



The EOC Geoservice: Earth Observation and Geodata Access

Geospatial Data Pool

The German Satellite Data Archive (DSDA) within the Earth Observation Centre (EOC) of the German Aerospace Centre (DLR) maintains a huge database of Earth observation (EO) data supplied by national and international EO missions.

Selected data sets such as the digital elevation model of the DLR Shuttle Radar Topography Mission (SRTM X-SAR), atmospheric products for the Eumetsat Ozone Satellite Application Facility (O3M-SAF), as well as thematic products of the Advanced Very High Resolution Radiometer of the NOAA² satellite series are already available through the EOC Geoservice.

In future the Geoservice data pool will grow continuously.

Main Service Features

Data discovery and access are provided through OGC-Services. These are technical interfaces for data discovery, visualization, and access.

Data Discovery (CSW)

Each data set within the Geoservice has a corresponding metadata set describing the collection. Geospatial data can then be searched for using the Catalogue Service Web (CSW) as can be done by using the EOWEB GeoPortal.

Data Visualization (WMS)

Using the Web Map Service (WMS) geospatial data can be visualized in various GIS clients, Geoportals, Desktop GIS, mobile devices or virtual globes (see Figure 2).

Overview

The EOC Geoservice (subsequently Geoservice) provided by DFD-INF allows to administer, process, discover, distribute, and visualize geospatial data. Based on web technologies and running on high-performance hardware the Geoservice provides direct access to large geospatial datasets. Geospatial data and associated catalogue information are made available through standardized technical interfaces, i.e. Open Geospatial Consortium OGC-based services such as Web Mapping Service (WMS), Web Feature Service (WFS), Web Coverage Service (WCS) and Catalogue Service Web (CSW). In addition to system-based access, various clients, such as geographic information systems and geospatial data portals (EOWEB¹ GeoPortal EGP, Geoportal.De), make use of these interfaces and facilitate interactive catalogue searches as well as data visualization and download.

The Geoservice is closely related to the Data Information and Management System (DIMS) and extends the access to geospatial data at the EOC (see Figure 1). Besides the EOWEB/DIMS interface, which provides data access to the Earth Observation Community (HMA standard) the Geoservice provides geospatial data access to the GEO Community (INSPIRE/GDI-DE standard).

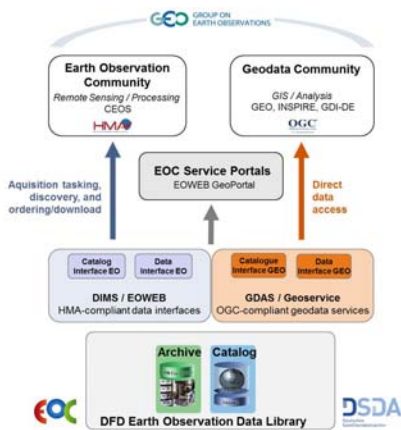


Figure 1: Data access

¹ The user interface Earth Observation on the WEB (EOWEB) provides access to the earth observation data available at the DFD.

² National Oceanic and Atmospheric Administration

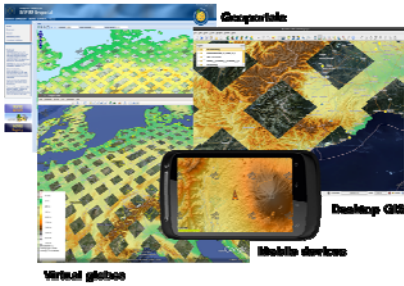


Figure 2: Examples of visualization of SRTM data using different devices.

Data Download (WCS/WFS)

Direct data access is available through the Web Coverage Service (WCS) and the Web Feature Service (WFS) (see Figure 3). Generating a specified WCS/WFS request the data for a defined area and time interval can be extracted in XML-format for further usage.

Data Integration and Accessibility

Besides the possibility to access data already available in the Geoservice, users are able and encouraged to upload their own geospatial data and products into the Geoservice for their own access or for sharing with other users or groups. A user management is available to restrict data access to selected users or user groups. Users can have their own project specific access point and URL. For more information contact the central Geoservice Management (geoservice@dlr.de).

Operations and Management

To guarantee a reliable service an Operations and Management Concept has been developed to organize technical and administrative sequences. Operational aspects are handled by Geoservice Operations while administrative aspects as well as overall organizational aspects are handled by the Geoservice Management. In addition, the tasks and deliverables of all involved groups (Software Development and Engineering, Infrastructure Provision, Data Integration) are listed in this concept.

Geoservice for You

DLR staff as well as external users can access the earth observation data made available via the EOC Geoservice for visualization and download. Moreover, DLR projects can make use of the Geoservice for making their geospatial data and products accessible to their users. For more information please contact geoservice@dlr.de.

Inside Geoservice

The EOC Geoservice comprises an comprehensive hardware and software infrastructure and is being professionally operated and managed.

Infrastructure and Software

Currently five SUN BLADE server modules are run by DFD-INF together with three storage trays providing a storage capacity of 15 terabytes. Six virtual machines with ten instances are currently running on those blades. Access to the Geoservice is provided through a proxy situated between the DLR-Firewall and the EOC-Firewall guaranteeing very high level of data security. The main entrance portal of the Geoservice is <http://geoservice.dlr.de/>.

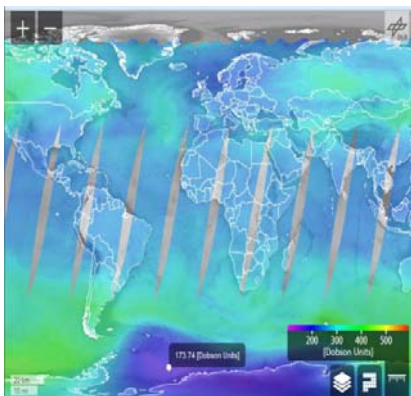


Figure 3: Ozone values provided by WCS.

Groups running their own services on their own hardware have the possibility to use the Geoservice portal to provide access to their data pool.

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