Copernicus and in situ data

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Europe's eyes on Earth

7th Copernicus Czech National User Forum

Dr Hans Bruyninckx, 7 June 2018, Prague

European Environment Agency

The European Environment Agency (EEA)

The EEA's mission

To provide relevant, reliable, targeted and timely information to policy-makers and the public.

To help achieve significant and measurable improvements in Europe's environment and to support sustainable development.

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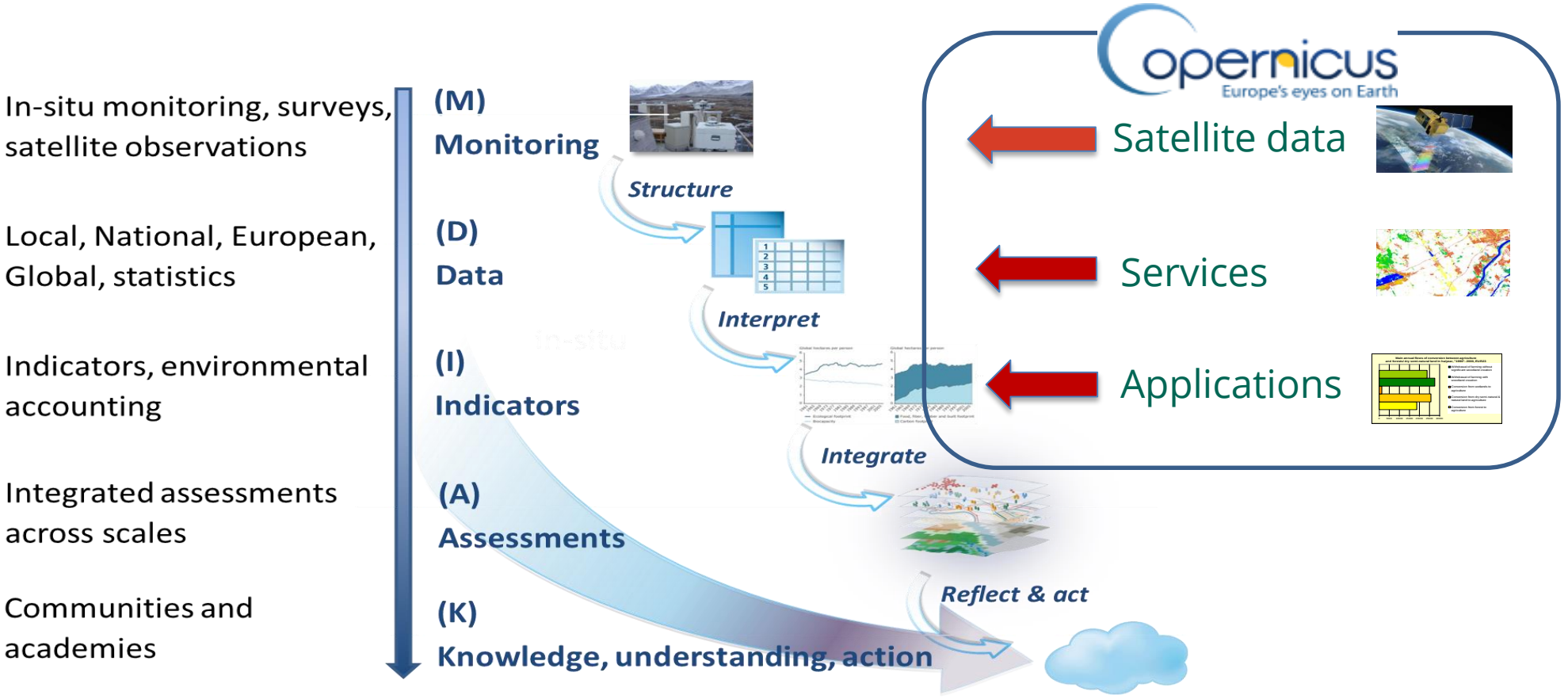
EEA - Eionet roles in Copernicus 2014-2020

Use of Copernicus in the EEA MDIAK framework



Copernicus Information Products in EEA's Reports

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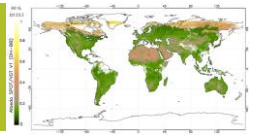
Copernicus Land Monitoring Core Services

- Systematic Biophysical Monitoring

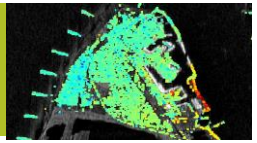


- Land Cover & Land Use mapping

- Thematic hotspot mapping

- Reference data

- Ground Motion service



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Setting the in situ data scene

- Copernicus is a success and offers excellent data and information products to users.
- In situ data constitute part of the foundation for Copernicus' success; and Copernicus collects and uses an enormous amount of in situ data on a routine basis.
- In situ data is needed for the production and validation of Copernicus Data and Information Products.

Setting the in situ data scene

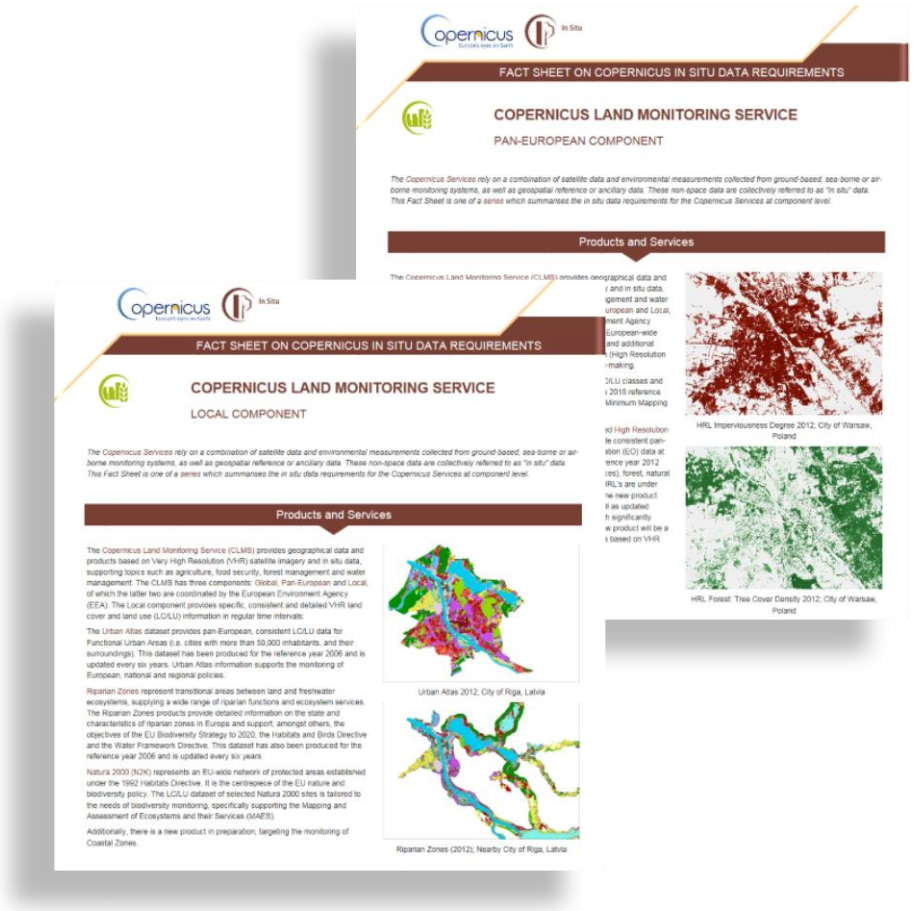
- Copernicus relies primarily on existing ‘in situ data’ capacities.

- The Copernicus In Situ Data Component is primarily implemented by the Copernicus Services and the Space Component. Cross-cutting coordination is the responsibility of the EEA.

CLMS - Local & Pan-European Component

Reliable and timely access to essential in situ data is required to:

- Support visual interpretation and feature delineation of land cover/use objects;
- Improve the reliability and accuracy of the thematic products;
- Improve the calibration of the density products, e.g. imperviousness and tree cover density;
- Support validation of products and internal quality control steps.



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Known key in situ data challenges

- Data policy
- Sustainability
- Accessibility
- Data quality
- Coverage
- Timeliness
- Data gaps

"Stable and sustained long-term solutions are needed"

"Use restrictions are often incompatible with Copernicus' data policy"

"Acknowledgement and attribution of ownership"

"Sustainability of in situ observing systems remains a strong concern"

"Access to locally available observations"

The EEA's main cross-cutting activities

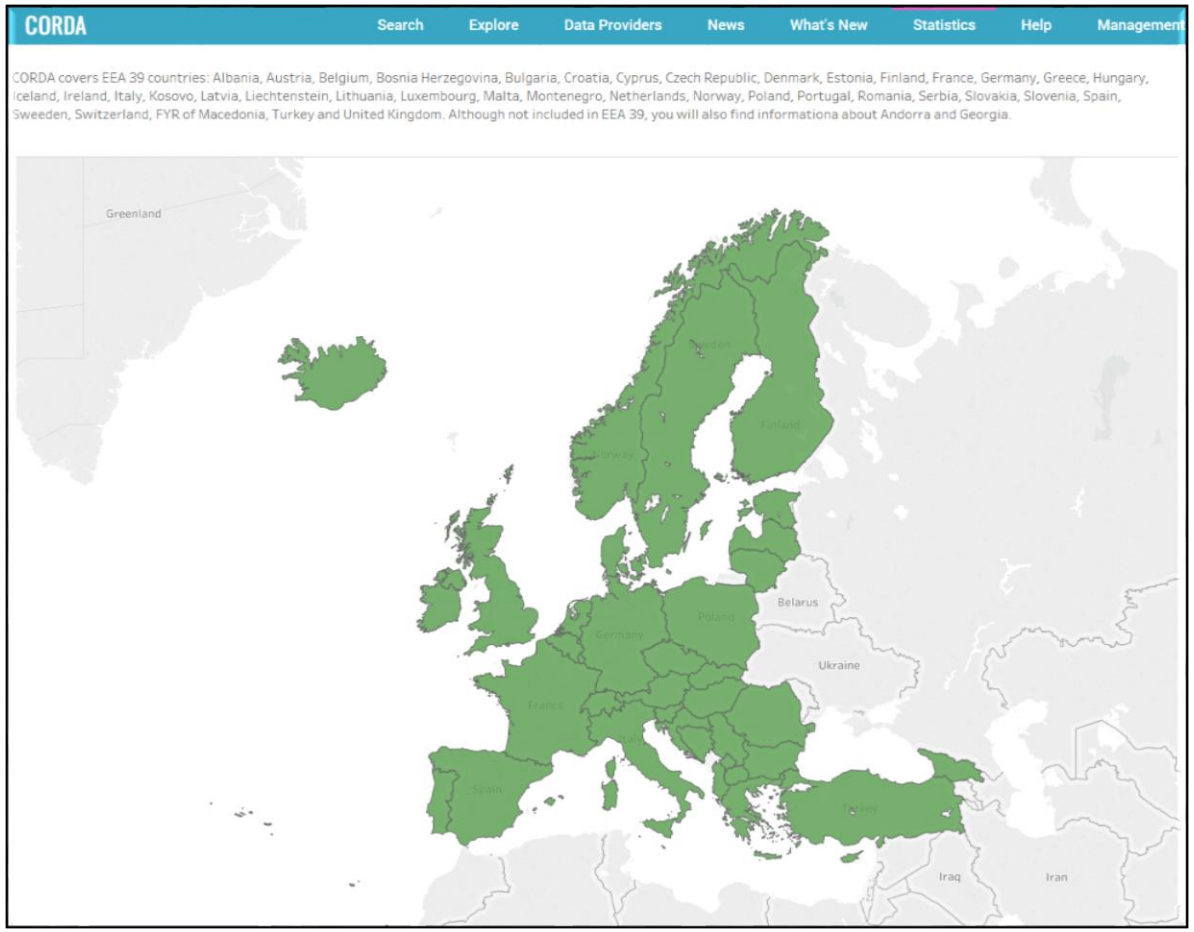
Maintain an overview of the Copernicus in situ component

Improve access to selected in situ data

Raise awareness about the Copernicus in situ component

Coordinated data access

The EEA is making national datasets available to the Copernicus Services though a protected and dedicated portal.



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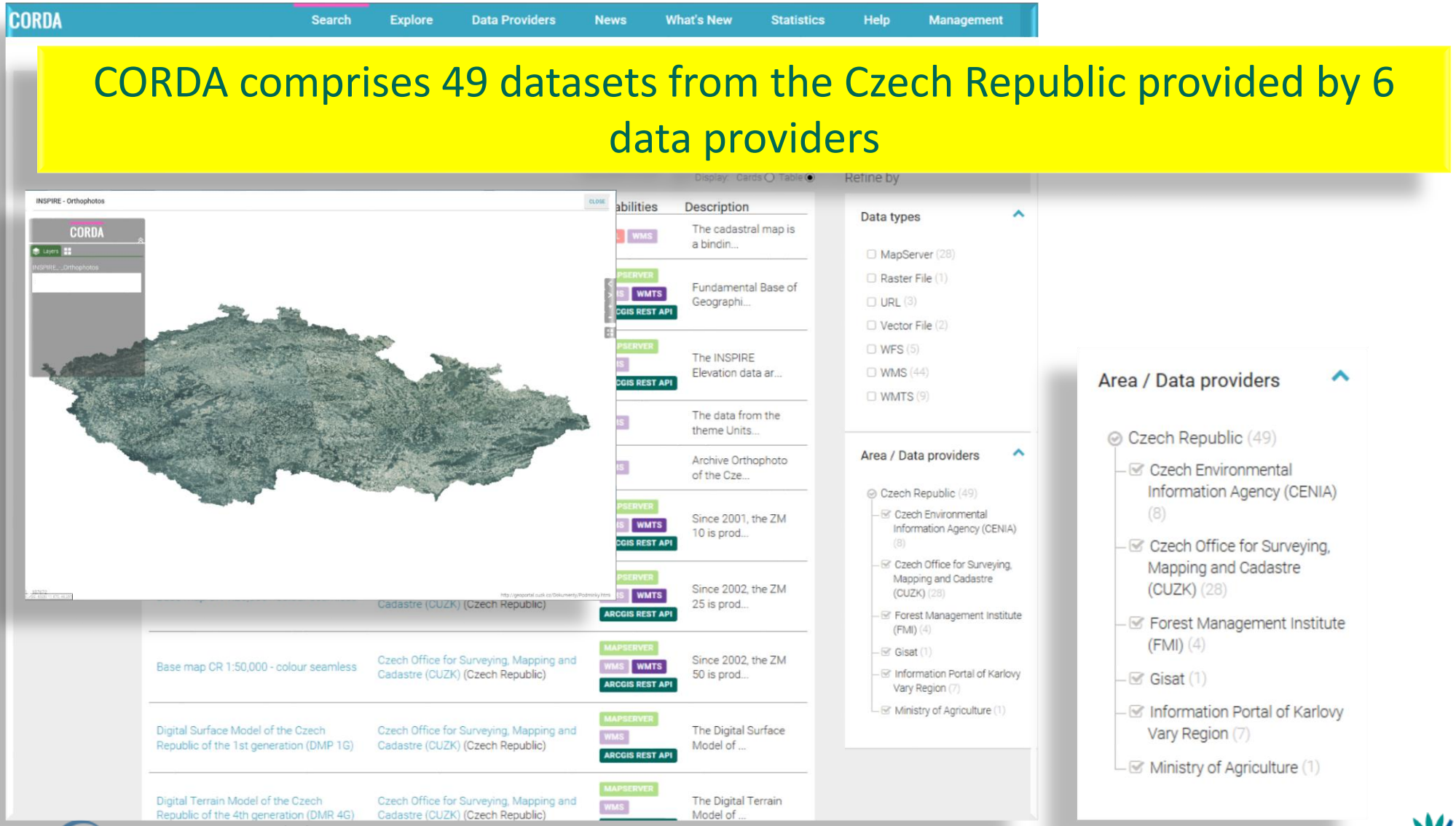
Czech Republic Data Providers contribute

CORDA comprises 49 datasets from the Czech Republic provided by 6 data providers



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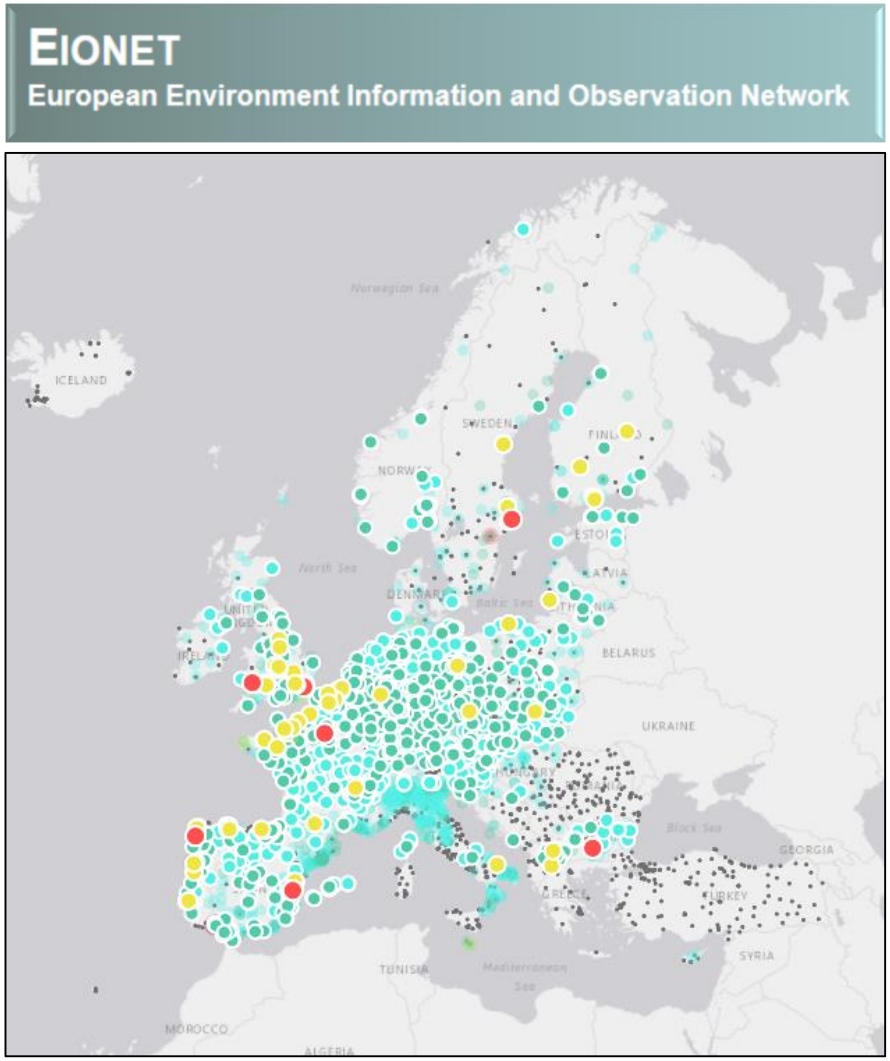
EEA/EIONET is delivering data to Copernicus



The EEA delivers Up-to-Date Air Quality Observations to Copernicus via the EIONET Core Data Flow.

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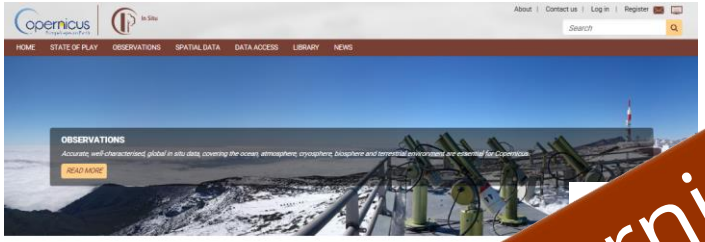
Find more information on

insitu.copernicus.eu



EXPLORE THE COPERNICUS IN SITU COMPONENT

Copernicus In Situ Newsletter #3

Featured

Operational use of in situ data at EUMETSAT: Interview with Bojan Bojkov

In situ data critical for the Copernicus Marine Service

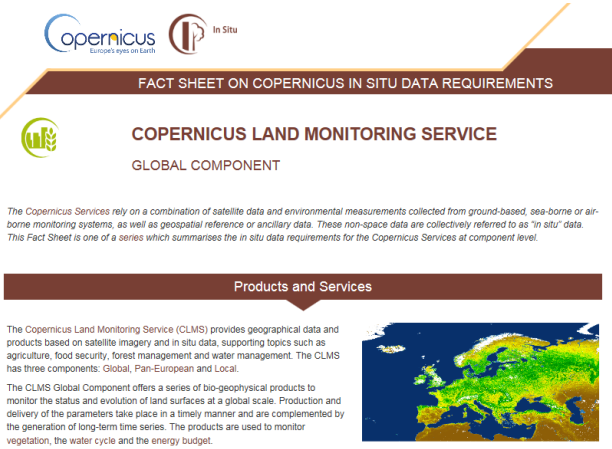
Copernicus In Situ Newsletter #1

Featured

Hans Bruyninckx, Executive Director of the EEA

Mauro Facchini, Copernicus Unit, European Commission

Craig Donlon, Sentinel-3 Mission Scientist, European Space Agency



FACT SHEET ON COPERNICUS IN SITU DATA REQUIREMENTS

COPERNICUS LAND MONITORING SERVICE

GLOBAL COMPONENT

The Copernicus Services rely on a combination of satellite data and environmental measurements collected from ground-based, sea-borne or air-borne monitoring systems, as well as geospatial reference or ancillary data. These non-space data are collectively referred to as "in situ" data. This Fact Sheet is one of a series which summarises the in situ data requirements for the Copernicus Services at component level.

Products and Services

The Copernicus Land Monitoring Service (CLMS) provides geographical data and products based on satellite imagery and in situ data, supporting topics such as agriculture, food security, forest management and water management. The CLMS has three components: Global, Pan-European and Local.

The CLMS Global Component offers a series of bio-geophysical products to monitor the status and evolution of land surfaces at a global scale. Production and delivery of the parameters take place in a timely manner and are complemented by the generation of long-term time series. The products are used to monitor vegetation, the water cycle and the energy budget.

European view of Leaf Area Index from May/June 2014 overlaid (using shades of blue) with the water bodies product © Copernicus Global Land Service (2014). Distributed and produced by VITO NV, Belgium.

What in situ data is required for this component?

The CLMS Global Component requires the following Global and European in situ data:

- **Digital Elevation Models** – for modelling surface and subsurface features.
- **Land Cover Maps & Masks** – to define the land cover and ecological biomes.
- **Calibration and Validation Measurements** – Measurements of phenomena such as vegetation and irradiance for calibrating and validating satellite-derived products.
- **Hydrographical & Meteorological Data** – to assist in the definition of water bodies and correct for the effects of the atmospheric.

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Concluding remarks

- In situ data is an integrated and essential part of Copernicus.
- Data from Member States are critical to ensure the quality of Copernicus Data and Information products.
- A long-term strategy and operational solutions are needed to mitigate key challenges in particular sustainability and data policy.
- The EEA and its Environment Information and Observation Network is committed continuing cross-cutting coordination to reach effective and cost-efficient in situ data solutions.

Thank you

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