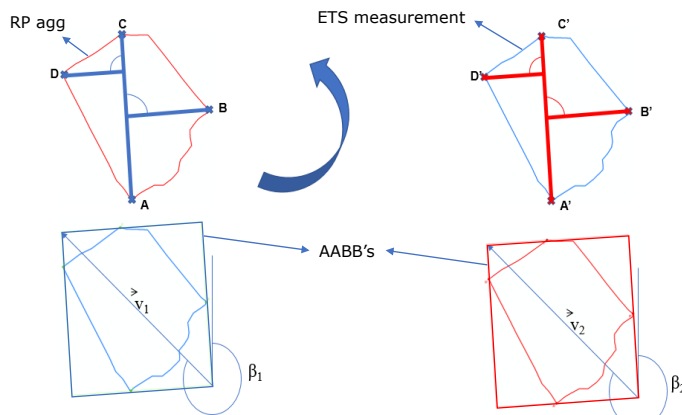
# Congruency test application

Application	What do we compare?	What do we need as an outcome?
Combined inspection	CAPI representation with GNSS measurement	a shift - to combine two measurements
Upkeep process	RP polygon with (most recent) imagery	scaling, rotation as a proof for change detection
ETS inspection – RP aggregation	RP polygons aggregation with ETS measurement	Validation of the aggregation



# Methodology

1. Identify 4 points on the first representation i.e. RP aggregation (ABCD)
2. Identify 4 points on the second representation i.e. ETS measurement (A'B'C'D')
3. Calculate the AABB's\*
4. Compare the results - validation
  - ✓ The length of the vectors ( $v_1$  and  $v_2$ ) ( $< 2.5$  m \*\*)
  - ✓ The angle of the vectors ( $\beta_1$  and  $\beta_2$ ) ( $< 1^\circ$  \*\*)



A tool available:

[https://lpis.jrc.ec.europa.eu/tools/congruency\\_test.php#data](https://lpis.jrc.ec.europa.eu/tools/congruency_test.php#data)

- \* axis aligned bounding box
- \*\* thresholds to be confirmed

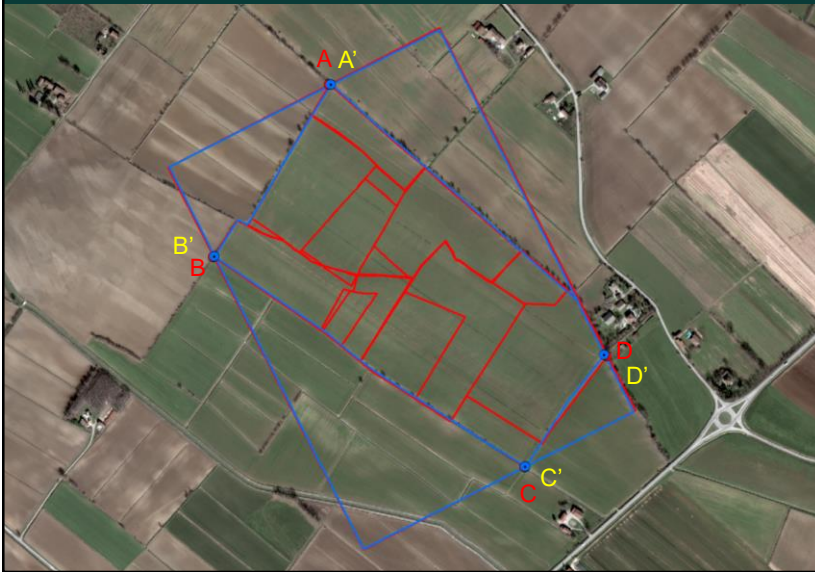




## Example nr 1



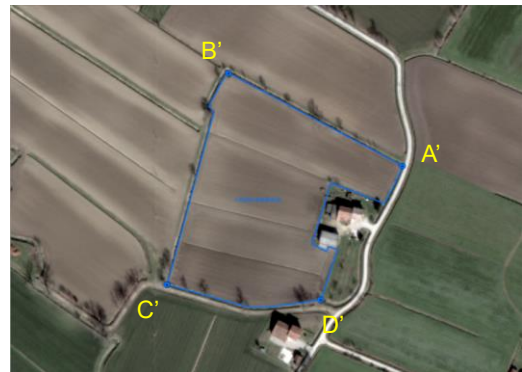


# Example nr 1

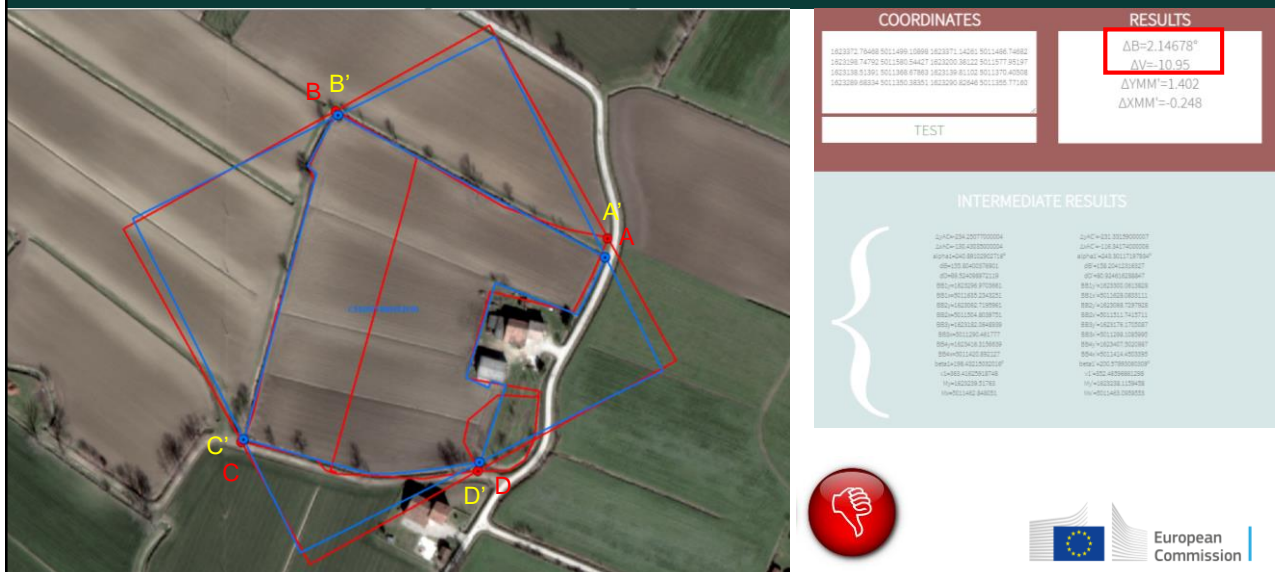


COORDINATES	RESULTS
<pre> 1825863.18177 5009484.85332 1825863.95237 5009484.79859 1825555.47000 5009597.52000 1825555.18227 5009600.94952 1826300.70912 5009636.28263 1826307.11264 5009636.74810 1826804.40368 5008628.18883 1826807.87149 5008631.48800                     </pre>	$\Delta B = -0.287002''$ $\Delta V = -4.419$ $\Delta YMM = -0.273$ $\Delta XMM = 1.261$
TEST	
INTERMEDIATE RESULTS	
<pre> d1d1=+174.347500000000 d1d2=+182.986000000000 d1d3=+182.986000000000 d1d4=+182.986000000000 d1d5=+182.986000000000 d1d6=+182.986000000000 d1d7=+182.986000000000 d1d8=+182.986000000000 d1d9=+182.986000000000 d1d10=+182.986000000000 d1d11=+182.986000000000 d1d12=+182.986000000000 d1d13=+182.986000000000 d1d14=+182.986000000000 d1d15=+182.986000000000 d1d16=+182.986000000000 d1d17=+182.986000000000 d1d18=+182.986000000000 d1d19=+182.986000000000 d1d20=+182.986000000000                     </pre>	<pre> d1d21=+182.986000000000 d1d22=+182.986000000000 d1d23=+182.986000000000 d1d24=+182.986000000000 d1d25=+182.986000000000 d1d26=+182.986000000000 d1d27=+182.986000000000 d1d28=+182.986000000000 d1d29=+182.986000000000 d1d30=+182.986000000000 d1d31=+182.986000000000 d1d32=+182.986000000000 d1d33=+182.986000000000 d1d34=+182.986000000000 d1d35=+182.986000000000 d1d36=+182.986000000000 d1d37=+182.986000000000 d1d38=+182.986000000000 d1d39=+182.986000000000 d1d40=+182.986000000000                     </pre>
 	

# Example nr 2



## Example nr 2



## Conclusion

- the congruency test as a RP aggregation validator
- applicable for parcels feasible for measurement and
  - for parcels with area-conforming result
- we continue to work on thresholds adoption



## Any questions?

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