Proposal by the S-124CG chair and NIPWG chair

S-100 Metadata – Exchange Sets and discovery metadata

Background

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

Problem statement

- The normative discovery metadata (S100_DatasetDiscoveryMetaData) includes mandatory attributes that are not relevant for all S-100 based product specifications.
  - editionNumber; not applicable to NWs as these are managed by identifiers and expiration date, or a cancellation message.
  - verticalDatum; not applicable to all NWs, of little relevance to S-122 and S-123.
  - soundingDatum; not applicable to all NWs, nor to S-122 and S-123.

- These attributes are specifically added to S-100.

Problem statement

- Navigational Warnings datasets have additional metadata requirements, but S-100 does not elaborate on how to extend the S-100 metadata, or if it can be extended at all.
    - Issue date for S-124 need also time
    - Cancellation date and time need to be added
    - Product Specification tests may reveal more metadata needs

Discussion on options

- Considering the building block principle of S-100, S-124CG could ignore S-100 rules and develop own variation of metadata, but this might increase implementation burden. <u>This is the do nothing option.</u>

- NIPWG has developed S-122 and S-123 with null values for the non-relevant attributes. <u>NIPWG **has** developed it's own variation due to lack of guidance in S-100.</u>

- Prefer to develop a common practice for all S-100-based product specifications that use exchange set as the main packaging unit.
  - Add rule that allows mandatory metadata to be nill-able.
  - Make all S-100 specific metadata optional.
  - Add guidance for how to constrain or extend S-100 metadata.
  - Such guidance should follow ISO 19115-1:2014 Annex C principles.

Some implications to consider

- Proposed extension guidance is based on ISO 19115-1:2014 Annex C principles, and proposed wording is below. The bold text is to highlight some key implications of this proposal.

  - 1) Extended metadata elements shall not be used to change the name, definition or data type of an existing element.
  - 2) Extended metadata may be defined as classes and may include extended and existing metadata elements as components.
  - 3) An extension is permitted to impose more stringent obligations on existing metadata elements than the standard requires. (**Metadata elements that are optional in the standard may be mandatory in an extension**.)
  - 4) An extension is permitted to contain metadata elements with domains that are more restrictive than the standard. (**Metadata elements whose domains have free text in the standard may have a closed list of appropriate values in the profile**.)
  - 5) An extension is permitted to restrict the use of domain values allowed by the standard. (**If the standard contains five values in the domain of an existing metadata element, the extension may specify that its domain consists of three domain values. The extension shall require that the user selects a value from the three domain values.**)
  - 6) An extension is permitted to expand the number of values in codelists or enumerated lists. Extending codelists or enumerated lists are discouraged, even in profiles. When they must be extended care should be taken to minimize the number of additional entries. **Also, the extended codelist or enumerated list should be published or otherwise made available.**
  - 7) An extension shall not permit anything not allowed by S-100.

How to publish extended codelists or enumerated lists? Metadata register?

Recommendations

- In the spirit of making S-100 more 'universal';
  - Add rule that allows mandatory metadata to be nill-able.
  - Make all S-100 specific metadata optional but keep alignment with ISO 19115-1.
  - Add guidance for how to constrain or extend S-100 metadata. Suggest to use proposed wording.