IEO marine data discovery, representation and retrieval through metadata interoperability

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Introduction

Access to marine data is vitally important for marine researchers, but also for a wide variety of professionals who use these data to tackle problems related to climate change, coastal engineering, fishing or aquaculture, among others. In addition, the demand of this kind of information by the general public is becoming more and more common (recreational navigation, nautical sports, tourism, etc.). Unfortunately, marine datasets are usually stored in specialized portals and they are often not indexed for internet search engines, and therefore will not appear in end-user search results. Moreover, finding them on these portals is usually complex for the non-specialized public. Data producers interested in targeting a wider and general public, should design user-friendly sites, with the use of the proper terminology, prioritizing end-user interests and letting their applications interact with the public through social network sites. However, from an organizational point of view, achieving this goal implies to walk a long path where standardization and interoperability are main steps for managing the large and diverse data sets that are collected by the oceanographic surveys and the ocean observation systems.

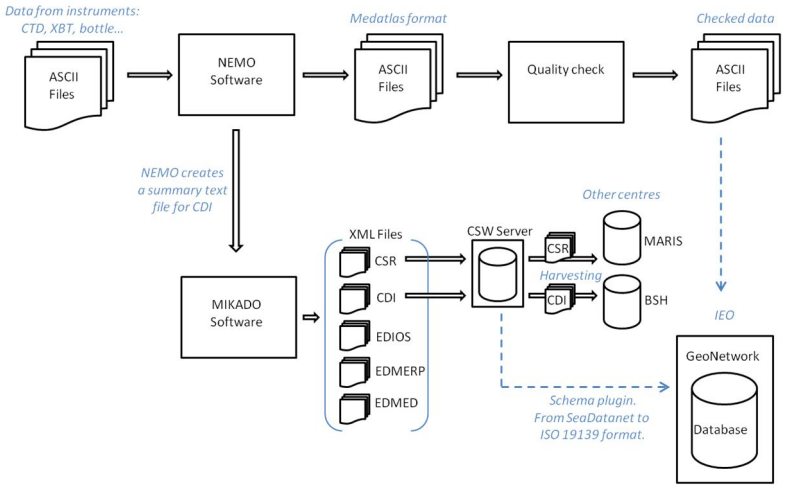

Fig. 1: Schema of the marine data infrastructure and work-flow at the IEO

In Spain, since 1964 the *Instituto Español de Oceanografía (IEO)* maintains the National Oceanographic Data Center (NODC), responsible for the compilation, storage and distribution of marine data. The integration of the institution into larger international frameworks includes the Global Ocean Observing System (GOOS) and its regional groups, International Oceanographic Data and Information Exchange (IOC/IODE), or European consortiums as SeaDataNet and EmodNET. They have contributed to move forward under the guidelines of standardization for geospatial data and information of projects, vessels and observatories. However, an additional effort must be done to accomplish the INSPIRE Directive (2007/2/EC) and to bring marine data closer to the Spanish end-user community.

Methods

Nowadays, marine data received at the IEO Datacenter are transcript in the auto-descriptive ASCII SDN-Medatlas format (1) by using the NEMO javatool (2). Data Quality Control procedures (3) are

performed to detect missing mandatory information, format errors, duplicates and outliers. Following the agreed criteria, a quality flag is attached to each numerical value in order to preserve original data, provide them added-value and permit future re-validations. Each profile or dataset is accompanied of a XML-metadata file, which describes the dataset. These metadata are shared within the SeaDataNet infrastructure. To properly accomplish with ISO-19139 and satisfy the requirements under the Spanish transposition of INSPIRE Directive (2007/2/EC), a transformation of these metadata are performed. Transformed metadata are distributed through a customized GeoNetwork portal, focused on cataloguing data served by the IEO.

Conclusions

The aim of the IEO GeoNetwork Data Portal is to become in the starting place to find spatial national datasets for the Spanish community. The portal facilitates the discovery, multiple usage and dissemination of geospatial ocean-related information.

Acknowledges.

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Bibliography.

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(2) SeaDataNet NEMO user manual . http://www.seadatanet.org/content/download/25784/176636/file/sdn_Nemo_UserManual_V1.6.2.pdf

(3) SeaDataNet Quality Control Procedures v2.0 http://www.seadatanet.org/content/download/18414/119624/file/SeaDataNet_QC_procedures_V2_%28May_2010%29.pdf