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Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **X** ENG **□**  PAP **X** Input

**□** DTEC **□** VTS **□** Information

Agenda item [[2]](#footnote-3) n.n

Technical Domain / Task Number 2 …………………………………

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Progress of S-240 update

# Summary

The IALA ENG committee developed the S-240 DGNSS Station Almanac product specification for the exchange of DGNSS station information, which has been reviewed and tested in some members. The S-100 referenced by S-240 has changed, and the S-240 revision has become necessary according to comments from IALA members. This paper describes the progress of the S-240 update, which revised the data model for DGNSS Station almanac and changed the feature catalogue/ GML schema.

## Purpose of the document

This paper aims to report on the progress and major contents of the S-240 revision based on the latest version of S-100, and test comments from IALA member

## Related documents

S-100 IHO Universal Hydrographic Data Model (Edition 5.1.0, October 2023)

# Background

S-240 is a product specification developed for the exchange of GNDSS Station information by the IALA ENG committee and was developed based on the 3rd edition of S-100. The S-100 has been revised to edition 5.1, and some IALA member countries have tested and commented on the S-240 data model. Meanwhile, the function of S-100 Tools used to develop the S-100/S-200 series product specification has been improved. It is now possible to utilize the S-100 tools in the S-240 revision.

# Discussion

3.1 Comments on existing S-240 data model and catalogue

While testing the S-240 data model, the Finnish Transport Infrastructure Agency identified issues such as differences in product standard editions, inconsistency between data model and feature catalogue and provided the following comments.

* The edition S-240 product specification in the IALA website and the IHO GI Registry are different.
* Inconsistencies between S-240 data model and feature catalogue such as lack of association and roles
* Existing edition was developed based on old version of S-100
* The data types of some attributes are defined incorrectly

Since S-240 was developed based on the old edition of S-100, it should be updated according to the latest one, and identified errors need to be revised according to Finland's comments. Additionally, it is required to create FC and GML schema using S-100 Tools provided by IHO.

3.2 S-200 Pilot training of IALA WWA

IALA WWA conducted an S-200 pilot training course to develop a regular curriculum for those in charge of developing and utilizing S-200 series product specifications. UKHO, PRIMAR, and KRISO participated as teacher, and trainees from the UK, Ireland, France, Denmark, Finland, Norway, Sweden, and Japan in the Aton and VTS domains attended. In this course, the process from drafting a sample data model in Aton to producing sample data was conducted. In particular, IHO's latest S-100 tools was applied to exercise creating feature catalogue, GML Schema, and SVG symbols. S-240 revision is possible using the S-100 Tools used in the S-200 pilot training course.

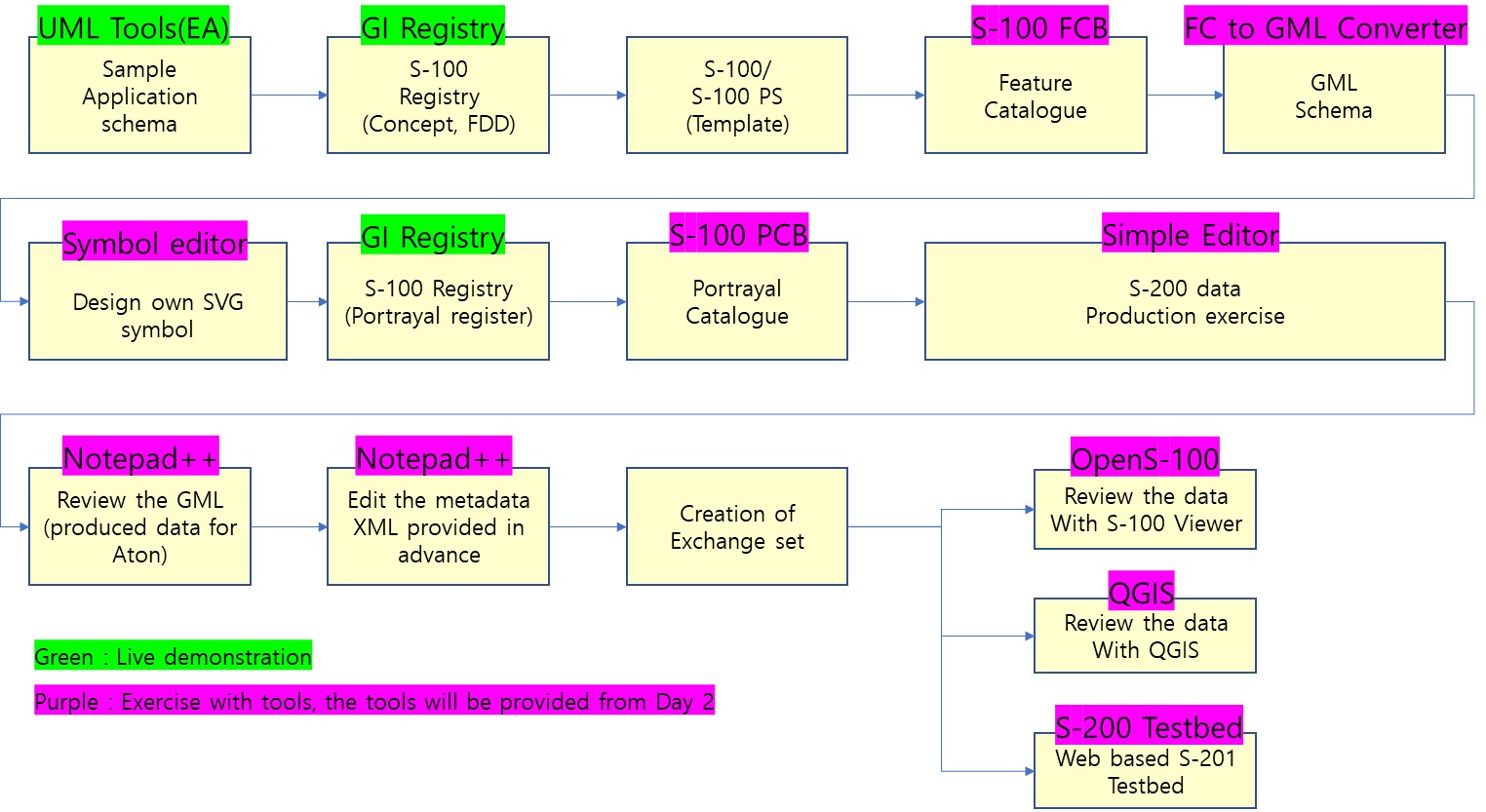


Fig. 1 Steps of practical exercise in the S-200 pilot training

3.3 Major update of S-240

According to Finland's comments, it was assumed to modify the linkage relationship between the feature type and information type included in the S-240 data model, and to change the information type included in the S-240 data model to a feature type. The S-240 data model was revised and supplemented by reviewing the S-100-based data model development procedure and similar cases. As the S-240 data model is revised, the product specification revision has been carried out using the following procedures.

* (UML tool) Revision of S-240 data model
* (FCB) For the revision of data model, Production of new FC through FCB
* (FC to GML Schema converter) Create GML schema using converter using new FC
* (DCEG Builder) Provision of DCEG base template by applying FC into DCEG Builder
* (Symbol editor) Improve SVG Symbol of DGNSS Station
* (PCB) Portrayal catalogue including DGNSS Station symbol

A major change in S-100 edition 5.1 that must be referenced is the exchange set metadata model, which was also reflected in this S-240 revision work. The revision (draft) to the S-240 DGNSS Station Almanac product specification is attached as a separate file.

# Action requested of the Committee

The Committee is requested to consider the progress of S-240 DGNSS Station Almanac Product Specification, and take actions as appropriate.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-2)
2. Leave open if uncertain [↑](#footnote-ref-3)