Copernicus Climate Data Store Data and Metadata QC (C3S_512)

Climate Change

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Introduction: COPERNICUS CLIMATE CHANGE SERVICE (C3S)

- Copernicus EO programme (EC)
- C3S will provide past/present/future climate data
- To a wide range of users
- The goal is to achieve a more sustainable future

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The current solution: CLIMATE DATA STORE (CDS)

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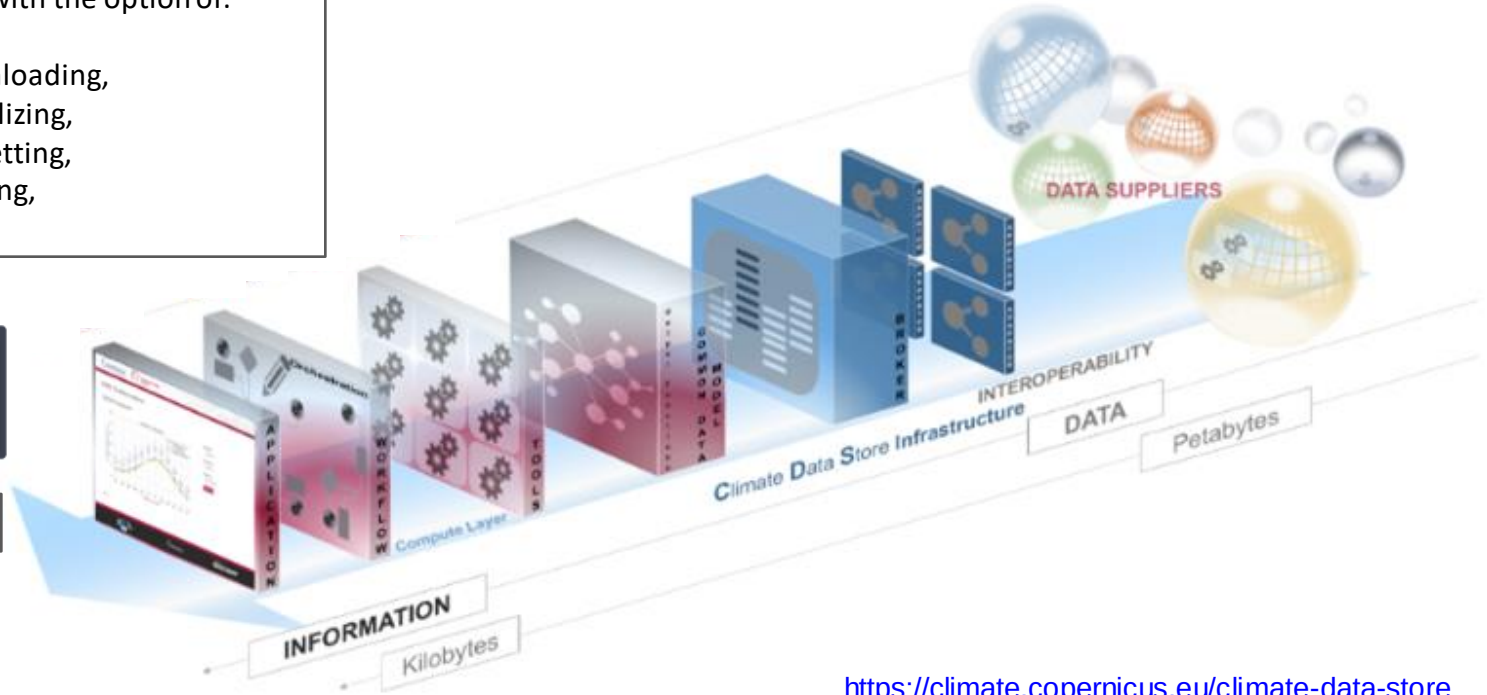
At the heart of the C3S infrastructure is the ***Climate Data Store (CDS)***. It provides a single point of access to a wide range of climate datasets, namely **satellite and in-situ observations, reanalyses, seasonal forecasts and climate projections**

The users access the datasets through the CDS portal with the option of:

- ❑ Downloading,
- ❑ Visualizing,
- ❑ Subsetting,
- ❑ Plotting,
- ❑ Etc.

Web portal

Users



https://climate.copernicus.eu/climate-data-store

Data and Metadata challenges: C3S_512 contract

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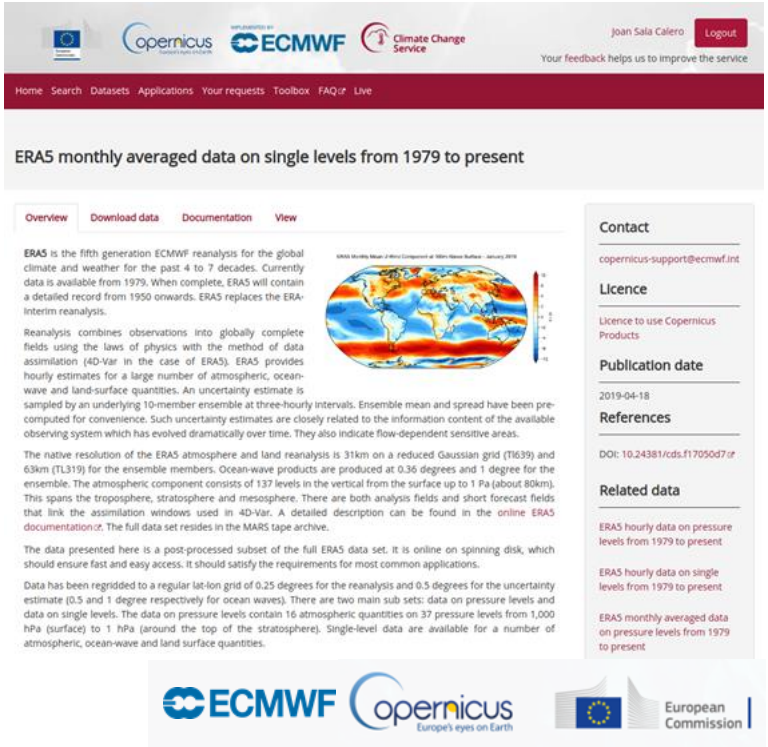
Such a complex infrastructure requires an ***Evaluation and Quality Control (EQC)*** function providing an overarching quality assurance service for the whole CDS **data and metadata**:

- Apply **FAIR** principles to **metadata**
  - Use of ISO 19115 metadata record standard
    Interoperable
  - OGC services such as CSW (Catalogue Service)
    Findable/Accessible
  - Unique identifiers for the data products / Use of DOIs
    Findable/Accessible
  - Global and European data standards (WMO OAI-PMH / EU INSPIRE)
    Interoperable

- Apply **quality controls** to all the **data** provided to the users
  - Use of meteorological file formats (GRIBv2, NetCDF) - **Interoperable/Reusable**
  - Based on standard climate vocabularies (CF conventions, CMOR)
    Interoperable
  - Plausible/Valid ranges for the data we provide
  - Spatial/Temporal completeness and consistency



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Work performed during the RDA 4.0 grant

- Standardization of the vocabularies used in the metadata using the **CF (Climate and Forecast)** conventions.
- Use of the **Common Information Model (CIM)** to describe:
  - Data, models and software used to produce it.
  - Geographic grids and projections.
  - Experiments or simulations.
- The standards applied can also be found in the **RDA metadata standards repository**
  http://rd-alliance.github.io/metadata-directory/standards/cf-climate-and-forecast-metadata-conventions.html

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- Development of an **INSPIRE** KPI using the REST API of the inspire validator focusing on the CSW metadata catalogue:
  https://inspire.ec.europa.eu/validator/

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INSPIRE Infrastructure for Spatial Information in Europe

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Dissemination activities performed during the RDA 4.0 grant

- Presentation during the EOSC symposium 2019 (Budapest) in the use cases session.

- Publication on the EOSC portal use cases in the coming months:
  https://www.eosc-portal.eu/eosc-in-practice/use-cases

EUROPEAN OPEN SCIENCE CLOUD

- RDA adoption story will be online soon:
  https://www.rd-alliance.org/recommendations-outputs/adoption-stories

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THANK YOU

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