

### 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>

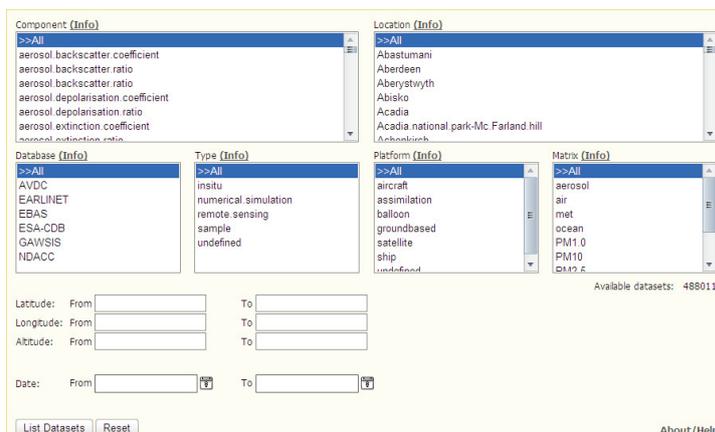


Figure 1

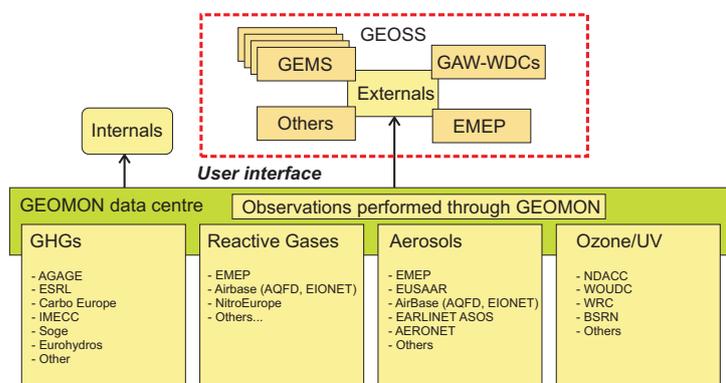


Figure 2

### 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 GAWSIS. 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 GAWSIS 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.

### 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
GAWSIS	insitu	groundbased	CH4	air	Alert	Open
GAWSIS	insitu	groundbased	CH4	air		Details
GAWSIS	insitu	groundbased	CH4	air	Date	From: 01.01.1988 To: 31.12.2008 00:00:00
GAWSIS	insitu	groundbased	CH4	air	Longitude	-82,51667 -82,51667
GAWSIS	insitu	groundbased	CH4	air	Latitude	82,45 82,45
GAWSIS	insitu	groundbased	CH4	air	Altitude	210 210
GAWSIS	insitu	groundbased	CH4	air	Alert	Open
GAWSIS	insitu	groundbased	CH4	air	Ascension island	Open
GAWSIS	insitu	groundbased	CH4	air	Cape ochlagh	Open
GAWSIS	insitu	groundbased	CH4	air	Cape rams	Open

Figure 3

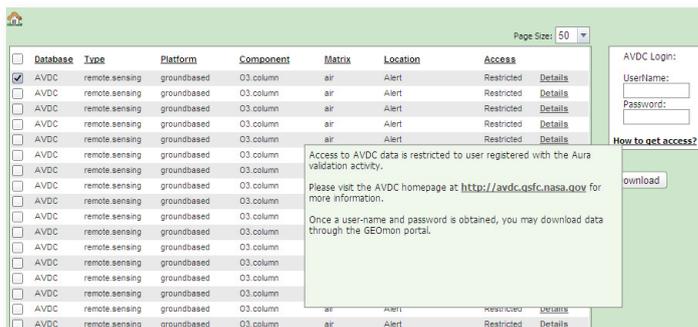


Figure 4

### 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/>