The ESA atmospheric Validation Data Centre (EVDC): The portal updates

Abstract

The **ESA atmospheric Validation Data Centre (EVDC)** is the official ESA repository for calibration and validation (Cal/Val) data, it provides an online information system supporting users to exploit campaign datasets for Earth Observation missions and applications in the atmospheric domain.
The EVDC web Portal: **https://evdc.esa.int/** offers several tools supporting the user in terms of Cal/Val data query, data upload/download, format conversion (GEOMS conversion routines) and for production of ECMWF parameter's maps.
The EVDC platform also provides an access to satellite data for specific missions, in particular the system supports new atmospheric composition/dynamic missions namely Sentinel-5P, Aeolus and, in the near future, EarthCARE.

Cal/Val Data

EVDC contains a large variety of data from a wide range of stations and measurement principles: Aircraft; Ground based and balloon data; Datasets mirrored from existing Cal/Val networks and includes **Fiducial Reference Data (FRM)** from several ESA projects/campaigns.

Satellite Data

The EVDC portal provides access to satellite products for specific missions: Sentinel-5P, AEOLUS and for future EarthCare products

Services and tools

Orbit Predictor and Overpass Tool (OPOT)

Based on continuous and automatic TLEs update. New Satellites and Instruments added. With OPOT you can:
- Search for overpasses by satellite/ instrument, as well as for joint overpasses between two satellites;
- Download overpass (CSV, KML or JSON
- Define virtual orbit for future satellites

Systematic Services

The systematic service allows to specify sub-setting jobs to run on a number of files at once, rather than individually. User can specify a location/polygon, date range, and product type, and the system automatically sub-sets all files which match that query. User can, then, check the Job Status Page, to download the result files individually, or in bulk.

Query the Cal/Val data

The Cal/Val data access in terms of query, upload and download has been strongly improved.

Satellite Data search and extraction

The EVDC platform hosts the HARP toolkit [1], It removes the need for the user to install the toolkit, handle large files, and have a huge computational load.
[1] HARP documentation:
https://cdn.rawgit.com/stcorp/harp/master/doc/html/index.html
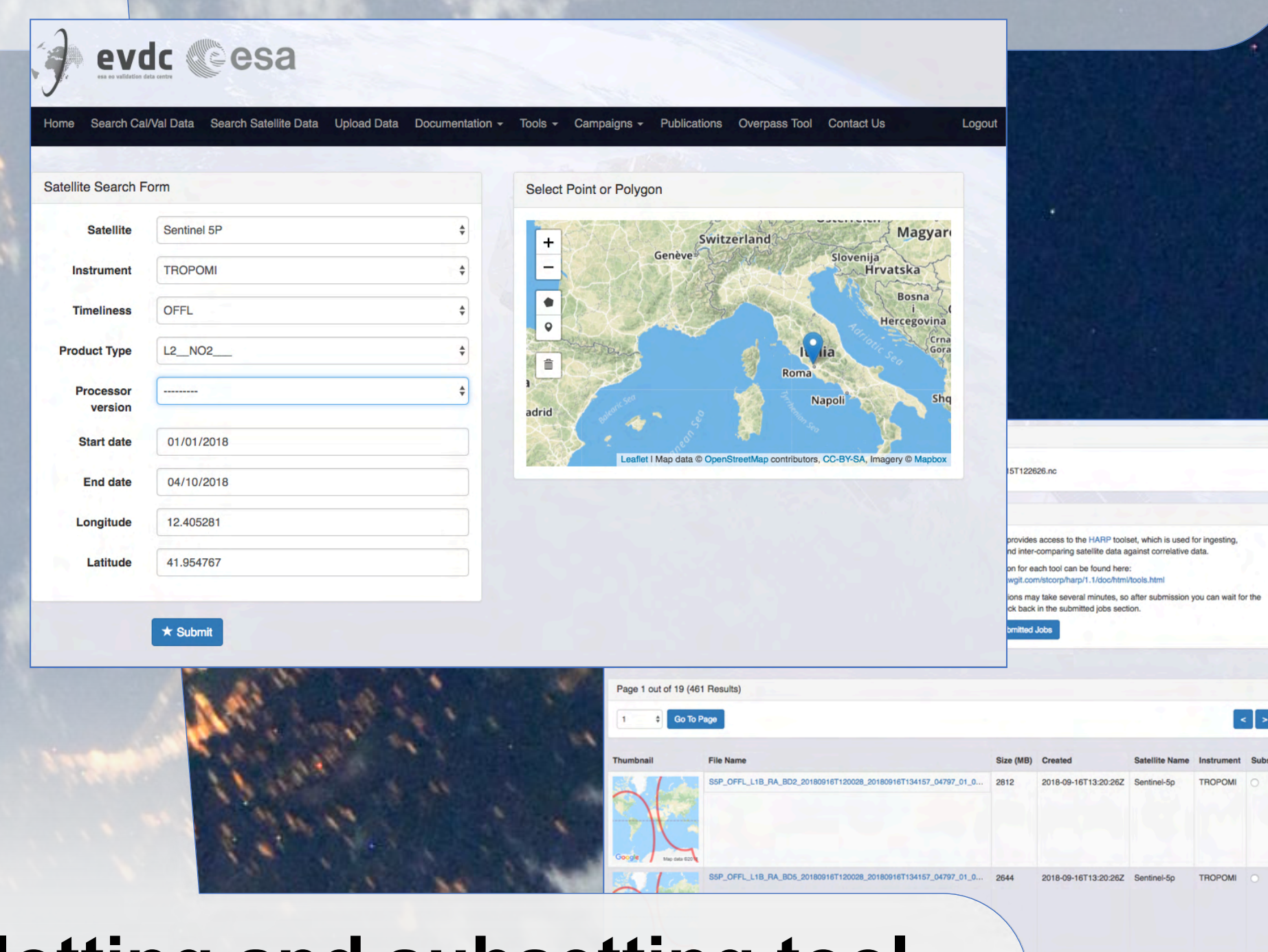
DOIs and landing pages

DOIs, including landing pages, can be issued from EVDC. In order to set up the required protocols, please contact the EVDC team nadirteam@nilu.no

ECMWF Plotting and subsetting tool

The access to the ECMWF forecast data is possible through a tool integrated with EVDC Web Portal. Users can access a page where they can select the date of the forecast, the parameter of interest and the area of interest on the interactive map.
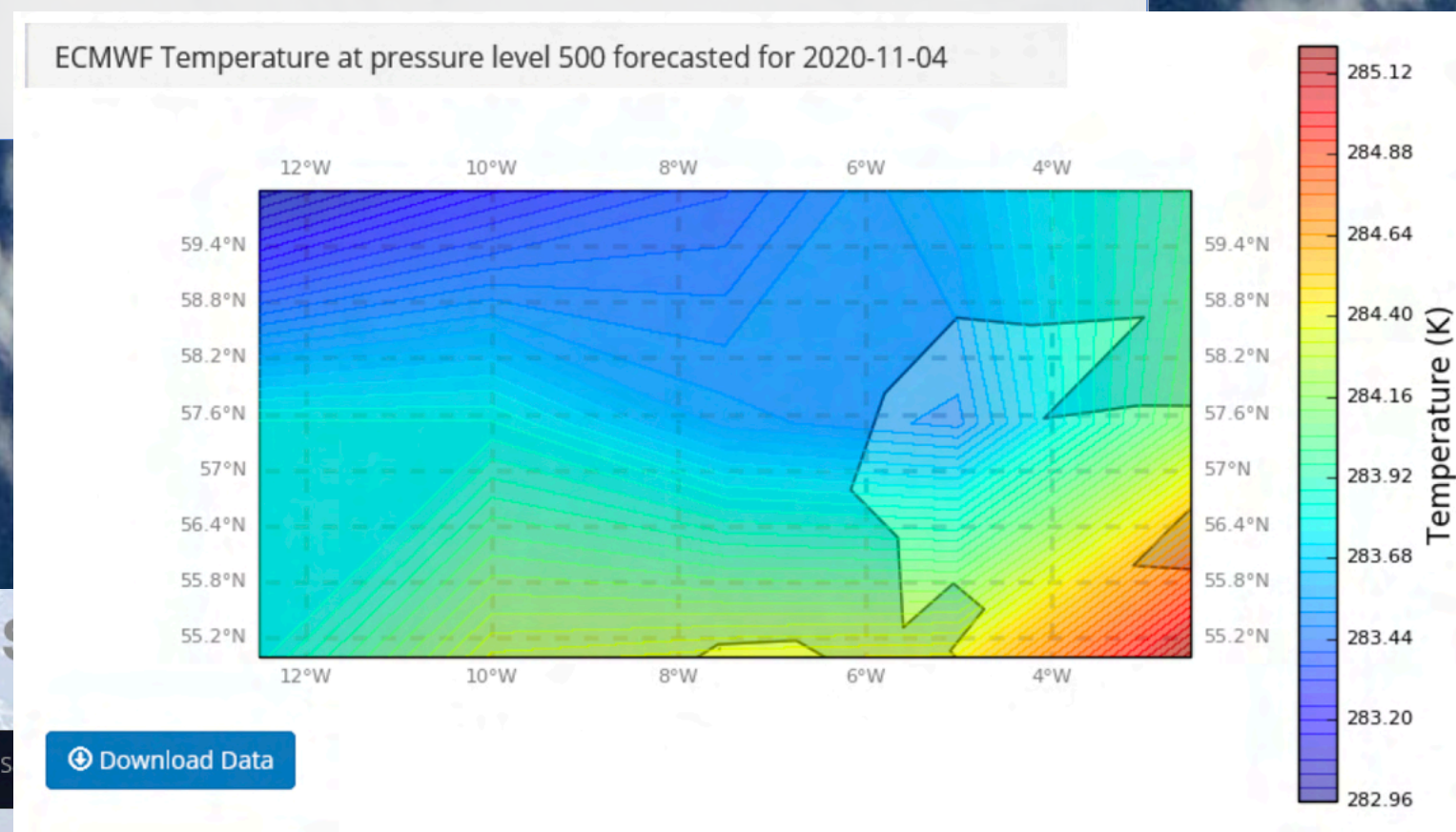
Video Tutorials

A set of new tutorials, are available on the Skytek's youtube channel , the videos cover most important functionalities and workflows in the EVDC platform:
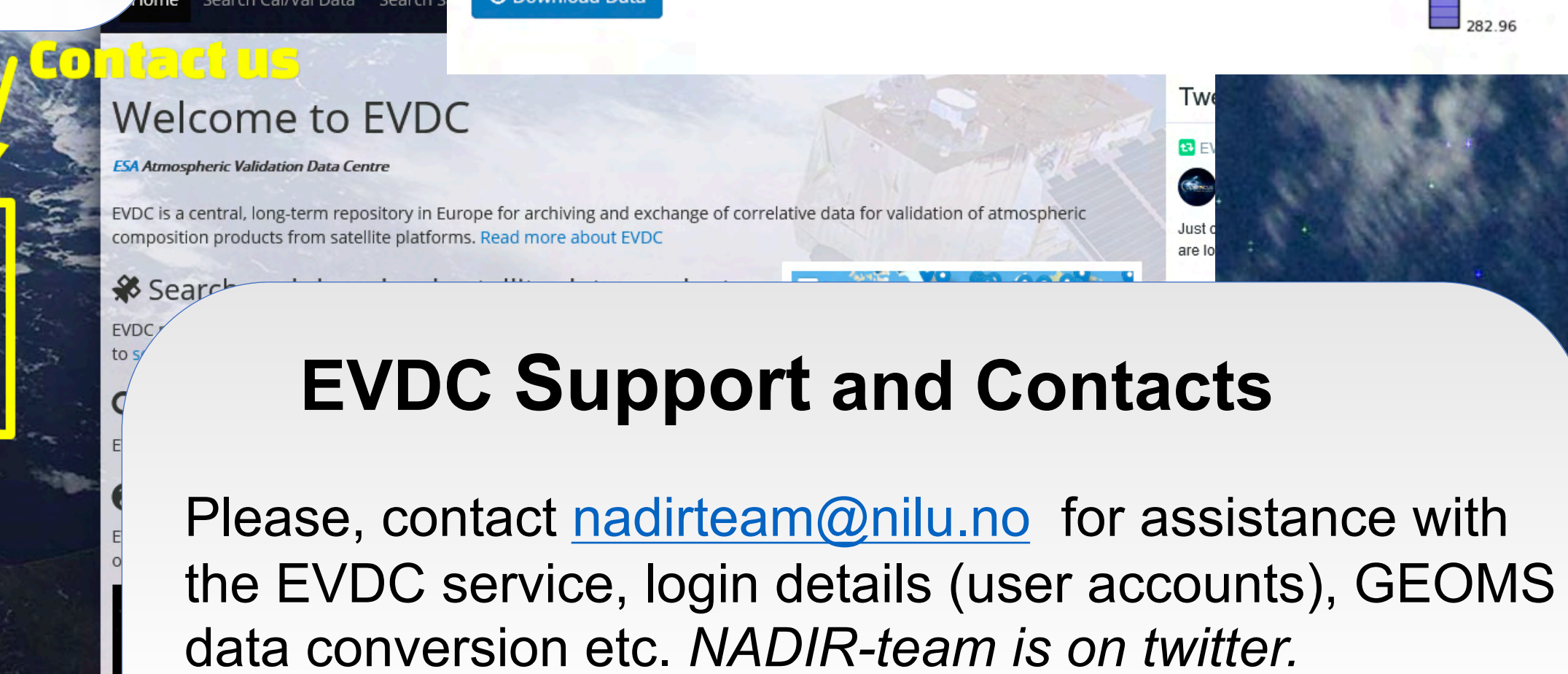
- EVDC Platform overview
- How to search for Cal/Val data?
- How to search and process the satellite data?
- How to use Orbit Prediction Tool?
- How to format Cal/Val Data?

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

Online GEOMS file generator

The tool provides 2 services: Create a new registered **metadata template** and a new **GEOMS compliant file**(s). (HDF4, HDF5 or netCDF)

GEOMS Tool

The GEOMS online tool is a set of functionalities to support data submitters with the data upload to EVDC, hereunder

- Create GEOMS compliant files from a set of ascii metadata and data
- Create new metadata templates for their specific measurement principles

Based on user input - the tool automatically generates the GEOMS headers and files and makes them available for download. The tool is easy to use and self-explanatory, but documentation and "how-to" documents are made available at https://evdc.esa.int/documentation/geoms/.

GEOMS File Creation

Create HDF4   Create HDF5   Create netCDF

New Metadata

Register a new Metadata template

EVDC Support and Contacts

Please, contact nadirteam@nilu.no for assistance with the EVDC service, login details (user accounts), GEOMS data conversion etc. *NADIR-team is on twitter.*
https://twitter.com/nadirteam_nilu

Skytek: info@skytek.com
ICHEC: support@ichec.ie
ESA: Angelika Dehn and Paolo Castracane:
angelika.dehn@esa.int and paolo.castracane@esa.int

Paolo Castracane[1], Angelika Dehn[2], Jarek Dobrzanski[3], Paul Kiernan[3], Ann Mari Fjaeraa[4], Alastair McKinstry[5]

1)-RHEA SYSTEM S.p.A.; 2)-ESA/ESRIN; 3)-Skytek 4)-NILU; 5)-ICHEC