

THE COPERNICUS IN SITU COMPONENT - OBSERVATIONS

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The Copernicus Services rely on environmental measurements ("observations") collected from ground-based, sea-borne or air-borne monitoring systems, as well as geospatial reference or ancillary data, collectively referred to as "in situ" data. In situ data are required in order to produce, enrich and validate the Copernicus services, ensuring their accuracy and reliability.

In the context of environmental observations, a wide range of in situ monitoring infrastructures, each created to serve a number of different and diverse purposes, is utilised by the Copernicus programme.

The Copernicus In Situ Component is coordinated by the European Environment Agency (EEA) under a Delegation Agreement with the European Commission, signed in December 2014. The EEA is currently working on improving the data provision to the Services and identifying data gaps and challenges.



Present Weather Sensors under evaluation at De Bilt, Netherlands (Credits: Royal Netherlands Meteorological Institute - KNMI).



Wind Profiler at South Uist, Outer Hebrides, Scotland (Credits: Met Office).



The EEA's mandate includes four main roles:

1. Monitoring the state of play of Copernicus in situ data
1. Operational provision of cross-cutting in situ data;
2. Managing partnerships with data providers;
3. Supporting the European Commission, Copernicus Service Providers and the Entrusted Entities in overcoming challenges associated with accessing in situ data.

To support these coordination tasks, the EEA has contracted expert consortia from the public and private sector to analyse needs, gaps and challenges related to the acquisition and access to in situ data for the Copernicus Programme.

For observation data, this work is being carried out in four thematic domains, several of which are cross-cutting with respect to the needs of the Copernicus services:



Meteorology



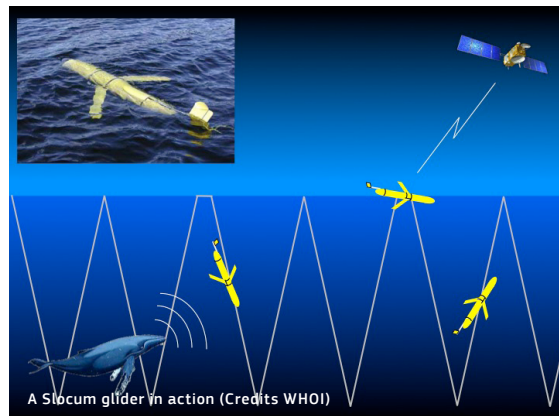
Oceanography



Atmospheric composition and air quality



Climate



A Slocum glider in action (Credits: WHOI)



Copernicus In Situ Coordination Information System (CIS²)

An up-to-date database of in situ data requirements is being developed. The database will cover requirements from Copernicus Services, linked to their individual products and to the available in situ data which are used by the Services.

State of Play

An overview of the status of the Copernicus In Situ Component and its future perspectives and challenges is produced annually. This includes an overview of the in situ data required for the delivery of the Copernicus Services, the current situation for each of the Services, cross-cutting issues (gaps, risk and challenges), and the expected evolution of the Services. Based on this analysis, recommendations and future actions are proposed.

The latest edition of the **State Of Play of the Copernicus In Situ Component** report is available on the Copernicus In Situ website:

<https://insitu.copernicus.eu/state-of-play>

Fact sheets

Fact sheets on the in situ data requirements for each individual Service have been developed and are regularly updated. The Fact Sheets:

- ✎ Provide a synthetic overview of the main in situ data sources required for the delivery of the Copernicus Services;
- ✎ Highlight the main challenges, risks and opportunities linked to the acquisition of in situ data for Copernicus;
- ✎ Underscore the importance of in situ data for the quality, reliability and continuity of the Copernicus products and services.



Thematic studies

Thematic studies are carried out on-demand in response to specific requests from the European Commission or the EEA. Thematic studies usually take the form of in-depth analyses of critical data, observations, and products, and they may address topics such as observation types, relevant standards, data quality, data policy, availability and application of data access technologies, e.g. data services and information systems, data formats, and data processing methodologies.

The following thematic studies are ongoing:

- ✎ Usage of in situ data in the Copernicus Space Component;
- ✎ Research Infrastructures and Copernicus;
- ✎ In situ system sustainability for observation data;
- ✎ Dialogue with H2020 research projects on the design of in situ observation systems; and
- ✎ Engagement with the World Meteorological Organisation.

Newsletters

The Copernicus In Situ Component regularly circulates a newsletter to inform and engage the community on its latest developments. The newsletter showcases the many uses of in situ data within the Copernicus programme, addresses cross-cutting issues such as the signature of new data agreements, and showcases relevant opportunities and events.

Previous editions of the Copernicus In Situ Newsletter can be found at:

<https://insitu.copernicus.eu/news/newsletter>

