

## LPIS QA image acquisition



[www.jrc.ec.europa.eu](http://www.jrc.ec.europa.eu)

Serving society  
Stimulating innovation  
Supporting legislation

## Dedicated LPIS QA zoning

Original discussion: use of CwRS zones causes minimum impact

<https://marswiki.jrc.ec.europa.eu/wikicap/images/7/7e/11402final.pdf>

- Specifications are roughly similar (area measurement)
  - No extra financial impact for existing CwRS programs
  - No extra planning provisions need for CwRS programs
- CTS guarantees sufficient OTSC density (QE7)
- Perfect integration from IACS processes possible
- OTSC risk is (mostly) unrelated to LPIS quality so can be ignored

## In practice

- CwRS program maximizes area (5% OTSC) not image quality
  - Several MS use proprietary aerial
  - Use of IKONOS (phasing out)
  - Viewing angles
- Some OTSC zoning does not respect the CTS OTSC density
  - Low QE7 sample
  - Too spread out for field observations
- Misunderstanding OTSC risk zone and LPIS QA impact
  - Unrepresentative sample
- Some MS use square scenes, other administrative boundaries
- Acquisition windows do not necessarily match
  - crop identification vs land cover delineation
- Some OTSC and LPIS administrations do not collaborate  
UNACCEPTABLE in IACS

## Objective

Reg 2014/640 (HRZ) art6.2 : "Member States shall perform the assessment referred to in the paragraph 1 on the basis of a sample of reference parcels to be selected and provided by the Commission. They shall use data allowing to assess the current situation on the ground."

Two concerns:

1. Assure absence of bias :

Each reference parcel should have an equal probability of inspection

2. Provide appropriate reference of current situation:

Most RP are designated on basis of 25cm GSD imagery, inspection must be done on impeccable images with field observation feasible

## Randomness

### Considerations

- Sensor width scenes provide geographical clustering
- Member states may not be spatially homogeneous
- Larger custodians may be subject of meteorological phenomena

These effects can be compensated by

1. Stratifying the zone distribution in case of large territories
2. Weighting the sub-sampling within the zone

## Scene determination

1. Scene size ca 15kmx15km
2. Scene capture determined on-the-fly solely by these drivers
  - Acceptable atmospheric conditions
  - Favorable sensor orientation
  - Masked by LPIS density threshold set by JRC
3. Exclusive of CwRS-campaign scenes
4. By-effect: Some LPIS QA scenes will be captured in the beginning or the end of the campaign in order not to “compete” with your CwRS campaign.  
Inform JRC if particular constraints apply!

## Image quality

Image Quality consequences :

- Multispectral WV2
- haze free (although isolated cumulus allowed)
- Nearer to nadir view expected
  - No obstruction of view path (less RFV)
  - No displacement (reliable area measurement)
  - No effects of topography (measurement less subject to DEM)
- acquisition window of the nadir is less critical

## Scene allocation

Sum of :

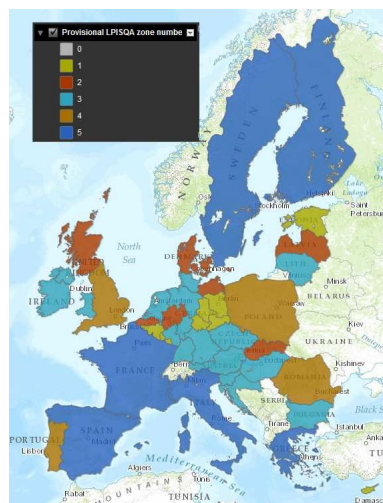
A/ sample size basis:

- 500: 1 scene
- 800: 2 scenes
- 1250: 3 scenes

B/ extra scenes for range of latitude

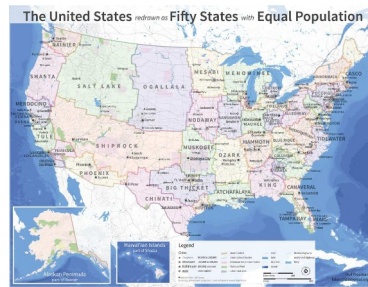
- 1 scene if  $0.5 < \sin(\text{lat}_N - \text{lat}_S) < 0.7$   
PL/PT/RO/UK-eng
- 2 scenes if  $0.7 \sin = < (\text{lat}_N - \text{lat}_S)$   
EL/ES/FI/FR/IT/SE

Overall total 121 scenes.



## Complementary rules

1. Additional scene whenever needed when required sample size is not achieved
2. LPIS territories with large range of latitude:  
Scene(s) planning will be stratified per NUTS2 portfolio for equal RP sub-population inside planning unit  
i.e. combination of NUTS2-regions  
guaranteed spread of scenes



9

## Impact on the 2015 assessment

1. Unrelated to the CwRS campaign
2. No specific LPISQA order by the MS needed (done by EC)
3. Sample pre-selection process starts as usual but pre-selection will be created/delivered only as soon as all appropriate scenes will have been acquired. (no later than end of September)
4. field observations become fewer but more stringent

### "Contingency plan"

If image capture fails, the best suitable CwRS imagery will be recovered for sampling.

### "exit" clause

Custodians who do not wish to rely on JRC/EC imagery will get their random zone location(s) or parcel sample offered by the JRC, to acquire proprietary imagery by areal or other provider.

10

## To consider:

Is the “sample size basis” appropriate from your experience?

Are there specific “window” constraints for 2015 for your conditions?

Activation of exit clause

Thank you!

