Revision and documentation of the CDI metadata model as a ISO 19115 profile

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SeaDataNet 2 is an FP7 project (grant agreement 283607), started on October 1st, 2011 for a duration of four years, which aims to upgrade the present SeaDataNet infrastructure into an operationally robust and state-of-the-art Pan-European infrastructure for ocean and marine data and metadata products.

The Common Data Index (CDI) constitutes an online metadata service providing discovery and access capabilities to final users.

Professional data centres, active in data collection, constitute a Pan-European network providing on-line integrated databases of standardized quality through CDI.

The roadmap for the second phase of SeaDataNet include:

- Realization of technical and semantic interoperability with other relevant data management systems and initiatives on behalf of science, environmental management, policy making, and economy
- Definition, adoption and promotion of common data management standards to ensure the platforms interoperability.

The CDI metadata model and its XML schema have in particular been the object of standardization efforts through the SeaDataNet project; the second phase will pursue the work.

CDI metadata model development started in 2005; the CDI schema was based upon the then available ISO 19115 DTD. Several releases of both schema and data model documentation have followed to arrive at the 1.6 version in June 2010. This version contains important modifications and updates (e.g. GML and Service Bindings extensions, instrument multiplicity, spatial resolution and frequency, . . .), reflecting updated requirements and needs of the marine data community; at this time CDI should be considered a de-facto standard for marine metadata in the European region.

Compliance with ISO standards has always been sought (e.g. a past work targets the use of ISO 19139 XML schema as a CDI metadata encoding).

The present work aim has been to revise and formally document the existing CDI metadata model as a ISO 19115 metadata standard profile: this step was needed to ease sharing and adoption of the CDI metadata model even at a wider level.

The revision consisted in examining each documented CDI elements; the conformance requirements of a metadata profile shall relate to the conformance requirements in the base standard in the following ways:

- Mandatory requirements in the base standard shall remain mandatory in the profile.
- Options in base standards may remain optional or may be changed within the profile to become: mandatory, conditional, out of scope or prohibited.

A mapping from the ISO 19115 core elements to the CDI ones has been successfully identified.

Also a mapping from the documented CDI model elements to the ISO 19115 elements has been identified, proving that CDI elements can be accomodated in different categories:

- Elements for which semantically correspondent ISO 19115 fields are identified.
- Elements for which semantically correspondent ISO 19115 fields are identified, but an extension/restriction was

introduced (e.g. the extended code list Function code).

- Elements for which a semantically correspondent ISO 19115 fields could not be identified (e.g. Database reference). Thus, they must be considered profile extensions.

The CDI format was then formally described in a ISO19115 profile document, by following the guidelines available in the base standard.