



7th S-100 Working Group (S-100WG) Meeting

Update the S-100 Infra-system to be in line with S-100 Ed. 5.0.0

Agenda Item 6.2



IHO

INTRODUCTION / BACKGROUND

International
Hydrographic
Organization

- The IHO and KHOA developed the S-100 infra-system to support the development of product standards based on S-100.
- In 2022, S-100 5.0.0 was approved, and according to the S-100 Implementation Roadmap (2020~2030),
- S-10X standards require the development of 2.0 operating version to be in line with S-100 5.0.0.
- Since the update of the S-100 infrastructure system is required in relation to the revision of the S-100 5.0.0, updates and plans for the S-100 infrastructure system are presented



IHO

S-100 GI REGISTRY

International
Hydrographic
Organization

- Items applied in the S-100 Registry
 - Apply the proposal process of Concept/Data Dictionary Register
 - Introduce revised S100_CD_Information class
 - Add 15 portrayal type like Display Mode, Display Plan (Part 9-13.3.15)
- Items that require updating
 - Add and change Portrayal Register item Type (Part 2b-4.1)
 - Delete: Cascading Style Sheet
 - Change: Colour Profile → Colour Palette, Display priority → Drawing Priority
 - Add: Colour Value, Alert, Alert Message, Alert Highlight
 - Apply Viewing Group and Associated Viewing Group Layer of deactivation of Portrayal Register



IHO

S-100 GI REGISTRY

International
Hydrographic
Organization

- Planned other enhancements to the S-100 Registry
 - Registration and management of UOM (Unit Of Measure) and Constraints
 - Registration and management of Association and Role
 - Database redundancy for stable Registry operation
 - Unification of individual DB connection functions such as S-100 Tool-Kit into an integrated API



IHO

FEATURE CATALOGUE BUILDER

International
Hydrographic
Organization

- Main changes in the FC data model of S-100 5.0
 - Add Product ID
 - Change of binding of Feature type and Information type from 1 to 1~*
 - Change of namespace used in FC
 - Update of FC XML Schema
- S-100 FCB
 - S-100 FCB 2.3.2 → S-100 FCB 2.4.0 (Editing S-100 4.0 based FC and converting to S-100 5.0.0 based FC)
 - S-100 FCB 2.3.2 → S-100 FCB 3.0.0 (Editing S-100 5.0.0 based FC)
- Maintenance of S-100 FCB
 - Support for S-100 4.0.0 is to be maintained until the end of 2023
 - completed the development of FCB 2.4.0 and FCB 3.0.0 and updated S-100 Toolkits (in line with S-100 5.0.0 to support S-101 FC 1.1.0)



IHO

PORTRAYAL CATALOGUE BUILDER

International
Hydrographic
Organization

- S-100 PCB
 - Developed to support XSLT-type rule files and PC catalogue production
 - Due to extensive changes, significant revision to the PCB was required
 - Major challenges
 - Intended to produce various rules according to the combination of primitive and attribute values
 - Difficult to create rules in all cases
 - Following update method was proposed
 - Manual creation and editing of Rule files is recommended
 - PCB is developed and changed to a tool that can create PC catalogue by registering manually edited Rules.
 - Expanded functions to include Alert & Indication catalogue
 - Suggest an update plan with a professional tool for the production and management of PC catalogue



IHO

DCEG COMPOSER

International
Hydrographic
Organization

- Purpose
 - Supports DCEG production by configuring DCEG basic templates using S-10X FC and inputting remarks for each feature type and information type
 - Closely related to the FC data structure
- Planned update
 - Binding structure change of Feature and Information type
 - Support S-100 4.0 based FC and S-100 5.0 based FC
 - Need to separate the program version



IHO

KHOA S-100 VIEWER

International
Hydrographic
Organization

- Maintenance of KHOAS-100 Viewer
 - 6 upgrades from version 1.0.12 to 1.0.17
 - S-10x GML editing function (prototype), improved conformity to S-100 portrayal standard, S-102 2.1.0 support
 - Improvement of other user convenience functions, etc.
 - Improved system stability and functions by resolving issues registered
- Use of Viewer
 - Release open source version of Viewer
 - Review of pilot-produced S-10X data
 - KHOA's S-100 data test
 - Applied to the development of the S-98 interoperability catalogue
- Planned update
 - S-100 5.0 support, Exchange set and metadata, S-98 IC



IHO

OTHER TOOLS

International
Hydrographic
Organization

- **Symbol editor**
 - No significant changes in the symbol parts
 - Errors and improvements identified in the process of creating and editing SVG symbols
 - Additional updates are planned
- **FC to Document tool**
 - Conversion of FC data into a human-readable document
 - Functional change related to FC data loading is required
- **Others**
 - IC Builder, Exchange set builder, Line style builder, Color profile builder
 - Difficult to maintain and update



IHO

PROPOSED PLAN OF S-100 TOOLS

International
Hydrographic
Organization

- S-100 tools
 - Except FCB/PCB/DCEG composer, evaluated to have low use
 - With WG's opinion, discontinue other tools and focus on major tools

Num	S-100 Tools	Issues	Proposed decision
1	FCB	Divide version to support S-100 4.0 and 5.0	Continue
2	PCB	Focus on compiling PC catalogue using manually edited rule files	Continue
3	DCEG Composer	Update to apply the revised FC model	Continue
4	Symbol editor	Add new function like converting TINY SVG to S-100 SVG and improve user interface	Continue
5	FC to Doc converter	No support for revision requirements	Not supported



IHO

UPDATE PLAN OF S-100 INFRA-SYSTEM

International
Hydrographic
Organization

- S-100 Infra-system update
 - S-10X requires an operating version (2.0) to be in line with S-100 5.0
 - S-100 Infra-sys required to support it

Num	S-100 Infra-system	Update plan of S-100 5.0
1	S-100 GI Registry	2023, update to include requirements of S-100 5.0
2	Feature Catalogue Builder	Complete in 2022, When working S-101 FC 1.1.0, update the tool if needed in 2023
3	Portrayal Catalogue Builder	2023, Develop changes with manual XSLT Rule management and PC catalogue management tools
4	DCEG Composer	2023, update FC loading function to be in line with S-100 5.0.0
5	Symbol editor	2023~2024, Update SVG editing functions
6	FC to Document converter	No update plan



IHO

ACTION REQUIRED OF S-100WG

International
Hydrographic
Organization

- The S-100WG is invited to:
 - note the update plan of the S-100 infra system to be in line with S-100 Ed. 5.0.0.
 - provide any comments for the plan.