EVDC Rehearsal guideline document for Aeolus campaign data

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1. Introduction

One of the objectives during the Aeolus Cal/Val & Science Workshop, 26.-29 March 2019 in ESA/ESRIN, is to present and discuss the validation tools and databases with a focus on corresponding rehearsal activities, including those related to the ESA Atmospheric Validation Data Centre (EVDC).

EVDC serves as a central, long-term repository in Europe for archiving and exchange of correlative data for validation of atmospheric composition products from satellite platforms. Several types of sources are contributing to the EVDC database: field measurement campaigns, monitoring networks, model data and measurements from individual scientists.

Campaign data sets, organised, produced or led within field measurement, and data from the Aeolus validation campaigns are expected to be uploaded to, and made available through the EVDC.

In preparation of the database- and tools rehearsal, the current document intends to provide an overview of EVDC and its guidelines for the Aeolus campaign data upload to the data archive.

The opening date of the rehearsal is announced at
https://wiki.aeolus.info/wiki/doku.php?id=calval:calval-start

Comments and feedback of the EVDC rehearsal will be collected during and after the dedicated rehearsal exercise. In addition, feedback by e-mail to nadirteam@nilu.no is very welcome. The aim is to take into account user recommendations for further improvement of the EVDC.

In the following part of the document specific Aeolus EVDC rehearsal tasks are described, while the Annex gives an overview of general EVDC aspects (e.g.: Data Protocol, Data Format).

2. Aeolus EVDC Rehearsal

The following steps need to be carried out by the PIs and co-PIs of the individual Aeolus projects to familiarise themselves with the EVDC system and to provide feedback on potential problems and improvements. Note, in case a PI is already a registered EVDC user, part of the rehearsal tasks are not necessary (e.g. user account creation):

3. Database information

3.1. User Account

Access to EVDC data catalogues is strictly personal through nominative login and password, and granted only after having signed the data protocol.

When this document is received at the data centre, the user is provided a personal username and password, together with instructions on how and where to upload the campaign data.

3.2 Upload of Aeolus AO test data products

Each PI, after having created its EVDC user account, is invited to upload a test data file into the Aeolus campaign area with the corresponding AO proposal identifier. The data may be either in GEOMS or non-GEOMS data format (see Annex for EVDC Data Format and GEOMS format aspects)

3.2.1 Upload of GEOMS Formatted Data

GEOMS formatted data should be uploaded to EVDC using the provided username and password through the web API at http://evdc.esa.int/upload/


Data is checked immediately by the data base system, and an e-mail summarising the data submission is sent to the data submitter.

Data submitters are advised to check their data with the online format checker available at: http://evdc.esa.int/tools/creating-hdf-files/ prior to the data submission.
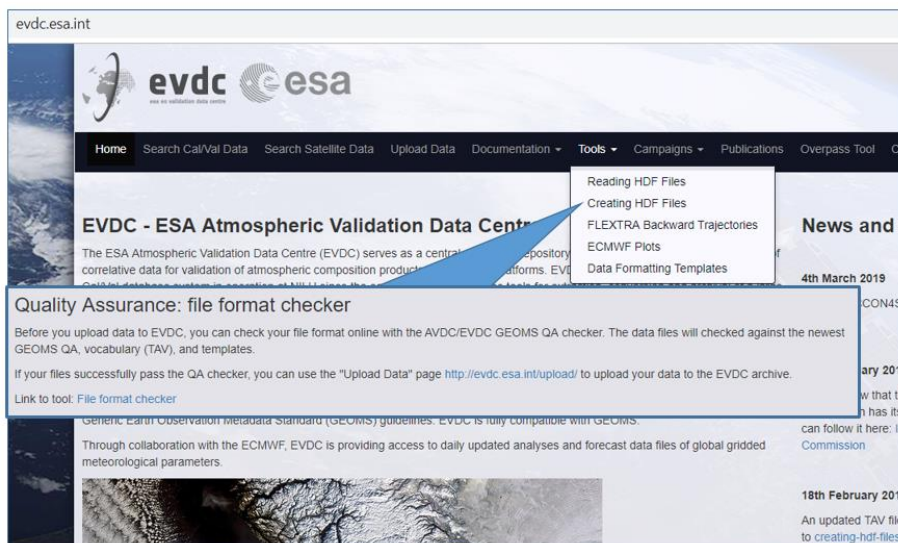
The data will appear in the Search Cal/Val Data directory (http://evdc.esa.int/search/) after submission if the files are correctly formatted. In case of metadata problems with the submitted data, the data submitter will be contacted by the EVDC team and a strategy on how to fix the errors will be set up.
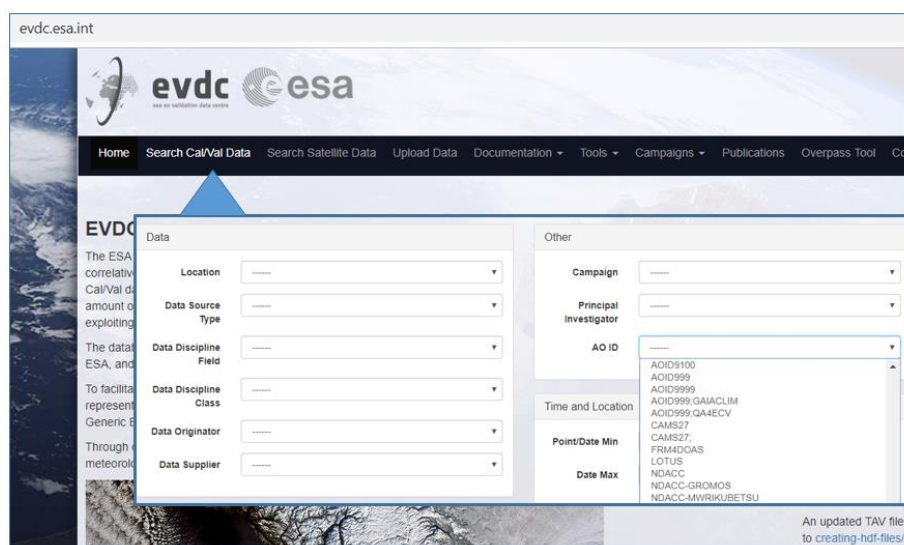

3.2.2 Upload of non-GEOMS Formatted Data

In cases when a GEOMS template is not available for a certain measurement principle, data shall be uploaded directly to EVDC via the ftp system set up on a dedicated server. The procedure for this is described in detail under the campaign pages (http://evdc.esa.int/campaigns/campaign-pages/)

All EVDC data submitters and users registered for a specific campaign, have access to the respective disc areas on the server and all corresponding data. The purpose of the data protocols is protect the Intellectual Property Rights of each dataset. Data is not shared outside the ASCV team.
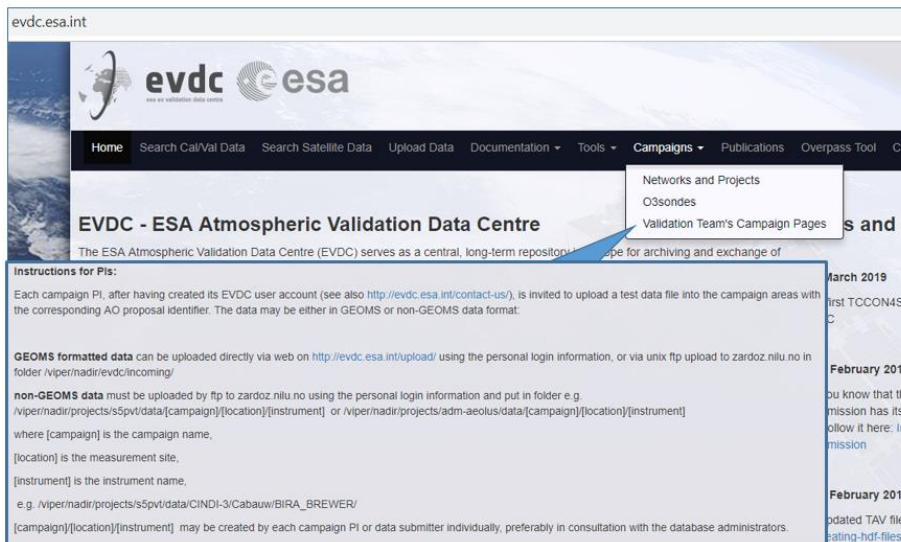
3.3 ECMWF Data and Plots

Through collaboration with the European Centre for Medium Range Weather Forecast (ECMWF) the EVDC is providing access to daily updated data files of global gridded meteorological parameters (http://evdc.esa.int/tools/ecmwf-plots) Access to ECMWF data is regulated through an agreement with NILU and the users of its data centres. All users who want access to the data need to sign the ECMWF data usage protocol, available upon request to nadirteam@nilu.no Please note that this protocol must be signed even though you already have a user account at EVDC.
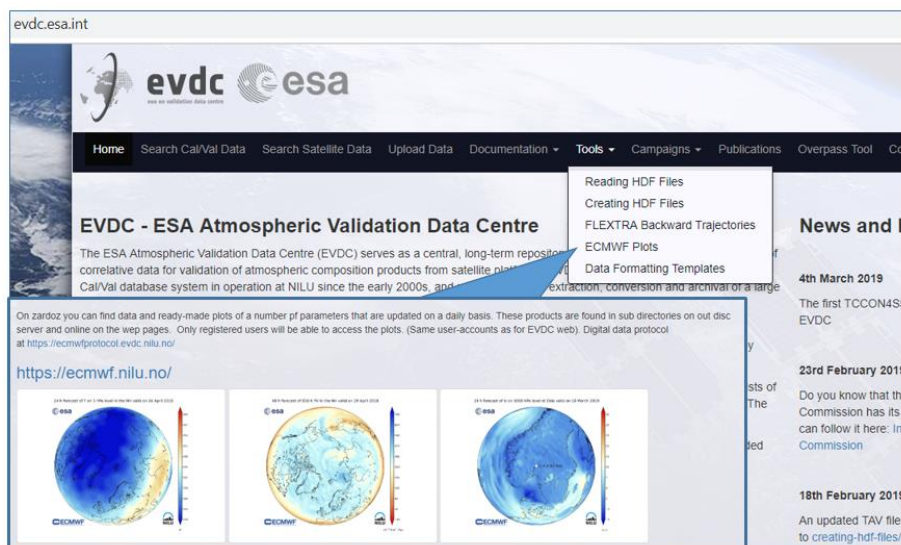
The EVDC users are invited to test and explore this service and provide recommendations for improvements or for specific needs related to the Aeolus activities to be carried out.

4. Orbit Predictor and Overpass Tool (OPOT)

The OPOT is a tool that allows users to specify an area of the Earth's surface and a time window, select a list of satellites, and apply a query to verify, if and when the satellite will perform observations in this region, matching, for example, specific ground based measurement observations.

Given a location or a Region of Interest (defined as a polygon) the OPOT produces a list of overpasses for that region and satellite for a future time range. Once defined a temporal window, cross-overpass for two satellites is also detectable.

This tool is expected a key tool for a number of the Aeolus PIs and you are therefore invited to test the OPOT as part of the EVDC Rehearsal and provide any feedback and comments.

ANNEX – EVDC General Aspects

Data Protocol

Data upload and download to/from EVDC is regulated by data protocol.

The aims of the data protocol is to encourage dissemination of data and results for scientists involved in measurement campaigns and contributing networks/stations and, to protect the rights of the individual scientists involved in these.

Access to the EVDC data hosted at NILU is granted only after having signed the data protocol.

The latest data protocol is available on the EVDC web portal. Users already registered in EVDC are not requested to sign new versions of the data exchange protocol because it does not change the agreement established with the previous version of this document.

Data Format

To facilitate exchange of validation data among investigators and missions, a common set of metadata templates has been set up. EVDC is fully compatible with these harmonized guidelines, named The Generic Earth Observation Metadata Standard (GEOMS).

Data uploaded to EVDC is required to follow the GEOMS metadata templates for the applicable measurement principle, if available. If a template is not available for a certain measurement principle: individual procedures may apply. These are described above in chapter upload of non-GEOMS formatted data.

Existing data templates are available at http://evdc.esa.int/tools/data-formatting-templates/

EVDC User support and Contact

The EVDC Campaign Service and Cal/Val portal is managed by the NILU EVDC team. Please contact nadirteam@nilu.no for assistance with the EVDC service, provision of login details (personal user accounts), GEOMS data conversion routines etc.

*NADIR-team is on twitter **https://twitter.com/nadirteam_nilu** - follow for updates data training courses, projects, news, maintenance, and other relevant topics.*

SkyTek: Paul Kiernan: Contact: info@skytek.com (Overpass tool)

ICECH: Alastair McKinstry: Contact: support@ichec.ie (Satellite Element)

ESA: Angelika Dehn and Paolo Castracane: Contact: angelika.dehn@esa.int / paolo.castracane@esa.int