NCWG/NIPWG Meeting
Paper for Consideration by NCWG/NIPWG

Report on S-100 Working Group Activities

Submitted by:	S-100 Working Group Chair
Executive Summary:	Report on S-100 Working Group Activities.
Related Documents:	NCWG2 – 8.14A,B,C
Related Projects:	S-100

Introduction / Background

The IHO S-100WG is responsible for the following activities of the HSSC:

- Maintain, develop and extend
    - o S-100 Universal Hydrographic Data Model
    - o S-99 Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry:
- Supervise the management and development of the S-100 Geospatial Information Registry
- Advise and support the development and maintenance of S-100 based product specifications in liaison with the relevant IHO bodies and non-IHO entities

This paper summarizes the following activities that NCWG and NIPWG may find relevant to their work programmes.

Analysis / Discussion

Latest Documents Published since 2016:

- S-100 – Universal Hydrographic data Model (Edition 3.0.0- to be released June 2017)

Edition 3.0.0 includes numerous clarifications, corrections and extensions intended to accommodate the requirements of new S-100 based Product Specifications. The following table summarizes the major changes from edition 2.0.0 and 3.0.0:

#	S-100 Part	Part Name	Brief Description	Type	Status/Comment
1	7	Spatial	Clarification on internal and external boundaries for areas with holes	Clarification	Accepted
2	4A	Metadata	S100_Support File Format (add Tiff)	Clarification	Accepted
3	4A	Metadata	Invalid Reference to a clause that does not exist	Correction	Accepted
4	9C	SVG Profile	Draft profile of SVG elements that are used in the creation of S-100 symbols	Extension	Accepted • This is needed for the S-100 portrayal mechanism as it defines the symbol format
5	11	Product Specification	Clarifies the rules for namespaces for product specifications	Clarification	Accepted
6	10C	HDF	Adds HDF as an encoding format for S-100	Extension	Accepted • This is needed for S-100 Product Specifications that utilize gridded formats such as S-102 and S-111

7	Cover	Cover	Amends the copyright note	Clarification	Accepted
8	10A	8211	Needed to amend the 8211 to handle a conditional need for the SEGH field	Correction	Accepted
9	5	Feature Catalogue	Adds in Dataset Attributes to the FC model	Extension	Not Accepted • An alternative method was proposed and accepted using the 8211 encoding
10	9	Portrayal	Correction of editorial issues	Correction	Accepted
11	4A	Metadata	Exchange Catalogue Metadata harmonization and include the S-101 data coverage methodology	Correction	Accepted
12	5	Feature Catalogue	Feature catalogue model and schema extended to include roles in information bindings	Extension	Accepted
13	10b	GML	Place existing description of associations in a sub-section and add a second sub-section describing an alternate method for encoding feature and information associations	Extension	Accepted
14	2B	Portrayal Register	Inclusion of the Portrayal Register Model into S-100	Extension	Accepted
15	9	Portrayal	Modification for pointSet/Multipoint features	Correction	Not Accepted • Deferred until more testing could occur and the Portrayal Catalogue Builder is functioning
16	4A	Metadata	PDF as a support file format	Extension	Accepted
17	5	Feature Catalogue	Clarification on the use of supertypes	Clarification	Accepted
18	8	IGD	Alignment to revised ISO models	Correction	Accepted
19	4A	Metadata	Amend the definition of layerID	Clarification	Accepted

Discussion Topics of the S100WG of interest to NCWG/NIPWG:

S-100 Infrastructure

IHO Register:
For much of 2016, the ROK has worked to rebuild the interfaces and functionality of the S-100 GI Registry. They have primarily focused on the Feature Concept Dictionaries so that the wider S-100 user community can begin to propose new items in support of their product specifications. The S-100 GI Registry underpins the entire S-100 infrastructure and this item has been the highest priority for the S-100 WG as it has a direct effect on the functionality of the S-100 Feature Catalogue Builder and the S-100 Portrayal Catalogue Builder.

Work on the major interfaces was completed in September 2016 and has been opened up to those developing product specifications.

In order to operate the registers according to S-99, the IHO will need to set up a Domain Control Body and an Executive Control Body.

The Domain Control Body shall consist of a representative of each of the domains recognized in each Register type and members are responsible for:

- acting as the spokesperson for their domain,
- canvassing other members in their domain for an opinion on the acceptability of any new proposal. How this is organized is at the discretion of the Domain Owners, and
- forwarding a decision to the Register Manager within 60 days.

The Executive Control Body shall consist of a representative of each of the Domains and will monitor and advise the Register Manager(s) and act as arbiters for any decisions or disputes in the Register process. In the event that a resolution cannot be achieved, the ECB may ask for the decision of the HSSC.
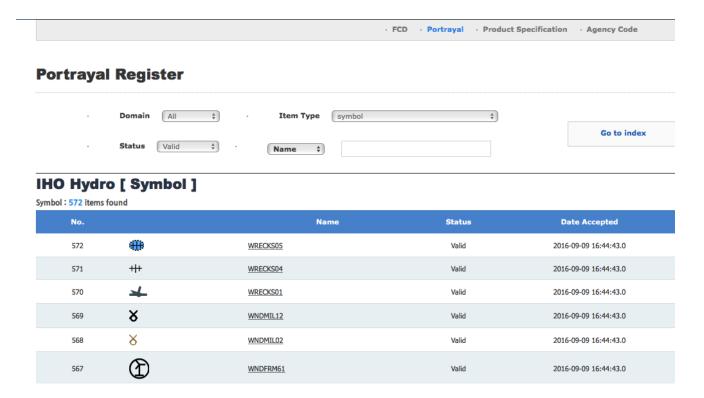
Because NIPWG and the S100WG have agreed to merge into a single IHO Hydro Domain, it is recommended that representatives from both groups be appointed to the Domain Control Body and the Executive Control Body.

Feature Catalogue Builder (current status and future plans):

The Republic of Korea has generously supported the development of the feature catalogue builder (FCB) and currently has the ability to produce S-100 compliant feature catalogues. Currently, access to the FCB is limited to the developer's of IHO product specifications.

IHO Portrayal Register (current status and future plans):

The portrayal register has been rebuilt by ROK and is divided into the same domain structure as the feature concept dictionary. The symbol format that is used in the Portrayal Register is .SVG. In addition, as new symbols are developed for use in various product specifications, the proposals should use the same approval process that is used for the FCD.

No.		Name	Status	Date Accepted
572		WRECKS05	Valid	2016-09-09 16:44:43.0
571		WRECKS04	Valid	2016-09-09 16:44:43.0
570		WRECKS01	Valid	2016-09-09 16:44:43.0
569		WNDMIL12	Valid	2016-09-09 16:44:43.0
568		WNDMIL02	Valid	2016-09-09 16:44:43.0
567		WNDFRM61	Valid	2016-09-09 16:44:43.0

Portrayal Catalogue Builder Status

Currently, the portrayal catalogue builder has been stood up and is undergoing testing, but is not available for wide use by product specification developers. Once, the S100WG has tested the PCB

concepts it will contact the various product specification developers to establish a set of credentials and build portrayal catalogues for the different specifications under development.

S100 Interoperability Specification

It was recognized by the S100WG that there needed to be an S-100 Interoperability Specification for use in navigation systems that will harmonize the portrayal of different types of datasets. The initial draft was delivered in August and reviewed by the S100 Focus Group in September. This specification will be incorporated into the S-100 Test Bed so that it may be refined. Currently, it anticipated that it will be finalized in conjunction with S-101.

Outstanding Issues for NCWG:

At NCWG2, S-100 put forward the need for the development of new symbols for new items that were proposed by S-101. As of April 2017, the S-101 project team is still waiting on the recommendation of NCWG for the way forward on the look and feel of the new symbols. The S-100 working group urges NCWG to move forward with the new symbols so that S-101 can develop a complete set of portrayal rules and associated symbology.

Issues for Consideration by NIPWG:

There are two issues that the S100WG invites NIPWG to consider:

- During the testbed process, a potential issue with the GML encoding was brought to the attention of the S100WG. It was identified that there was a weak mapping between the Feature Catalogue and the GML encoding, which made it difficult for implementation.
- There should be a valid schema for GML that is available to system implementers.
- NIPWG consider nominating members to the IHO Hydro Domain Control Body (covered under S100WG2 – 10.2

Action required of NCWG/NIPWG

The NCWG/NIPWG invited to:
    a.   **Note** this report.
    b.   **Note** issues within the report of interest to the S-100 working group.