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Newsletter from EVDC

ESA atmospheric Validation Data Centre

June 2023

<https://evdc.esa.int>

The Purpose

The main purpose of this newsletter is to provide an annual update on the available data holdings, functionality and documentation available on the **EVDC** online platform.

EVDC is a one stop shop for searching and accessing correlative data for calibration and validation of atmospheric satellite products. As of now we provide access to:

- Over 1.5 million groundbased, aircraft and balloon Cal/Val files and Fiducial Reference Measurements
- Complete and up to date archive of **Sentinel 5P, Aeolus and MIPAS** products
- Tools, processes and documentation for data submitters (GEOMS standarization activities, data sharing agreements)
- Tools for data collection campaign planning (orbit prediction)
- Tools for processing data in the cloud (subsetting, merging, visualisation etc)

Active user community is the key driving force behind the evolution of the platform. We are keen to receive any feedback from current EVDC users and better understand their use cases.

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accessible here:

<https://www.surveymonkey.com/r/MR3KF83>

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Fig. 1 EVDC Platform Capabilities

About EVDC

EVDC aims to be the main European source of access to the correlative data for

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The EVDC portal offers several tools supporting the user in terms of Cal/Val data query, data upload/download, format conversion (GEOMS conversion routines) and central processing of data. The EVDC platform also provides an access to satellite data for specific missions, in particular the system supports the atmospheric composition/dynamic missions: Sentinel-5P and Aeolus.

The portal can be easily expanded to support new campaigns and satellite missions. Data exchange with the EVDC is regulated by a protocol with the aim to ensure data ownership, to prevent re-distribution to third parties and to protect intellectual properties.

Currently the main focus of the EVDC team is to prepare the system for working with the upcoming EarthCare mission data and support Cal/Val teams in operationalizing the mission.

EVDC Portal Update Includes

- New look and feel of the portal
- New interface of the Orbit Prediction Tool
- The new flexible and powerful processing system
- Introducing EarthCare data readiness and tools

New Orbit Prediction GUI

The EVDC Orbit Prediction tool is used by researches from around the world for Cal/Val campaign planning and historical analysis of satellite orbits. Based on the analysis of user behaviour, feedback and types of questions asked, a new type of interface was designed that makes the tool easier to use, especially for the new users or infrequent users.

The new interface is actions oriented and guides the users through the steps of each available function in the form of a wizard-style interface. Tasks that are complex, infrequently performed, or unfamiliar tend to be easier to perform using a wizard.

Another advantage of the wizard interface is related to the screen real estate that

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Orbit Prediction Tool

The Orbital Prediction and Overpass Tool (OPOT) generates and visualizes satellite's overpasses. An overpass is when the field of view of a satellite's instrument passes over an area of interest (AOI). With OPOT you can:

- Search for overpasses by satellite/instrument, as well as for joint overpasses between two satellites
- Download overpass data as CSV, XML or JSON
- Plan campaigns for satellites which have yet to launch by defining virtual satellites

Orbit predictions are generated using `python-igpp4` using TLE files sourced from <https://www.space-track.org>. Click Info button in the 3D Globe Menu for information on how to use the Globe and hover over the OPOT buttons below the globe for information on their use. For more details download the user guide [here](#) and watch [demo video](#). For any questions regarding data production and quality please contact us via [Support](#) tab on the left or directly as per information on [Contact Page](#)

- 1 Select Operation
- 2 Select Satellites
- 3 Select Instruments
- 4 Pick time range and location
- 5 Visualise

Select Operation

[Predict Orbits](#) [Find Spatial Overpasses](#) [Find Temporal Overpasses](#) [Next Step >>](#)

Info Full Screen Select Location Select Polygon Show Footprint Reset

Networks

- All
- NDACC
- SHADOZ
- TCCON
- TOLNet
- WMOUC

Query Actions

[Choose Data File](#) [Upload](#)

[Search Satellite Data](#)

Skytek - NILU - ESA [Contact: nadirteam@nilu.no](#)

Fig. 2 New Orbit Tool interface

New Processing System

To meet the growing demand for processing resources of the atmospheric Cal/Val community, the EVDC team felt the need to provide a more flexible cloud processing solution that follows more closely the ESA Common Architecture concepts

The new processing system is deployed on HPC infrastructure supplied by ICHEC (Irish Centre for High_end Computing) on one of their supercomputers and provides

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Additionally some custom docker containers have been curated to provide the users with the access to the ready-made environments for working with widely used tools like HARP, CIS etc.

EarthCare Readiness

The EVDC team is working closely with the ESA EarthCARE team to provide software, storage and platform support for the upcoming EarthCARE mission.

The intense phase of Cal/Val activities that will lead to operationalization of the platform will be carried out with EVDC as main satellite archive for Cal/Val, dedicated collocation database and access to the processing tools curated for the EarthCARE Cal/Val community.

Video Tutorials

The set of new video tutorials cover most important functionalities and workflows in the EVDC platform:

- [EVDC Platform overview](#)
- [How to search for Cal/Val data?](#)
- [How to search and process the satellite data?](#)
- [How to use Orbit Prediction Tool?](#)
- [How to format Cal/Val Data?](#)

Tutorials on using orbit tool and satellite data search based on real-life scenarios:

- [Exploring Sentinel 5P and Aeolus data covering US west coast wildfires in 2020.](#)
- [Exploring Sentinel 5P SO2 data for Fuego volcano eruption](#)

DOIs and landing pages

The data centre has developed a new API that allows you to get a DOI for your data in EVDC. This API will generate landing pages for your data automatically from xml

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To coin a DOI for your dataset and to learn how to use the API, please contact the EVDC team at nadirteam@nilu.no. The EVDC team will assist you with the coining process and support you with setting up the landing pages.

New to data reporting?

Are you a new member of a Cal/Val team, or the owner of an instrument with Cal/Val data not currently submitted to EVDC?

EVDC supports the creation of GEOMS templates for your data. GEOMS templates are standardized formats that make your data more accessible and interoperable for ESA and other Cal/Val teams, following FAIR data principles. EVDC provides setting up support for creating GEOMS templates in two ways:

- You can use the online GEOMS tool that EVDC has developed to create reporting templates from your data files. This tool will guide you through the steps and validate your templates and is available from the EVDC web pages and from <https://geoms-tool.nilu.no/>
- You can contact the EVDC team at nadirteam@nilu.no and request their assistance. They will help you create GEOMS templates for your data and provide feedback and advice before submitting of data to the archive.

Webinars for EarthCARE teams

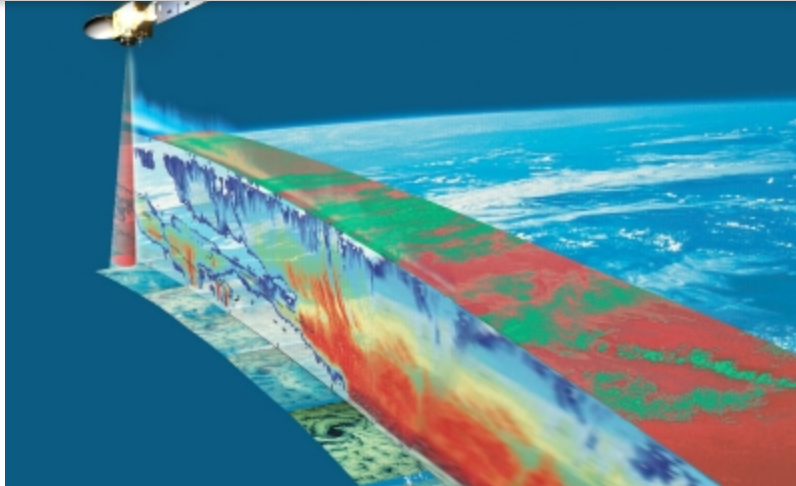
As a mission specific service EVDC offers in June 2023 a series of webinars for the EarthCARE Cal/Val teams.

June 27th 13:00-15:00 UTC

Introduction to the Cal/Val part of EVDC and addresses correlative data formatting and submission, and user accounts.

June 28th 13:00-15:00 UTC

Introduction to EVDC satellite data archive, collocation database, interface for CIS and L1 tools (ATLID, MSI).

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Support

The EVDC team also provides general support to all currently registered users as well as new users interested in the data and functionalities offered by EVDC portal and tools.

We encourage users to **contact us via Support tab on the left hand side in the EVDC portal** (see screenshot below) with any questions, issues, bug reports and suggestions of improvements. One of the main goals of the EVDC project is to continue the development of the tools and functionalities according to the feedback from users.

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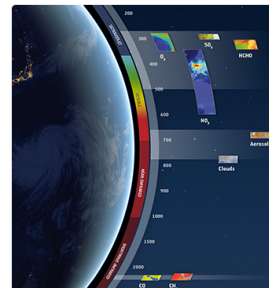
Welcome to the EVDC

ESA Validation Data Center is a central, long-term repository in Europe for archiving and exchange of correlative data for validation of atmospheric composition products from satellite platforms

[REGISTER](#)[ABOUT EVDC](#)

Search and Download Satellite Data Products

EVDC maintains its own archive of satellite data products and allows registered users to **search and download** the data product files. We provide access to current and historical Sentinel Sp, Aeolus and MIPAS data. Registered users can download the data products directly from EVDC portal here.

[SEARCH & DOWNLOAD](#)

News and Information

3th October 2022

The Satellite Data Search component is undergoing a scheduled maintenance and will not be accessible until 12/10/2022.

10th October 2022

The TAV file is updated (R072)

20th May 2022

The EVDC survey is open until June 17th

14th December 2021

The JATAC data protocol is defined

1st December 2021[Tweets by evdc_team](#)

The Team Behind

NILU

Ann Mari Fjaeraa, Project leader of the NADIR/EVDC system.

Main responsibilities: Cal/Val data, Metadata harvesting, GEOMS tools

Contact: nadirteam@nilu.no

Skytek

Jarek Dobrzanski

jarek.dobrzanski@skytek.com

ICHEC

Alastair McKinstry

info@ichec.ie

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ESA/ESRIN**Paolo Castracane: Paolo.Castracane@esa.int****Angelika Dehn: Angelika.Dehn@esa.int**

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