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The European-wide Geo-Seas data space for marine geological and geophysical data and its novel approach in Metadata, Data models and Semantics emerging from the case of Seismic data.

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The Geo-Seas EU FP7 project aims at providing means to deliver and access integrated sets of primary marine geological and geophysical data. These are among the most important elements in the process of scientific and applied marine research, economic activities, and sustainable environmental management, at regional, European and global scales.
Such data space requires an European-wide services infrastructure, standardised practices by the data repositories, and middleware so that end users can identify, locate and access the data they might be interested in.
Being Geo-Seas a sibling of the SeaDataNet project, it adopts technologies developed within the latter, extending them and introducing new paradigms.
Within this perspective a specific attention was reserved to Seismic data, due to its value in commercial use and scientific community positioning, on one hand, and to the difficulties in handling its file size on the other.
To tackle these issues a novel approach was devised, that uses web based data-owner-side visualization facilities installed at each data provider premise. This overcomes the limitations of the common practices in data dissemination, where eventually the data is downloaded and used "off-line" at the end-user workstation. This solution is based on a seismic data visualization software that is strictly integrated with the GeoSeas (and SeaDataNet) project middleware and that therefore allows to perform consistent user authentications and requests handling across all domains and partners.
Considering the large and ever increasing number of datasets made available within the project, and that deep examination of seismic data via the viewer could take time, it was devised to introduce a more efficient way to select useful hits within the Geo-Seas data space extending the already existent ISO19115-based SeaDataNet discovery mechanism (CDI). This has been achieved through the introduction of a "browsing" level linked to the CDI where further information on the seismic data is made available within O&M and SensorML documents. Information is entered using controlled vocabularies made available to the whole community of users and partners.
The whole system have been tested successfully and is currently operational at a subset of all the Geo-Seas partners. We are currently planning to extend the paradigm to other domains that have similarities with Seismic data.