

Highlights

The ESA Validation Data Centre (EVDC) is the official ESA repository for validation and campaign dataset.

EVDC is built to assist ESA and scientists with archival and exchange of correlative data for validation of Earth Observation of satellite instrument atmospheric composition products and provides the final archive for the data. EVDC builds on the previous ENVISAT Cal/Val database system in operation at NILU since the early 2000s, and includes tools for extraction, conversion and archival of a large amount of EO data.

Thanks to the EVDC project on behalf of ESA, the system is now in preparation for future satellite missions such as Sentinel-5P and ADM-Aeolus. An advantage with using EVDC is the possibility of sharing data within the campaign consortium – both during the campaign and in the analysing phase, the portal can be easily expanded to support new campaigns and missions. EVDC offers easy access to a wide range provision of user support and advisory to data managers on how to archive data and what variables they should store.

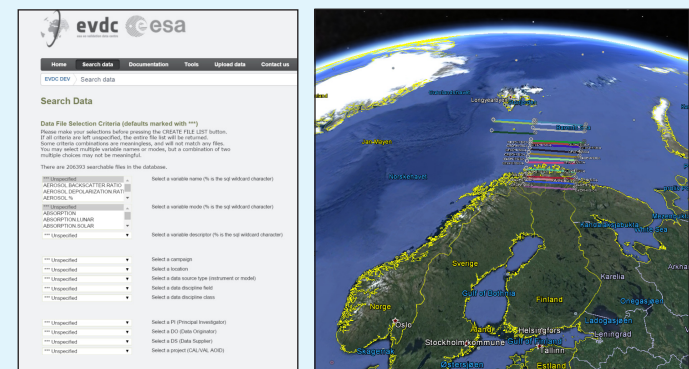


Search, download and visualize data

Any user of the system is allowed to search for data through the EVDC web portal. The search page contains a data selection part where the user may selection multiple variable or modes and list the files that match the search criteria. A successful search will return a list of data files matching the selected criteria, but for a non-registered user it is not possible to download the result.

Users registered as data submitters are allowed to upload data for one or more campaigns and sub-projects, and can browse and download data from other users under the same campaigns.

An option for downloading the files in KML format is built into the system for visualization of files in Google Earth. This is possible for files that contains data from a moving platform (moving in the lat/lon direction), where each position is stored as a function of time.



GEOMS

To facilitate exchange of validation data among investigators and missions a common effort between ESA, NASA, NDACC and related universities and organizations, has led to a set of harmonized guidelines, the Generic Earth Observation Metadata Standard (GEOMS) guideline.

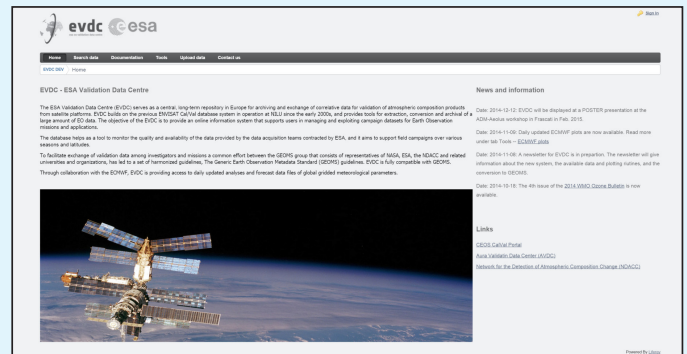
EVDC is fully compatible with GEOMS and it has been adopted for archiving data from ground-based networks.

GEOMS outlines the metadata and data structure requirements developed to facilitate the use of geophysical datasets by improving their portability and accessibility, and by making their contents self-describing. This approach was originally selected to deal with atmospheric and oceanographic datasets, but has been expanded to support all measurements from Earth observation instruments. EVDC provides tools and support to users during the conversion and upload of validation dataset.

<http://evdc.nilu.no>

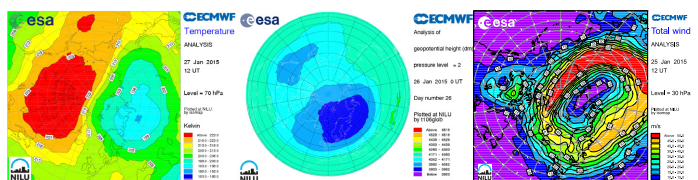
In order to make indexed data accessible for all scientists and personnel performing calibration and validation on satellites, EVDC provides tools for conversion and archival of a large amount of EO data. The database helps as a tool to monitor the quality and availability of the data provided by the data acquisition teams contracted by ESA, and it aims to support field campaigns over various seasons and latitudes.

It is a system for storing and indexing complex data sets from a multitude of sciences, not only a database for correlative data. EVDC currently hosts more than 206 000 data-sets from a wide range of measurements principles and atmospheric disciplines like e.g. LIDAR, RADAR, uv-vis and spectrometer data from multiple sensors, including aircraft, balloon and ground based platforms. Data is uploaded to EVDC on a daily basis.



Meteorological data from ECMWF

Through collaboration with the ECMWF, EVDC is providing access to daily updated analyses and forecast data files of global gridded meteorological parameters, such as temperature, geopotential height, zonal wind and meridional wind. Analysis and forecast up to 240 hours for levels are updated on a daily basis. Data for both the Northern hemisphere and the Southern hemisphere are available.



Database content

EVDC contains a large variety of files used for validation of atmospheric composition products from satellite platforms. The main groups of files are listed below.

- Aircraft data from Falcon and Geophysica are located in [/vipier/nadir/evdc/data/aircraft/](#)
- Assimilation data from GOME measurements are located in [/vipier/nadir/evdc/data/assimilation/gome/](#)
- Balloon data from a wide range of stations and measurement principles such as e.g. sonde.o3 are located in [/vipier/nadir/evdc/data/balloon/](#)
- Ground based data from a wide range of stations and measurement principles such as FTIR and LIDAR are located in [/vipier/nadir/evdc/data/groundbased/](#)
- Satellite data are located in [/vipier/nadir/evdc/data/satellite/](#)

User support

An important part of the EVDC operation is provision of user support and advisory to data managers on how to archive data and what types of data they should store.

The EVDC web pages include search and browse functionalities for atmospheric data, data upload and download facilities, documents, links and access to ECMWF data and plots, and other user relevant information. Moreover, support to data submission and conversion into GEOMS standard is offered.

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