

EGU2020-21522

<https://doi.org/10.5194/egusphere-egu2020-21522>

EGU General Assembly 2020

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



## OpenSearch API for Earth observation DataHub service

Jovanka Gulicoska<sup>1</sup>, Koushik Panda<sup>2</sup>, and Hervé Caumont<sup>3</sup>

<sup>1</sup>Viderum (trading as Datopian), Germany (jovanka.gulicoska@datopian.com)

<sup>2</sup>Deimos, Lisbon, Portugal (koushik.panda@deimos.com.pt)

<sup>3</sup>Terradue, Rome, Italy (herve.caumont@terradue.com)

OpenSearch is a de-facto standard specification and a collection of technologies that allow publishing of search results in a format suitable for syndication and aggregation. It is a way for websites and search engines to publish search results in a standard and accessible format.

Evolved through extensions within an international standards organisation, the Open Geospatial Consortium, OpenSearch has become a reference to make queries to a repository that contains Earth Observation information, to send and receive structured, standardized search requests and results, and to allow syndication of repositories. It is in this evolved form a shared API used by many applications, tools, portals and sites in the Earth sciences community. The OGC OpenSearch extensions that have been implemented for the NextGEOSS DataHub, following the OGC standards and validated to be fully compatible with the standard.

The OGC OpenSearch extensions implemented for CKAN, the open source software solution supporting the NextGEOSS Datahub, add the standardized metadata models and the OpenSearch API endpoints that allow the indexing of distributed EO data sources (currently over 110 data collections), and makes these available to client applications to perform queries and get the results. It allowed to develop a simple user interface as part of the NextGEOSS DataHub Portal, which implements the two-step search mechanism (leveraging data collections metadata and data products metadata) and translates the filtering done by users to an OpenSearch matching query. The user interface can render a general description document, that contains information about the collections available on the NextGEOSS DataHub, and then get a more detailed description document for each collection separately.

For generating the structure of the description documents and the result feed, we are using CKAN's templates, and on top of that we are using additional files which are responsible for listing all available parameters and their options and perform validation on the query before executing. The search endpoint for getting the results feed, uses already existing CKANs API calls in order to perform the validation and get the filtered results taking into consideration the parameters of the user search.

The current NextGEOSS DataHub implementation therefore provides a user interface for users who are not familiar with Earth observation data collections and products, so they can easily

create queries and access its results. Moreover, the NextGEOSS project partners are constantly adding additional data connectors and collecting new data sources that will become available through the OGC OpenSearch Extensions API. This will allow NextGEOSS to provide a variety of data for the users and accommodate their needs.

NextGEOSS is a H2020 Research and Development Project from the European Community under grant agreement 730329.