

INSPIRE Thematic Cluster on *Elevation, Orthoimagery, Reference systems and Geographical grids*

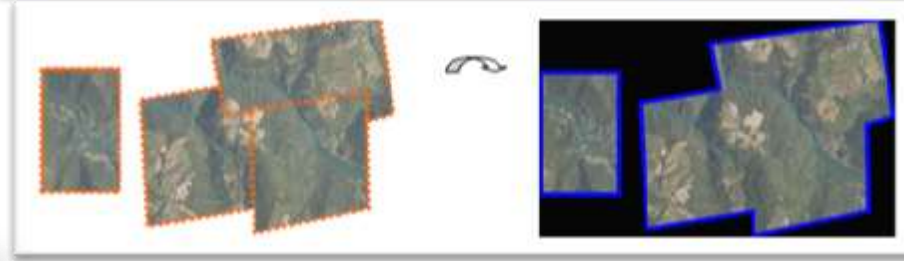
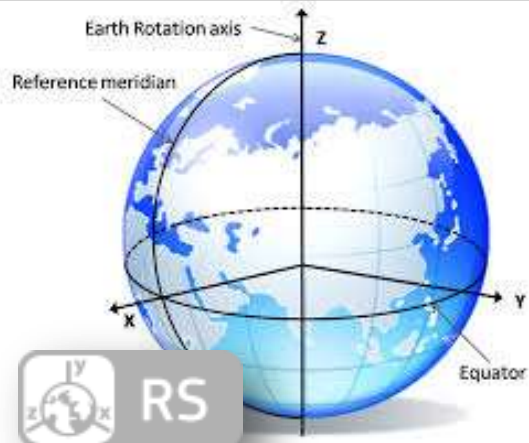
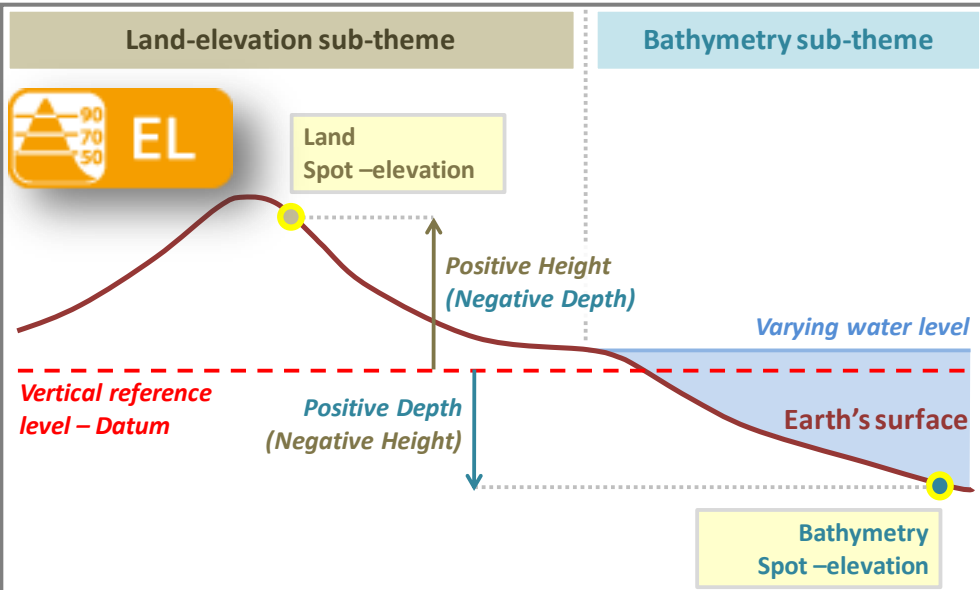
Jordi Escriu - facilitator



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*Serving society
Stimulating innovation
Supporting legislation*

Thematic cluster scope

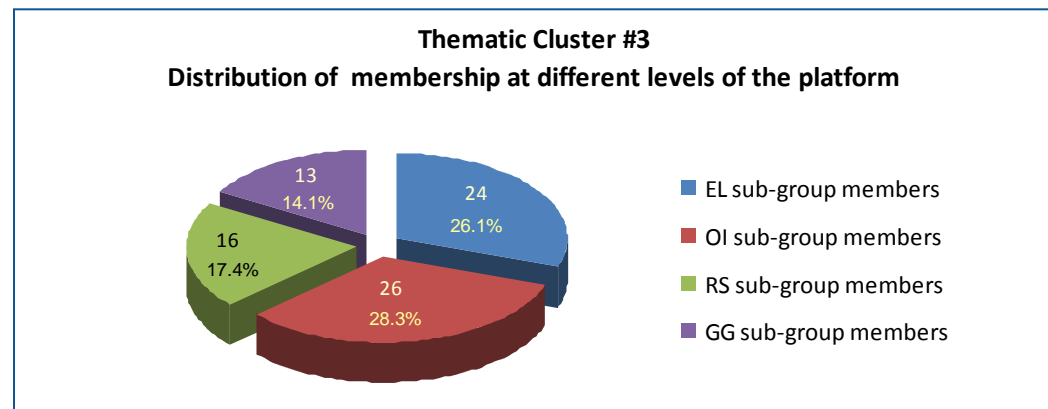


Membership

Elevation, Orthoimagery, Reference systems and Geographical grids (92)



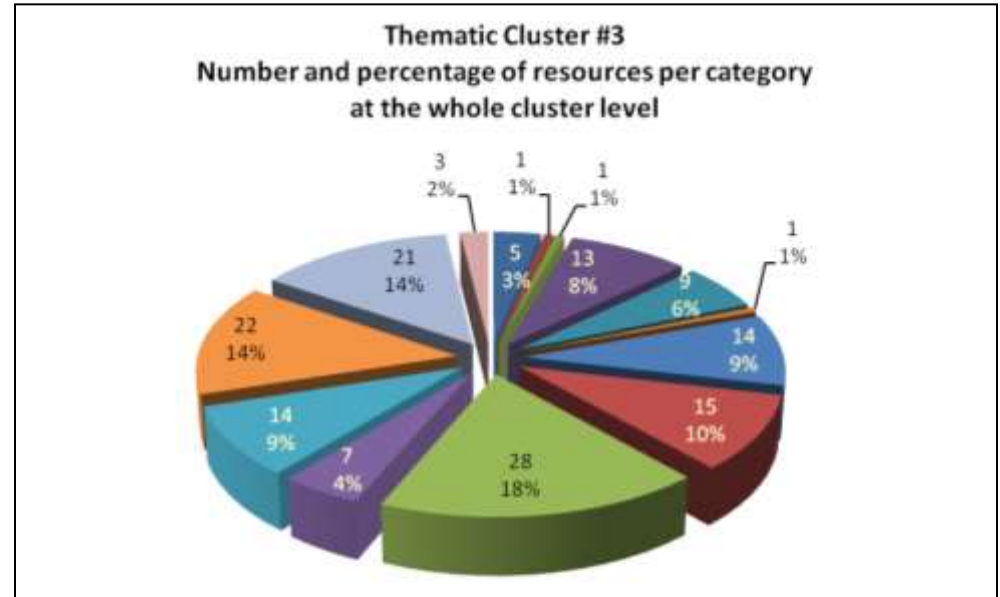
	Elevation	(24)
	Orthoimagery	(26)
	Coordinate reference systems	(16)
	Geographical grid systems	(13)



Main stakeholders: Mapping and Hydrographic agencies, Copernicus, EU agencies and organizations, EU and global coordination bodies, any potential data user

Content / Type of Resources

- Discussion topics
- Unsatisfied needs and use-cases
- Successful experiences
- Leading projects
- Applicable software tools
- Useful documentation
- News and upcoming events



Member State issues	28	18%
Interoperability, Data provision	14	9%
SW Tools	14	9%
Best practices, EU Thematic databases	5	3%
Data model / Scope	18	11%
Encoding	9	6%
Evolution / Thematic extensions	13	8%
SW Tools	14	9%
Political / Organisational network	1	1%
Interoperability	3	2%
Best Practice	7	4%
EU Thematic databases	5	3%

Figures from Phase 1 (June 2015)

Content / Examples

- **Discussions threads** (Implementation / TG evolution / ...)
How to encode OI and EL INSPIRE GML coverages (raster data)
WCS as an INSPIRE download service option for raster data
- **Unsatisfied needs / Use-cases**
Lacks of EU-DEM dataset
Official European registry of reference systems and geodetic parameters
- **Successful experiences**
Seamless OI coverage for the Grand Genève cross-border area
EuroDEM – A pan-European interoperability case
- **Leading projects**, (European / national level)
ELF, CRS-EU, eENVplus, ARE3NA, PNOT...
- **Applicable software tools**: FME...
- **Useful documentation**:
Presentations about the current TGs, Web Coverage Services (WCS)
Workshop reports: 'Map projections for Europe', 'European reference grids'



CRSEU

Coordinate Reference Systems
in Europe

ARe³NA



Interesting & Active Discussions

- **The winners (29 replies in total)**
 - How to encode the spatial extent of coverages - [domainExtent vs. gml:boundedBy](#) (16 replies)
 - [Encoding of EL and OI coverages](#) in GML - GMLCOV (13 replies)
- **In second place...**
 - [Usability of the 'Zoned Geographic Grid'](#) (13 replies)
 - [Existing validation rules](#) (10 replies)
 - Transverse Mercator projections allowed in INSPIRE - [ETRS89-TMzn and raster data for OI and EL](#) (9 replies)
 - European Grid Coordinate System naming used for EU-DEM tiles - [Copernicus RDA EU-DEM EGCS naming](#) (7 replies)
 - [Use of the 'Equal Area Grid'](#) (8 replies)
 - [Misalignment between coverages from different data providers](#) (6 replies)

Interesting & Active Discussions

- **The winners (31 replies in total)**
 - How to encode the spatial extent of coverages - [domainExtent vs. gml:boundedBy](#) (16 replies)
 - [Encoding of EL and OI coverages in GML - GMLCOV](#) (15 replies)
- **In second place...**
 - [Usability of the 'Zoned Geographic Grid'](#) (13 replies)
 - [Use of the 'Equal Area Grid'](#) (11 replies)
 - [Need more guidance for Elevation encoding - Examples based on GMLCOV schema](#) (10 replies)
 - [Existing validation rules](#) (10 replies)
 - Transverse Mercator projections allowed in INSPIRE - [ETRS89-TMzn and raster data for OI and EL](#) (9 replies)
 - [Usefulness of Contour Lines transformed to EVRS from a national height reference system](#) (9 replies)
 - [Inconsistencies/errors found in the INSPIRE TGs on orthoimagery](#) (8 replies)

Discussions on coverages and WCS in TC #3

Experiences transforming data to INSPIRE EL&OI coverages

- **First attempts, description of issues experienced, best practices, software used, etc.**

- **Examples:** IGN-France, Cuzk, Saxony, IGN-Spain

- **Related discussion thread:**

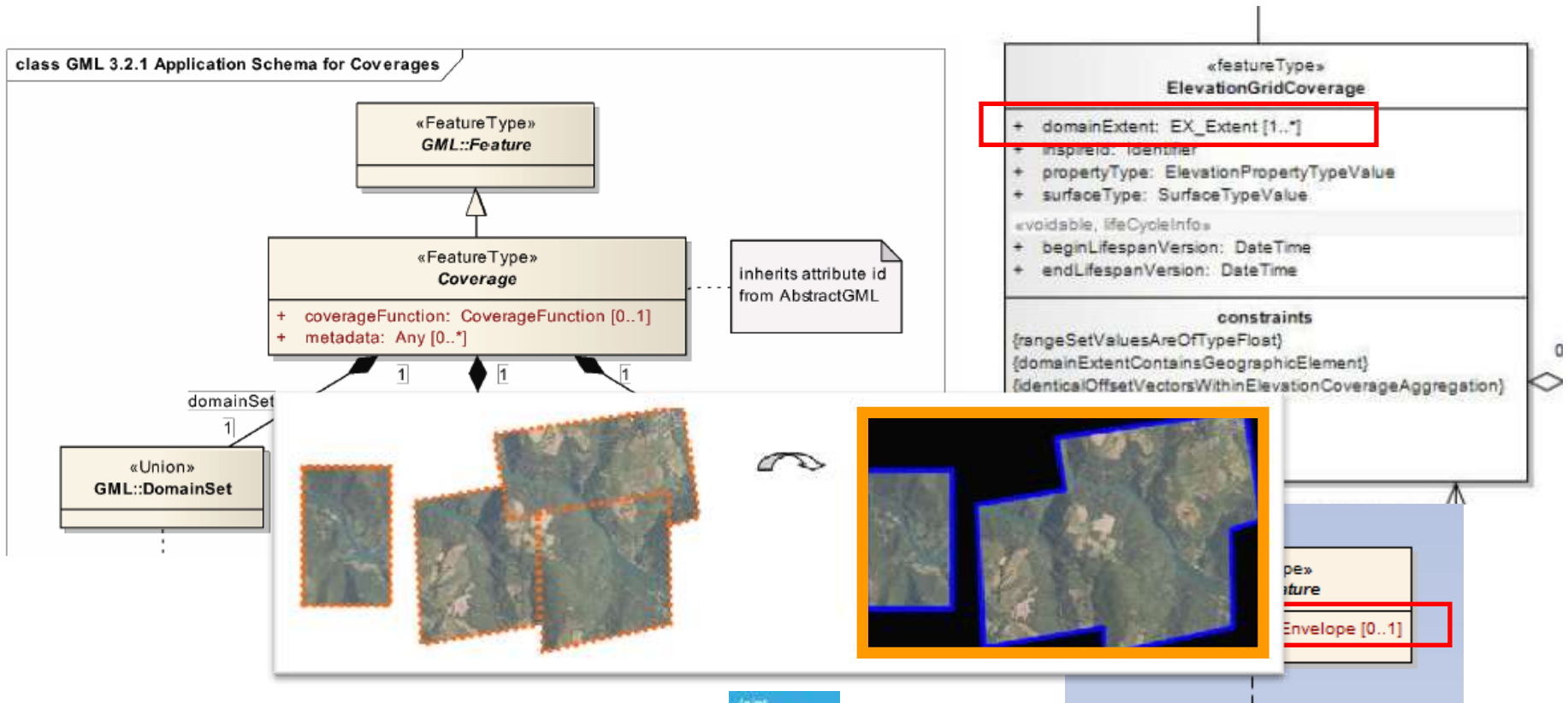
<https://themes.jrc.ec.europa.eu/discussion/view/2843/encoding-of-elevation-and-orthoimagery-coverages>

- **Questions:**

- *Did you publish your experience? And all the details?*
- *Is there any link explaining the experience?*
- *Do you know about any other experience in your MS or any other MS?*

Specific issues on encoding of coverages

- How to encode the extent of coverages
- domainExtent vs. gml:boundedBy



Specific issues on encoding of coverages

- **How to encode the extent of coverages**

- **Related discussion thread:**

<https://themes.jrc.ec.europa.eu/discussion/view/12901/do-mainextent-vs-gmlboundedby-el-oi-coverages-encoding>

- **Questions:**

- *Do you agree on the proposed solution?*
- *Do you think that more guidelines are needed in the TGs to use similar items, providing somehow repeated information? (e.g. 'metadata' hook in coverages)*

Specific issues on encoding of coverages

- **Use of OGC SWE Quantity constraint**
- Issue with the way the INSPIRE EL TG uses OGC SWE "Quantity: constraint" attribute.
- **Registered in MIG-T Redmine issue tracker:**
<https://ies-svn.jrc.ec.europa.eu/issues/2207>
- **Related discussion thread:**
<https://themes.jrc.ec.europa.eu/discussion/view/12893/use-of-ogc-swe-quantity-constraint>
- **Questions:**
 - *Have you looked at the issue? Do you volunteer?*

Provide examples in GMLCOV (for TGs)

- **INSPIRE GMLCOV examples available**, either *Multipart representation / External file encoding / Inline encoding*
- **Examples:** IGN-France, Spain (IGN, ICGC)
- **Related discussion threads:**
 - **"Example data in accordance with OI application schema (for Copernicus guidelines)":** <https://themes.jrc.ec.europa.eu/discussion/view/23508/example-data-in-accordance-with-oi-application-schema-for-copernicus-guidelines>
 - **"Need more guidance for Elevation encoding and correct example (for ElevationGridCoverage) on the basis of GMLCOV schema":** <https://themes.jrc.ec.europa.eu/discussion/view/42326/need-more-guidance-for-elevation-encoding-and-correct-example-for-elevationgridcoverage-on-the-basis-of-gmlcov-schema>
- **Questions:**
 - *Do you agree to share your example?*
 - *Do you volunteer for validating the examples?*
 - *Do you know about any other GMLCOV example in your MS?*

Interoperability issues with coverages

- **Problems across areas for different reasons:**
 - Data produced in national grids and specific production process (misalignments).
 - Data available in different formats.
- **Related discussion threads:**
 - **Misalignments between coverages produced by different data providers**
<https://themes.jrc.ec.europa.eu/discussion/view/3731/misalignments-between-coverages-produced-by-different-data-providers-eg-orthoimages>
- **Questions:**
 - *What do you think in each case? – Provide your input!*
 - *Do you know any other reasons producing such kind of problems?*
 - *Do you think that a Common European Grid (without zones) is needed? – E.g. the Zoned Geographic Grid or a similar proposal*

WCS Services

- **Provision of inputs for the work of MIWP-7b**

- **Related discussion thread:**

<https://themes.jrc.ec.europa.eu/discussion/view/22150/web-coverage-service-wcs-a-missing-piece-in-inspire>

- **Questions**

- *Do you think that WCS is a missing piece in INSPIRE?*
- *Which benefits / drawbacks do you foresee if WCS is used in the INSPIRE context?*
- *Explain you own experience and best practice with the use of WCS (evaluation, use-cases, software utilized, etc.)*
- *Any additional items to be discussed or treated by this group?*

Identify potential changes to TGs

- **Correction of known errors and 'typos'.**
- **New items to be addressed to achieve interoperability.**
- **Include GMLCOV coverage examples in the TGs.**
- **Identify existing gaps / Complete TGs** - Examples:
 - Guidelines for encoding of coverages (e.g. 'rangeType' content and structure)
 - Specific encoding rules in a specific format (e.g. GeoTIFF / JPEG2000)
- **Related discussion threads:**
 - "Inconsistencies/errors found in the INSPIRE TGs on orthoimagery":
<https://themes.jrc.ec.europa.eu/discussion/view/32920/inconsistencieserrors-found-in-the-inspire-tgs-on-orthoimagery>
- **Questions:**
 - *Do you have a list of potential changes / proposals in your MS?*
 - *Any specific item identified during this workshop?*
 - *Please, provide your input!*

Looking for your participation...



JOIN THEMATIC CLUSTER #3

<https://themes.jrc.ec.europa.eu/groups/profile/206/elevation-orthoimagery-reference-systems-and-geographical-grids-cluster>



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Facilitator Thematic Cluster #3