Paper for Consideration by S-100WG

S-100 Metadata – Exchange Sets and discovery metadata

Submitted by:	S-124CG Chair and NIPWG Chair
Executive Summary:	The current minimum S-100 metadata require attributes that are not applicable to all S-100 based product specifications, and there is a need for a common set of rules for how to extend metadata in S-100 based product specifications to ensure the greatest possible uniformity of metadata within the S-100 eco system.
Related Documents:	S-100
Related Projects:	S-100, S-124, S-122, S-123

Introduction / Background

Part 4a-D of S-100 Edition 3.0.0 describes the normative guideline for making exchange sets in S-100. This includes the content of discovery metadata for the various components of an exchange set, as well as the content of catalogue files showing the exchange set content. S-100 metadata is a profile of from the ISO 19115 minimum metadata set, sometimes referred to as core metadata.

Analysis/Discussion

The content of the discovery metadata and catalogue generally are appropriate from an ENC perspective. However, not all content is relevant from both the Navigational Warnings perspective and the Nautical Publications perspective. This paper addresses mandatory attributes which are neither relevant for Navigational Warnings nor for Nautical Publications. Specifically, the editionNumber attribute is not applicable to navigational warnings, as these are messages that are either cancelled at a given data and time, or a cancellation message is sent to cancel an indefinite message. Similarly, the mandatory attributes verticalDatum and soundingDatum have little or no applicability to Marine Protected Areas and Marine Radio Services products, and will definitely not be applicable to all Navigational Warnings.

A further issue is that Navigational Warnings datasets have additional metadata that is significant, but S-100 does not elaborate on how to extend the S-100 metadata, or if it can be extended at all.

S-124CG could ignore the current S-100 Part 4a-D and develop own variation of Exchange Sets and discovery metadata, but this might increase implementation burden, and it is therefore considered better to develop a common practice for all S-100-based product specifications that use exchange set as the main packaging unit.

Conclusions
The current approach to metadata in S-100-based specifications is in need of revision to better accommodate the variety of specifications that are in development in IHO as well as outside of IHO under international e-Navigation initiatives.

Recommendations

Mandatory metadata attributes that are profiled from ISO should be made nill-able, while all S-100 specific metadata attributes should be changed to optional. The overall status of the metadata should be as a sort of super-set of metadata which product specification developers can pick from to choose the relevant attributes.

Guidance should be added to S-100 on how to limit or extend the predefined Part 4a-D metadata set of an individual product specification at the product specification level. This guidance should include any clarification on how the treat the core metadata versus the optional parts, if there is any difference.

Further guidance should be added to S-100 to establish a common approach to extend the predefined S-100 metadata so that new product specifications with additional metadata requirements will in general not require special implementation to accommodate any additional metadata. This guidance should follow the ISO 19115-1:2014 Annex C principles. Appendix 1 A to this paper gives a proposed starting point for this guidance. Note that some of these rules may require the establishment of a metadata register.

Justification and Impacts

S-100 Part 4a-D is well suited to ENC, but less so for some upcoming products. Therefore an amendment to S-100 should be done to reduce the need for deviation from the S-100 normative rules.

Action Required of S-100WG
The S-100WG is invited to:
   a.   Note this paper
   b.   Discuss the recommendations made in this paper
   c.   Approve the S-100 change request