

# Climate Data Store (CDS)

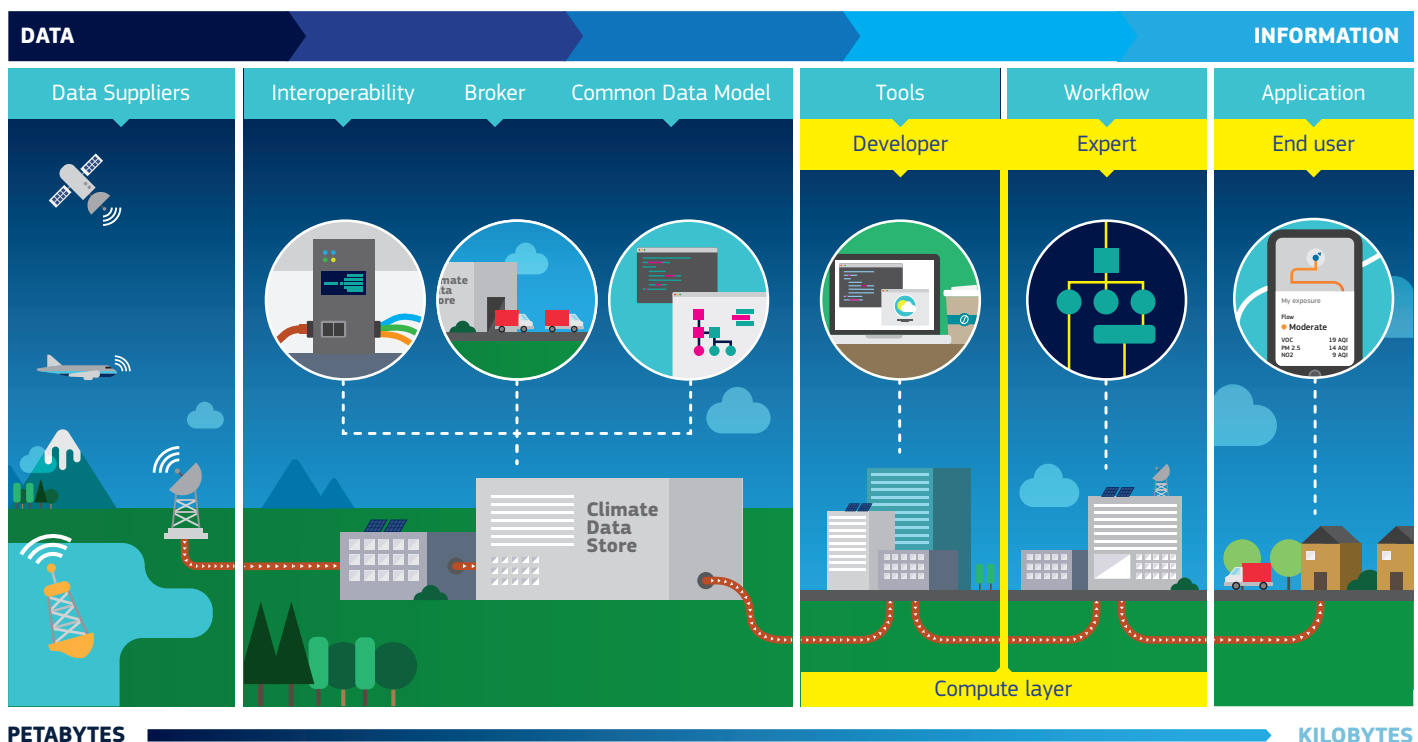
Climate data at your fingertips

The Climate Data Store (CDS) makes information about the past, present and future climate freely available, and functions as a one-stop shop for users to explore climate data.

Climate Data Store, Data flow graphic

## 1 The Climate Data Store contains a wealth of observations, reanalysis, climate projections and seasonal forecasts.

Time series of in-situ observations, reprocessed climate data records from satellites, and output from climate models, including projections and searchable metadata, are among the treasure trove of data the store holds. Users have all the necessary climate information at the push of a button.



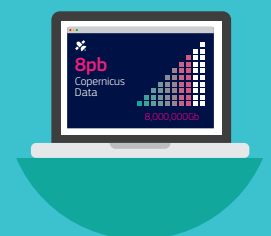
## 2 The Climate Data Store provides easy, online access to existing datasets through a unified web interface.

The CDS combines the functions of a distributed data centre with a set of services and facilities for users and content developers. Through this online tool, anyone is able to build maps in real-time by combining data from the many different datasets that the Copernicus programme offers. The system is designed to allow experts to develop their own data post-processing close to the data store, the result of which is a much reduced need for downloading huge datasets.

## 3 The Climate Data Store provides authoritative, quality-assured information for a sustainable planet.

Easy access to climate indicators via the Climate Data Store provides scientists, policy makers and businesses with the necessary information to help make decisions for a more sustainable future. The observational data is combined with state-of-the-art climate models to improve forecasts.

The Copernicus programme alone delivers **8 petabytes of data every year**. That is the equivalent of 1.6 billion digital photos!



## 4 The Toolbox provides exhaustive software that allows users to develop applications based on the information contained in the CDS.

The Toolbox associated with the CDS allows users to create their own web-based apps to analyse, monitor and predict changes in climate drivers. For instance, users can select a geographical area of interest to gain access to all kinds of data from the store through the combination of different applications.



Reanalysis fills the gaps in monitored datasets and improves forecasting.

## 5 The Sectoral Information System (SIS) provides benchmarks of good practice to users in different sectors.

The information held in the Climate Data Store is combined with data from other sources to provide real-time output and projections on climate indicators relevant to users acting in different fields. For instance, in close consultation with stakeholders and policy makers energy-relevant and hydrological climate indicators are provided to both help meet energy demands in the future and better manage our water resources.

## 6 The Climate Data Store is based on open source technologies and is continually being further developed with help from the users.

User engagement is key to the development of both the CDS infrastructure and the toolbox. The cloud-based infrastructure is continually being further developed to cater for changing user requirements. As users of the climate and weather services are familiar with the scientific libraries and back-end used in the toolbox to perform the data manipulation they are invited to contribute to its development.



The Climate Data Store delivers vital insight into the state of the climate.



## The Copernicus Climate Change Service (C3S)

The Copernicus Climate Change Service (C3S) combines observations of the climate system with the latest science to develop authoritative, quality-assured information about past, current and future states of the climate in Europe and worldwide.



## The Copernicus Atmosphere Monitoring Service (CAMS)

The Copernicus Atmosphere Monitoring Service (CAMS) provides continuous data and information on atmospheric composition to help policymakers, businesses and citizens address these environmental concerns.

## Vital environmental data for a changing world

Copernicus is the European Commission's flagship Earth observation programme. It delivers freely accessible operational data and information services which provide users with reliable and up-to-date information related to environmental issues.

The European Centre for Medium-Range Weather Forecasts (ECMWF) has been entrusted by the European Commission to implement two of the services of the Copernicus Programme: the Copernicus Climate Change Service (C3S) and the Copernicus Atmosphere Monitoring Service (CAMS). Further, ECMWF provides support to the Copernicus Emergency Management Service (EMS).

The Climate Data Store is implemented by the Copernicus Climate Change Service. C3S combines observations of the climate system with the latest science to develop authoritative, quality-assured information about past, current and future states of the climate in Europe and worldwide.

Academic and environmental institutions from across Europe, including national meteorological services, play an integral part in making Copernicus a success.

## Find out more

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