Paper for Consideration by S-100 TSM5

S-100 Test Bed Platform

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Executive Summary:	This document discusses a need to develop a test bed platform and invites the TSM to consider its recommendations.
Related Documents:	S-100 Test Bed Framework
Related Projects:	S-100 based Product Specification Development

Introduction / Background

Since S-100 was published in 2010 and S-102 *Bathymetric Surface* in 2012, other S-100 based product specifications (PSs) have not been published. However, as S-100 was further developed in accordance with the requirements from several domains, its current 3.0.0 edition was updated in April 2017 and many S-100 based PSs are currently under development based on the latest 3.0.0 edition. The list of S-100 based PSs can be found on the IHO website at https://www.iho.int/mtg_docs/enc/S-100/S-100_PS.htm.

One of the major characteristics of S-100 is its Infrastructure which consists of the GI registry, Feature Catalogue Builder (FCB) and Portrayal Catalogue Builder (PCB). In S-100 world, the S-100 Infrastructure is an essential platform or system to develop PSs in accordance with official procedures such as S-99 and S-100 Infra work flow. However, when it comes to developing and test versions of PSs, there has been no mechanism or system to support this phase.

Therefore this document discusses a need for a system and mechanism (or a guideline) required to test S-100 based PSs under development and proposes a way forward.

Analysis/Discussion

The S-100 Working Group set up S-100 Infrastructure in order to support S-100 concept such as registry and plug and play with catalogues. The S-100 Infra has a role and procedure to develop PSs in accordance with relevant IHO standards and guideline. Therefore, to complete a PS it is required to test some version of the draft PS including a draft FC/PC. However, it will be much complex if the PS only applies the S-100 Infra flow for testing. For instance, a feature should be registered in the GI registry according to S-99 approval process if necessary, and then the FCB creates a FC using the Feature Data Dictionary and the PCB processes the work accordingly.

Furthermore, in order to support harmonized display of different sets of S-100 PSs data, the S-100 Working Group is developing the Interoperability Specification (IS). And to implement such as S-100 ECDIS concept, it will be easier to apply the Interoperability Catalogue (IC) if a procedure which involves developing and testing PSs and relevant system are established.

Therefore, it should be considered to provide more flexible and systematic mechanism for testing and sharing all information of developing versions of S-100 PSs.

High level Procedures for developing and testing PSs

A PS developer who intends to have it incorporated into S-100 ECDIS needs to develop a PS by reviewing and applying considerations required by the IS. Please see the IS for further details. This document only discusses the procedure for developing PSs and the required system.

S-100 Infrastructure

As it can be seen from Figure 1 below, in order to develop a PS, objects/symbols need to be first registered to the GI registry (FC/Portrayal Register), then a catalogue for the PS is created using the FCB and PCB, and finally the PS is provided through the Product Register.

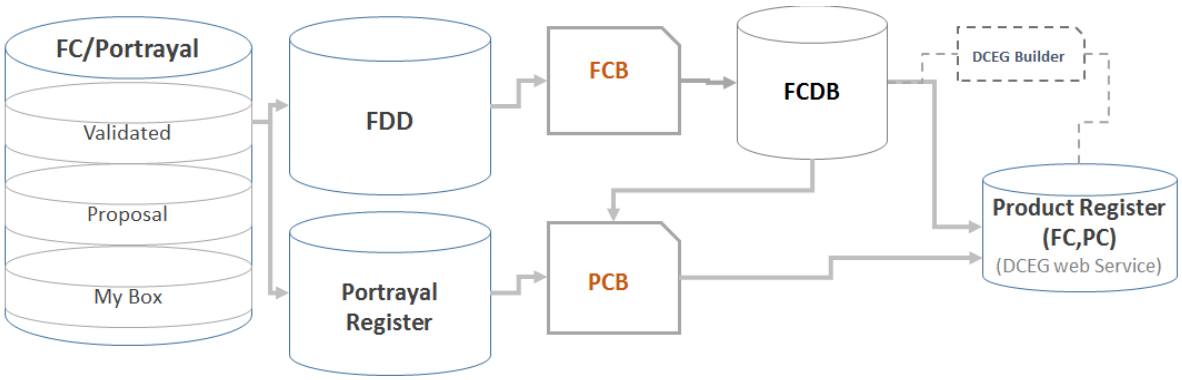

Figure 1. S-100 Infra Flow

However, for a test version of a PS to be created, it was raised that the test catalogue should be developed and tested using the FCB/PCB before making a formal proposal to the Product Register.

A need to establish the S-100 Test Bed Platform and a relevant procedure (see Figure 2) was raised in order to test a PS under development. In other words, the FCB does not build a test FC using the user-defined FDD, save it on the FCDB and have the PCB create a test PC and save it on the Product Register. Instead, the test FC is registered to a separate Test Bed webpage so that it can be openly shared with others participating in the test operation. Furthermore, the result of test running should be registered and shared.

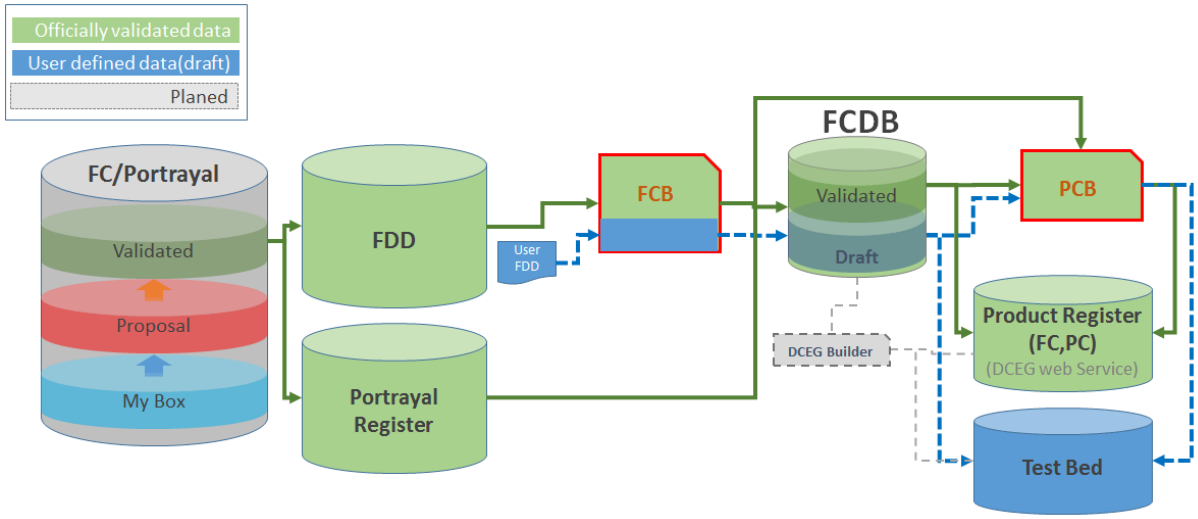

Figure 2. S-100 Test Bed Platform and flow

Conclusions

To provide a flexible mechanism to develop and test PSs and enable smooth interoperability among S-100 based PSs within S-100 ECDIS, a procedure which involves developing and testing and a platform need to be established. This document has reviewed the need to establish such procedure and platform and invites the TSM to discuss a way forward if deemed.

Recommendations

It is recommended to consider the above mentioned experience and proposed to establish S-100 Test Bed Platform for developing and testing PSs according to the following recommendations:

1. Give more flexible function to the FCB to create testing versions.
2. A draft or testing version of FC is able to be stored in the Feature Catalogue DB.

3. Develop a Test Bed page to share all relevant data and information for testing PSs.
4. Develop a guideline for the S-100 Test Bed system.
5. Consider incorporating it into the IHO technical standard update system (M3, 2/2007).

Actions Requested of TSM5

The TSM5 group is invited to:

a. Note this report and discuss the recommendations and provide comments as appropriate.

b. Endorse the test bed platform for further consideration by the S-100 Working Group and other interested working groups.