2nd S-100WG MEETING
Genoa, Italy – 15-18 March 2017

Paper for Consideration by the S-100

Proposed Extension to the IHO Registry

Submitted by:	IHO Secretariat / Powell
Executive Summary:	This paper proposes extension to the IHO Registry structure and registration process.
Related Documents:	IHO - S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry.; S-100 - IHO Universal Hydrographic Data Model
Related Projects:	All other S-100 related WG and PTs developing S-100 based Products

Introduction / Background

The IHO Registry application is based on the ISO 19126 and 19135 standards for geographic information. ISO 19126:2009 specifies how to create an online register for a feature concept dictionary that contains abstract feature and attribute concepts, which may then be specified in detail as feature types in feature catalogues (as per ISO 19110 - Methodology for feature catalogues).

This paper proposes that, whereas the structure specified in ISO 19126 and 19135 may be suitable for a single domain Registry, it is not suitable for a multi-domain Registry (such as the IHO GI Registry).

S-100 Edition 2.0.0 states that the "Feature Concept Dictionary" (FCD) includes; "Feature Concepts", "Attribute Concepts", "Information Concepts", "Enumerated Value Concepts" and "Codelists". Currently all proposals to register items must be categorised as one of these types.

Once an item has been registered, it is not possible to change it from one concept type to another (e.g. from feature to attribute), without duplicating the item. This is making the maintenance and management of the original definition and terms very difficult to achieve and it is not practical in a multi-domain environment. It is also makes it very difficult for the Register Manager to ensure that proposals are consistent with earlier proposals and with the current content of the Register. Figure 1 below provides a simple illustration of the current registration process.

Figure 1 – Current IHO Feature Concept Dictionary

Proposal

It is proposed that the IHO Registry should be extended to include a "Concept Register" (CR) which will make provision for a lower level of abstraction of "Concepts". The Concept Register should;

- Be the primary resource where all registered concepts are stored and managed.
- Be "stateless", i.e. items should not be classified as feature types, information types, attributes, enumerated values or codelists.
- Include only items such as the term, definition, description, validity status (i.e. valid, superseded or retired) and other management / maintenance metadata. Camel case identifiers should be all lower case or included for both feature and attribute types.
- Include only one instance of each concept.
- Be the single/common source from which data dictionary concepts will be derived and used to model features, attributes etc …. These will be used to populate the "Feature Data Dictionary" Register.

If a Concept Register is implemented in the IHO GI Registry, it will be necessary to move certain metadata items (e.g. valid / superseded …, implementation date etc …) from the current Feature Concept Dictionary Register to the Concept Register. Every item in the "Feature Data Dictionary" Register must have a reference to an item in the Concept Register.

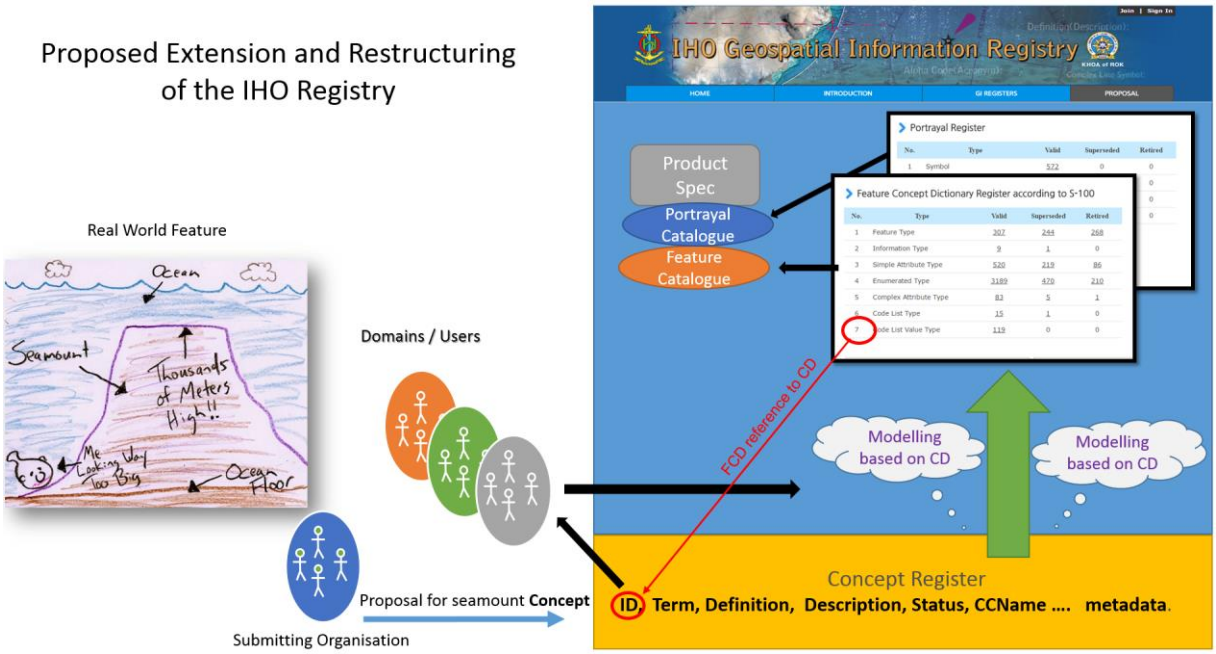

Figure 2 – Proposed Change to the IHO Registry

Recommendations

It is proposed that the sustainable management of the items in the FCD may be compromised if the current structure of IHO Registry is not extended / modified.

Justification and Impacts

The proposed changes will require substantial reconstructive surgery to the Registry application and will also influence the further development of the Feature Catalogue Builder application. It will however simplify the process of registering items and will facilitate the consistent and sustainable maintenance of the IHO Registry content.

Action Required

The S-100WG is invited to:

a. **Note** this paper.

b. **Discuss** the issues presented in this paper and identify what further action is required.