COPERNICUS KEN WORKSHOP

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Copernicus Services needs to access high quality in situ data, maximizing synergies and favouring data sharing policies.

Main objectives of the EEA:

1. Establishing and maintaining an overview of the state of play of in situ data for Copernicus services
2. Operational provision of crosscutting in situ data including access to reference data for Copernicus services
3. Managing partnerships with data providers to improve access and use conditions of in situ data for Copernicus services
4. Supporting the European Commission and Copernicus Service Providers or Entrusted Entities when seeking solutions for providing access to required in situ data
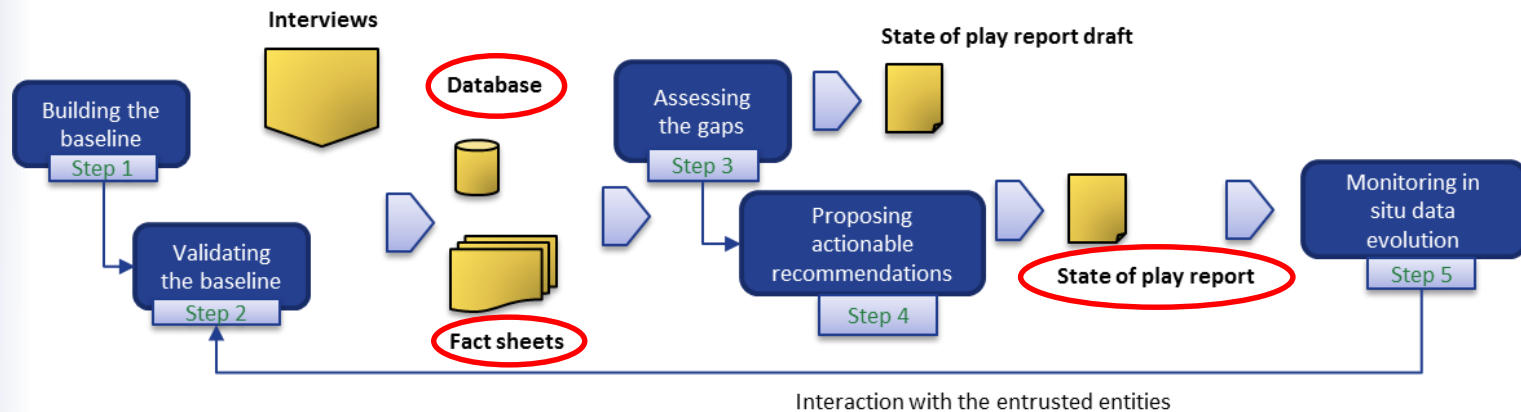
1. **Building the baseline:** the baseline of in situ data currently used or required by the Copernicus services has been developed based on preliminary desk research and existing knowledge and experience.
2. **Validating the baseline:** the baseline has been validated (and, if necessary, adjusted) through direct interaction with the Entrusted Entities of the Copernicus Services.
3. **Assessing the gaps:** the validated baseline is used to identify gaps in meeting in situ data requirements gaps, and to and prioritise them.
4. **Proposing actionable recommendations:** analysis of requirements and gaps permit the definition of actionable recommendations.
5. **Monitoring in situ data evolution:** the availability of in situ datasets will be monitored, with a view to updating the gap analysis and the requirements database based on the latest releases of relevant datasets and progress in arrangements with data providers and other stakeholders.
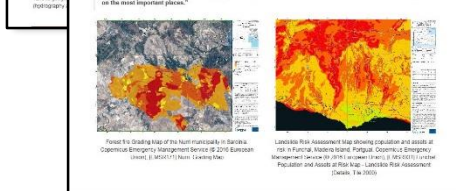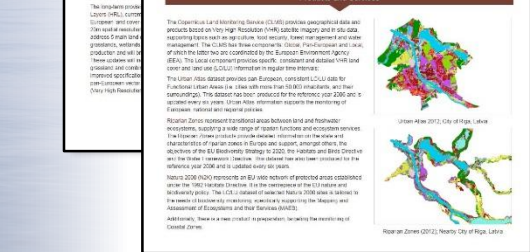
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CLMS

CEMS

CSS

- *Products and services*

- *What in situ data is required for this component?*

- *Why do we need access to in situ data?*

- *Detailed in situ data requirements*

- *Challenges and opportunities*

- *Main Critical Gaps of the Service*

https://insitu.copernicus.eu/library/fact-sheets/fact-sheets

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The crosscutting in situ data requirements database has been structured in terms of three interlinked categories of information:

1. Copernicus Services and Products: information about the Services themselves, their Entrusted Entities, the detail of each Service's components and constituent elements

2. In Situ User Requirements: data on accuracy, coverage, update frequency, timeliness, data type and characteristics.

3. Available Datasets: elements addressing data access limitations, legal constraints, data sustainability, the dataset's presence in CORDA, INSPIRE compliance and usage by the Services for specific products.

This database is the precursor of the current Copernicus In Situ Component Information System (CIS2), currently under development.

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The Copernicus In Situ Component Information System (CIS2) is a database currently under development

Objectives:

– The CIS2 objective is to construct and maintain one Copernicus In Situ Database sufficiently capable of storing all relevant information across all Copernicus services.

– The database shall provide a detailed overview of all the available and already accessible in situ data for use by Copernicus services

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- **Analysis of cross-cutting requirements across the three Copernicus Services (CEMS-CLMS-CSS)**

- **Identification of the cross-cutting gaps**

- **Identification of the consequences of gaps**

- **Way forward and recommendations**

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Requirements group	Copernicus Service Component								Occurrence by Theme
	CEMS		CLMS			CSS			
	Mapping	Early Warning	Local	Pan EU	Global	Border Surveillance	Maritime Surveillance	Support to External Action	
Settlements	x	x	x	x	x	x		x	7
Hydrographic network	x	x	x	x	x	x		x	7
Land cover	x	x	x	x	x	x		x	7
Digital Elevation Model	x	x	x	x	x	x		x	7
Transportation network	x	x	x	x		x		x	6
Administrative boundaries	x	x	x	x		x		x	6
Aerial Ortho-imagery	x		x	x					3
Industry and Utilities	x	x				x	x	x	5
Large scale population information	x	x						x	3
Physiography	x	x				x	x	x	5
Meteorological forecast data		x			x		x		3
Toponyms	x					x		x	3
LPIS data		x	x	x					3
Oceanographic data and forecast						x			1
Vessel Identification and tracking (LRIT, AIS, S AIS)						x	x		2
Vessel database						x	x		2
Occurrence by Service	11	11	8	8	5	12	5	10	

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CEMS Mapping — Settlements

Settlements	Service requirements	Criticalities
Level of detail	1:1:000/ 1:10:000/ 1:100.000	Depend very much on the Area of Interest of Service
Data quality	High quality, polygon features	Low completeness and accuracy of high scale data in global area
Spatial coverage	National/ European/ Global	Coverage is location dependent for some datasets
Temporal coverage	recent (3 years max)	National data temporal coverage may be older than 3 years
Update frequency	periodic update	no major gap
Timeliness	1 hour	Some datasets (European country NMCAs) require human interaction, that extends the time required for getting the data
Data type	Vector	no major gap
Data policy and accessibility	View and Dowload service	Often data are not available for download (see timeliness)/ Gaps in policy, on a case by case basis. National datasets are generally not accessible
INSPIRE compliance	Annex III: Buildings	no major gaps
Sustainability	Medium term 2-5 years	Uncertainties of sustainability of global initiatives (e.g. OSM)

Cross-cutting issue analysis (full table)

Settlements	CEMS Mapping — Service requir.	CEMS Mapping — Criticalities	CEMS Early warning — Service requir.	CEMS Early warning — Criticalities	...External Actions — Criticalities
Level of detail	1:1:000/ 1:10:000/ 1:100.000	Depend very much on the Area of Interest of Service	1:10.000; 100m spatial resolution	Accurate and consistent infrastructure data across Europe are missing	large scale almost fully missing at global level
Data quality	High quality, polygon features	Low completeness and accuracy of high scale data in global area	85% overall accuracy, high quality	High quality data would improve hazard risk modeling	Low quality and lack of completeness in global area
Spatial coverage	National/ European/ Global	Coverage is location dependent for some datasets	EEA39 (global expected in near future)	National datasets are generally not available and European are too coarse	lack of information at global level
Temporal coverage	recent (3 years max)	National data temporal coverage may be older than 3 years	recent	no major gap	no major gap
Update frequency	periodic update	no major gap	3-5 years	no major gap	irregular update
Timeliness	1 hour	Some datasets (European country NMCAs) require human interaction, that extends the time required for getting the data	Off-line with max delay 30 days	no major gap	no major gap
Data type	Vector	no major gap	Vector/Raster	no major gap	no major gap
Data policy and accessibility	View and Dowload service	Often data are not available for download (see timeliness)/ Gaps in policy, on a case by case basis. National datasets are generally not accessible	Download data to ingest into the service	no major gap on dissemination, Gaps are in policy, on a case by case basis	no major gap
INSPIRE compliance	Annex III: Buildings	no major gaps	Annex III: Buildings	differing, since EEA39 countries have different INSPIRE implementation status	most of the datasets are not INSPIRE compliant
Sustainability	Medium term 2-5 years	Uncertainties of sustainability of global initiatives (e.g. OSM)	Medium term 2-5 years	3-5 years	Medium term 2-5 years

CRITICALITIES

HIGH
MEDIUM
LOW
NONE
N.A. = Not Applicable

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Six out of the thirteen crosscutting requirement groups analysed have been identified as highly critical

- Settlements
- Digital Elevation Model
- Administrative Boundaries
- Industry and Utilities
- Physiography
- LPIS

GAPS @

National level
- Timeliness
- Data model
- Data policy and accessibility

Global level
- Spatial coverage
- Data policy and accessibility

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National level

❖ Timeliness:
- most of the datasets require special authorisation and/or human interaction in order to access them. This usually takes up too much time with respect to the service requirements

❖ Data model:
- complexity of identifying, ingesting and harmonising national datasets into service component databases

❖ Data policy and accessibility:
- National datasets often present restrictions, and are currently to a large degree not accessible on a full, free and open basis

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HIGHER EFFORT- datasets have to be produced or, at least, complemented by the service providers

POTENTIAL DELAY IN DELIVERY - production of datasets takes a lot of time and could lead to delays in the delivery of the key information

POTENTIAL REDUCED QUALITY - quality is jeopardized in case of missing dataset infact, potentially, it cannot be produced with the required accuracy or cannot be produced at all

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- Copernicus Services' high level requirements:
  - High quality data in terms of detail (scale, resolutions) and accuracy (geometric and thematic)
  - Granted timely access (24/7)
  - Homogeneous data model

- Open issues:
  - Terms of protection of the NMCA data
  - Lack of comparable and easily-integrated INSPIRE-based sets of data

- Next actions:
  - Operational implementation of the agreement between EEA and Eurogeographics signed in 2011

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Thank you
for your attention

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