

Introduction

The GEOmon distributed data centre enables search for and retrieval of atmospheric composition data across a number of primary databases. One important goal of the GEOmon distributed data centre is the integration of the different types of measurements of atmospheric composition complementary to satellite and remote sensing. This will improve the access to and application of the different types of measurement data, and thereby increase our understanding of the atmosphere. The data centre builds on existing infrastructures with long-term perspective of operation, it simplifies the data upload- and download procedures and provides visibility to all data providers, participating scientists and programmes.

<http://geomon.nilu.no>

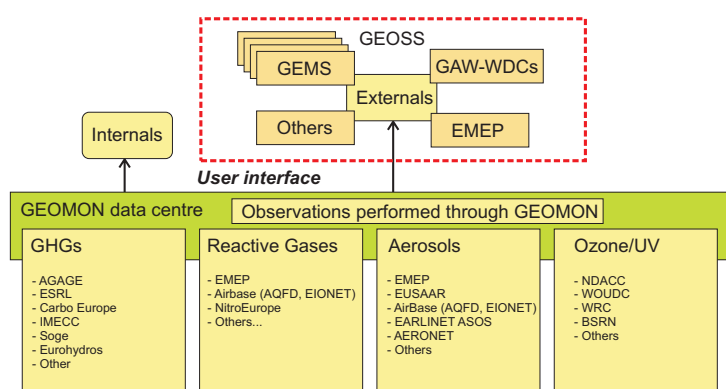


Figure 2

Methods

The GEOmon distributed database web portal is developed and maintained by NILU. It offers access to a wide variety of data related to atmospheric composition, both GEOmon funded data and other data. Datasets made available through the GEOmon Distributed Data Centre (GDC) are not physically stored in a common database, but provided through links to external databases.

These databases are to be considered the main archives of the data – GDC simply provides a common portal to access several databases simultaneously. The current version of GDC currently provides access to 11 databases, including the WMO WDCs, which are searchable through metadata available at GAWWIS. Component names are harmonised within the GDC – while the same component may have different names at the contributing databases. This facilitates the search and retrieval of similar data from different archives.

The integration of data from the project activities (A1-A4) in GEOmon will serve to reduce biases and random errors in satellite observations and facilitate interpretation of the columnar measurements in combination with surface data. This will result in a significant improvement in the use of existing and future satellite data.

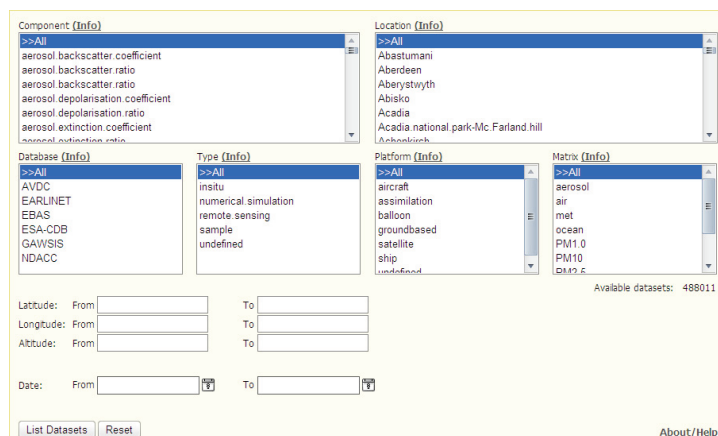
The database web interface gives e.g. scientists and other users a possibility to browse for and get an overview of the available data within a wide range of atmospheric measurements.

Details on location of measurement and start- and end date for each individual data set in the database are given by holding the mouse cursor above "Details" on the right hand side. (Figure 3)

Some data sets can only be downloaded manually from external databases, e.g. the GAWWIS data. This is indicated with a chain symbol and a link at the left hand side when listing the selected data.

Access to Aura Validation Data Centre (AVDC) data is restricted to user registered with the Aura validation activity. Before download, a login box will appear and users are prompted a message on how to get more information from AVDC. (Figure 4)

Once a user-name and password is obtained, one may download data through the GEOmon portal.



The screenshot shows the GEOmon search interface. It features several dropdown menus for selecting search criteria: Component (Info), Location (Info), Database (Info), Type (Info), Platform (Info), and Matrix (Info). Below these are input fields for Latitude, Longitude, Altitude, and Date, each with 'From' and 'To' options. At the bottom, there are 'List Datasets' and 'Reset' buttons, and an 'About/Help' link. The 'Available datasets' count is shown as 498011.

Figure 1

GEOmon in numbers

Currently close to 500 000 individual datasets from in-situ, numerical simulation, remote sensing and sample data from more than 1000 locations worldwide

11 databases

AVDC, EARLINET, EBAS, ESA-CDB and NDAAC and the WMO WDCs

7 platforms

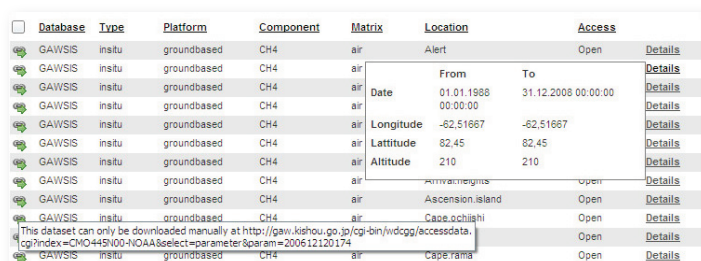
2117	aircraft datasets
5702	assimilation datasets
240872	balloon datasets
238078	groundbased datasets
243	satellite datasets
417	ship datasets
285	undefined datasets

151 different components

from air, particle, ocean, meteorology and precipitation, e.g. greenhouse gases, reactive gases, stratospheric ozone, aerosols, pressure, temperature, wind and cloud properties.

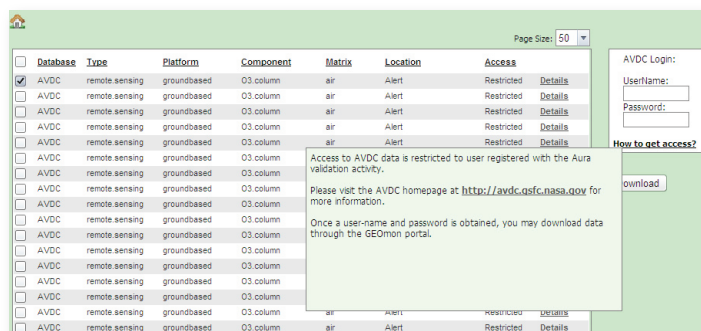
Longest data series more than 25 years continuous record.

Newest data set less than 1 day old.



Database	Type	Platform	Component	Matrix	Location	Access
GAUWIS	insitu	groundbased	CH4	air	Alert	Open
GAUWIS	insitu	groundbased	CH4	air	Date	From To
GAUWIS	insitu	groundbased	CH4	air	Longitude	-82.51667 -82.51667
GAUWIS	insitu	groundbased	CH4	air	Latitude	82.45 82.45
GAUWIS	insitu	groundbased	CH4	air	Altitude	210 210
GAUWIS	insitu	groundbased	CH4	air	Arrival/leaving	Open
GAUWIS	insitu	groundbased	CH4	air	Ascension island	Open
GAUWIS	insitu	groundbased	CH4	air	Cape ochilish	Open
GAUWIS	insitu	groundbased	CH4	air	Cape rains	Open

Figure 3



The screenshot shows the AVDC login and download interface. It includes a table of search results with columns for Database, Type, Platform, Component, Matrix, Location, and Access. Below the table, there is a login box with fields for 'AVDC Login:', 'Username:', and 'Password:'. A 'download' button is also present. A message box states: 'Access to AVDC data is restricted to user registered with the Aura validation activity. Please visit the AVDC homepage at: <http://avdc.gsfc.nasa.gov> for more information. Once a user-name and password is obtained, you may download data through the GEOmon portal.'

Figure 4

Rapid Delivery data

Non-validated preliminary data from GEOmon financed activities with short delay after measurement are stored at <ftp://ftp.nilu.no/pub/GEOmon/>