



GeoNetwork powered GI-cat: a geoportal hybrid solution

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To the aim of setting up a Spatial Data Infrastructures (SDI) the creation of a system for the metadata management and discovery plays a fundamental role. An effective solution is the use of a geoportal (e.g. FAO/ESA geoportal), that has the important benefit of being accessible from a web browser. With this work we present a solution based integrating two of the available frameworks: GeoNetwork and GI-cat.

GeoNetwork is an opensource software designed to improve accessibility of a wide variety of data together with the associated ancillary information (metadata), at different scale and from multidisciplinary sources; data are organized and documented in a standard and consistent way. GeoNetwork implements both the Portal and Catalog components of a Spatial Data Infrastructure (SDI) defined in the OGC Reference Architecture. It provides tools for managing and publishing metadata on spatial data and related services. GeoNetwork allows harvesting of various types of web data sources e.g. OGC Web Services (e.g. CSW, WCS, WMS).

GI-cat is a distributed catalog based on a service-oriented framework of modular components and can be customized and tailored to support different deployment scenarios. It can federate a multiplicity of catalogs services, as well as inventory and access services in order to discover and access heterogeneous ESS resources. The federated resources are exposed by GI-cat through several standard catalog interfaces (e.g. OGC CSW AP ISO, OpenSearch, etc.) and by the GI-cat extended interface. Specific components implement mediation services for interfacing heterogeneous service providers, each of which exposes a specific standard specification; such components are called Accessors. These mediating components solve providers data model multiplicity by mapping them onto the GI-cat internal data model which implements the ISO 19115 Core profile. Accessors also implement the query protocol mapping; first they translate the query requests expressed according to the interface protocols exposed by GI-cat into the multiple query dialects spoken by the resource service providers. Currently, a number of well-accepted catalog and inventory services are supported, including several OGC Web Services, THREDDS Data Server, SeaDataNet Common Data Index, GBIF and OpenSearch engines.

A GeoNetwork powered GI-cat has been developed in order to exploit the best of the two frameworks. The new system uses a modified version of GeoNetwork web interface in order to add the capability of querying also the specified GI-cat catalog and not only the GeoNetwork internal database. The resulting system consists in a geoportal in which GI-cat plays the role of the search engine. This new system allows to distribute the query on the different types of data sources linked to a GI-cat. The metadata results of the query are then visualized by the Geonetwork web interface. This configuration was experimented in the framework of GIIDA, a project of the Italian National Research Council (CNR) focused on data accessibility and interoperability. A second advantage of this solution is achieved setting up a GeoNetwork catalog amongst the accessors of the GI-cat instance. Such a configuration will allow in turn GI-cat to run the query against the internal GeoNetwork database. This allows to have both the harvesting and the metadata editor functionalities provided by GeoNetwork and the distributed search functionality of GI-cat available in a consistent way through the same web interface.