

Improving data discoverability for the Antarctic Seismic Data Library System (SDLS) through SDN, ISO19115-3 and INSPIRE compliance.

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Introduction

The Antarctic Seismic Data Library System (SDLS) is a consolidated data dissemination initiative created in 1991 under the mandates of the Antarctic Treaty System (ATS) and the auspices of the Scientific Committee on Antarctic Research (SCAR), to provide open access to Antarctic multichannel seismic-reflection data (MCS) for use in cooperative research projects. The ATS mandates that all institutions that collect MCS data in Antarctica must submit their MCS data to the SDLS within 4 years of collection and remain in the library under SDLS guidelines until 8 years after collection, thereafter, the data switch to unrestricted use and can be requested to the SDLS for open use (Diviaco & Wardell, 2003).

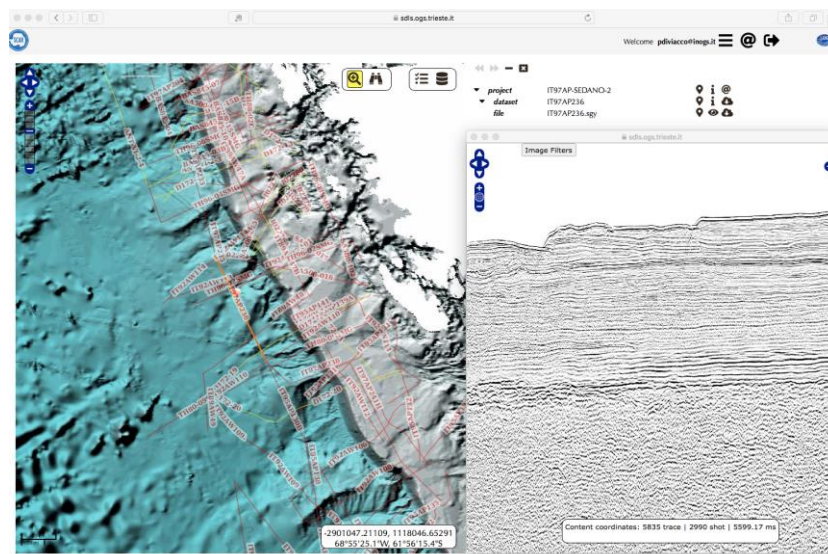


Figure 1: SDLS web portal allowing to view and interactively access all existing seismic data in Antarctica (<http://sdls.ogs.trieste.it>)

The web system

In order to trigger and foster as much as possible collaborative research within the Antarctic research community, the SDLS developed a web portal (<http://sdls.ogs.trieste.it>), hosted by OGS, that allows any data therein to be discovered, browsed, and directly accessed and downloaded. Great importance is given to compliance with the ATS legal framework and the Intellectual protection of data owners.

The SDLS web portal uses several resources and software developed within the SNAP web-based geophysical data access framework developed by OGS (Diviaco, 2005) and later integrated with the

SeaDataNet infrastructure within the GeoSeas Project (Diviacco & Busato, 2013). The O&M and SensorML based metadata model used in SDLS, allows to detach general metadata from domain specific metadata. O&M and SensorML metadata in the case of SDLS is produced internally but can be prepared also using the Mikado software made available by SeaDataNet and later upload to the system. The metadata model allows therefore to embed all controlled vocabularies made available by SDN/BODC. Due to several legacy issues, unfortunately, not all services available in SNAP are available also in the SDLS. Recently, a lot of work has been done in order to overcome these limitations and to expand its interoperability with most of the international dissemination initiatives. Key to this upgrade has been the integration in the system of SeaDataNet controlled vocabularies, and the strive to reach ISO19115-3 and INSPIRE compliance. This has been attained through the introduction and integration in the SDLS of GeoNetwork v. 3.10.1.

Integration of SDLS and GeoNetwork (v. 3.10.1)

GeoNetwork is a catalogue application that provides tools for metadata editing and search functions. The metadata editor allows to generate content that complies with the ISO19115-3 metadata standard and allows to associate concepts from different thesauri to a record, in order to describe the metadata within the scope of the INSPIRE 2007/2/CE Directive. GeoNetwork allows importing external thesaurus in order to assign, as keywords, specific concepts and terms to a metadata record. In this way, through the import of the SeaDataNet common vocabularies (W3C DCAT Themes for the SeaDataNet EDMED Catalogue) it was possible to describe the SDLS metadata records with standardised terms.

. Furthermore Geonetwork provides a validation system to verify the fully compliance of a record with INSPIRE requirements and the ISO19115-3 metadata standard. In this framework, the integration of the SDLS web portal with GeoNetwork allows to obtain a repository and a registry of metadata in a catalogue based on INSPIRE and ISO19115-3 standards.

Conclusions

The SDLS is the main data hub for the geophysical community working in the area of Antarctica. The portal, developed and hosted by OGS, allows researchers to access over 300.000 km of freely accessible seismic lines, and attained through the integration with GeoNetwork v.3.10.1 the possibility to be compliant with ISO19115-3, INSPIRE and SeaDataNet which vastly improved its discoverability from most of the existent international data dissemination initiatives.

SDLS web site: <http://sdls.ogs.trieste.it>

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