



The DIAS/CEOS Water Portal, distributed system using brokering architecture

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The DIAS/CEOS Water Portal is a one of the DIAS (Data Integration and Analysis System, http://www.editoria.u-tokyo.ac.jp/projects/dias/?locale=en_US) systems for data distribution for users including, but not limited to, scientists, decision makers and officers like river administrators. This portal has two main functions; one is to search and access data and the other is to register and share use cases which use datasets provided via this portal. This presentation focuses on the first function, to search and access data.

The Portal system is distributed in the sense that, while the portal system is located in Tokyo, the data is located in archive centers which are globally distributed. For example, some in-situ data is archived at the National Center for Atmospheric Research (NCAR) Earth Observing Laboratory in Boulder, Colorado, USA. The NWP station time series and global gridded model output data is archived at the Max Planck Institute for Meteorology (MPIM) in cooperation with the World Data Center for Climate in Hamburg, Germany. Part of satellite data is archived at DIAS storage at the University of Tokyo, Japan.

This portal itself does not store data. Instead, according to requests made by users on the web page, it retrieves data from distributed data centers on-the-fly and lets them download and see rendered images/plots. Although some data centers have unique meta data format and/or data search protocols, our portal's brokering function enables users to search across various data centers at one time, like one-stop shopping. And this portal is also connected to other data brokering systems, including GEOSS DAB (Discovery and Access Broker). As a result, users can search over thousands of datasets, millions of files at one time.

Our system mainly relies on the open source software GI-cat (<http://essi-lab.eu/do/view/GIcat>), Opensearch protocol and OPeNDAP protocol to enable the above functions. Details on how it works will be introduced during the presentation.

Users can access the DIAS/CEOS Water Portal system at <http://waterportal.ceos.org/>.