

The role of data standards and data service standards in climate services

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Using standards for interoperability, transparency, and sustainability of services.

The use of standards in climate science and meteorological services is well established. For the meteorological services the GRIB standard, maintained by the WMO, enables robust data sharing between all WMO members. As with some other standards, GRIB has a rigorously governed core and a protocol for exploiting the standard which is outside the core governance process.

The deployment of climate services brings many new challenges and a complex array of standards will be needed. The European Commission, through INSPIRE, and international standards bodies such as ISO, W3C and OGC maintain a range of trans-disciplinary standards, some of which can be used to support dissemination and implementation of domain standards.

Standards

European Commission

- INSPIRE: Infrastructure for Spatial Information in the European Community

International Standards Organisation (ISO)

- ISO 19115 for catalogue meta-data

World Wide Web Consortium (W3C)

- SKOS for knowledge organisation
- PROV for provenance information
- PRO for publishing roles

Open Geospatial Consortium (OGC)

- WMS, WPS for visualisation and transformation services.

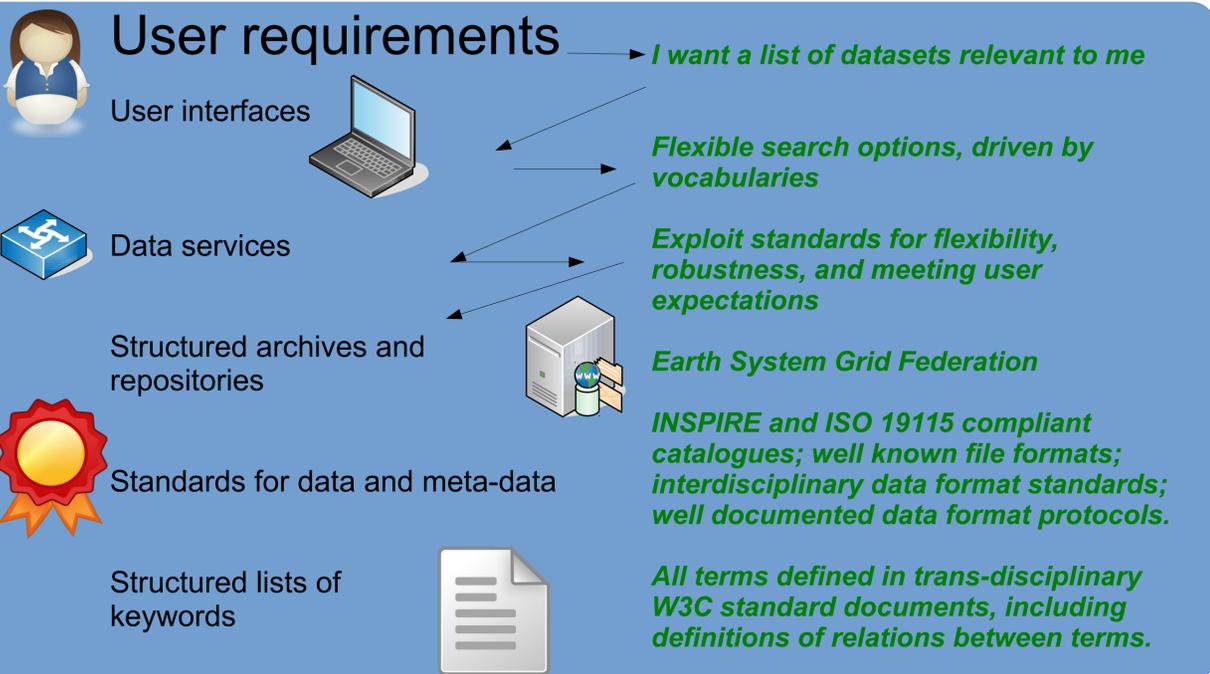
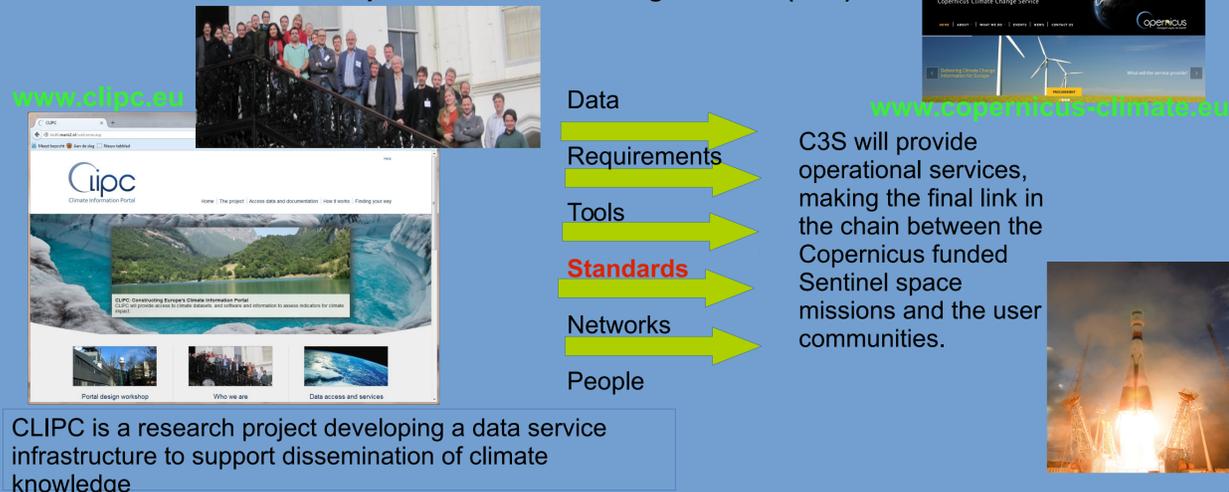
Global Climate Observing System

- Essential Climate Variables

Domain standards

- Climate Forecast Conventions (CF) – for scientific data
- Gridded Binary format for re-analysis (GRIB)
- CMIP conventions for climate scenario data
- Expert Team on Climate Change Detection Indices (ETCCDI)
- UncertML: probabilistic uncertainty
- CORE-CLIMAX maturity matrix
- Shapefiles for sectoral data

CLIPC and the Copernicus Climate Change Service (C3S)

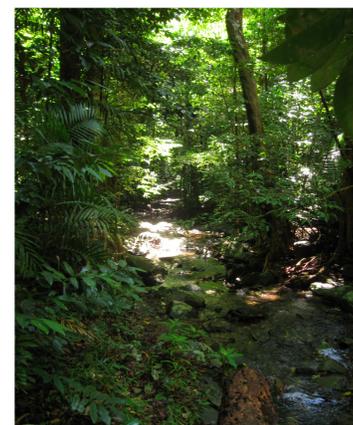


Exploring uncertainty



Ross Salawitch Research Group

While projections of global mean surface temperature are now well understood, substantial uncertainty remains in many areas of more direct relevance to climate service users.



Daintree Rainforest, Queensland, Australia, Wikipedia

Introducing CLIPC

- CLIPC will design a platform to provide access to climate information of direct relevance to a wide variety of users, from scientists to policy makers and private sector decision makers;
- The "one-stop-shop" platform will provide data and information on climate and climate impacts, and ensure that the providence of science and policy relevant data products is thoroughly documented;
- Engage with user communities to inform development.

