

Paper for Consideration by S-100WG4

S-100 Exchange Set Model

<b>Submitted by:</b>	Republic of Korea (KHOA)
<b>Executive Summary:</b>	This paper outlines the need for reviewing S-100 Exchange Set Model
<b>Related Documents:</b>	S-100 4.0.0 Part 4
<b>Related Projects:</b>	KHOA S-100 Test Bed Project

**Introduction / Background**

While S-100 has been updated and released as version 4.0.0 in this year, various S-100 based product specifications including S-101 ENC have been developed. According to the revised approval process of S-100 based Product Specifications, if they are approved as version 1.0.0, they will be tested in a variety of ways.

The S-100 Exchange Set model is utilized to distribute S-100 data. However it is invited to discuss if the existing S-100 Exchange Set model could meet every requirement considering the scenario for S-100 data distribution.

**Analysis/Discussion**

Overview of S-100 Exchange Set model

The S-100 Exchange Set is a container that combines all the elements needed for the exchange of S-100 data. The Exchange Set contains S-100 datasets, support files, feature catalogue and portrayal catalogue as shown in Fig. 1.

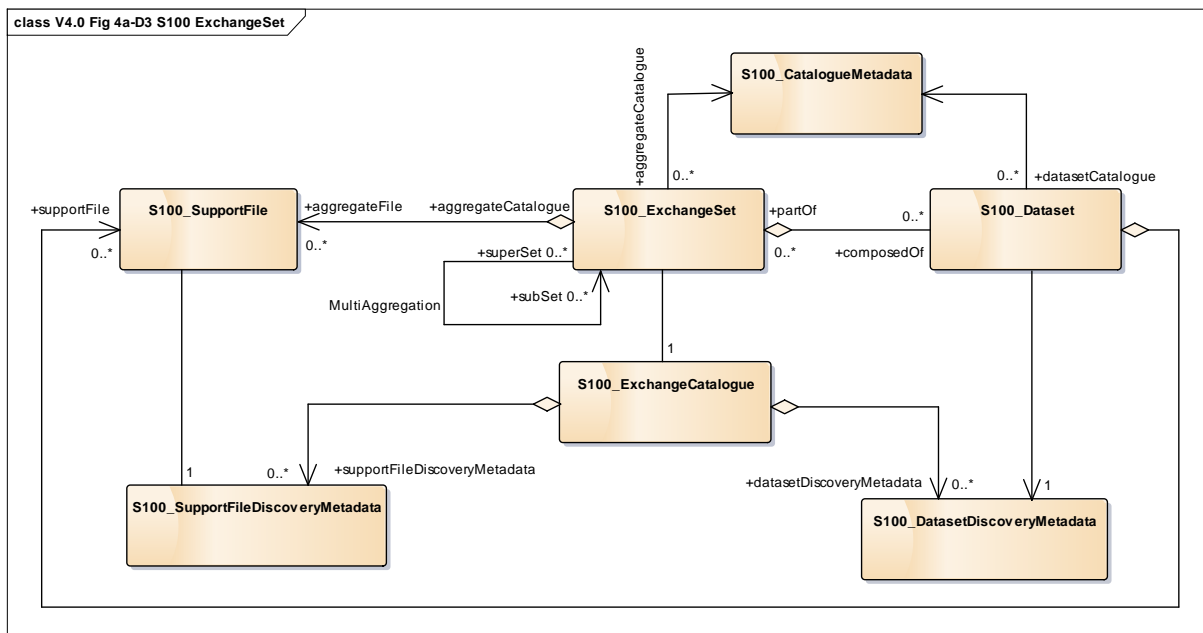


Fig.1 S-100 Exchange Set

The Part 4a – Metadata of S-100 4.0.0 describes the data model of S-100 Exchange Set and includes class and detailed elements of the Exchange Set model.

Use Case of S-100 Exchange Set

The purpose of S-100 Exchange Set is to create a package required for exchanging S-100 datasets, support files and catalogues. The following use case of Exchange Set can be expected from the lessons learned from the distribution of S-57 based ENCs.

- From HO to HO (S-100 data exchange between HOs)
- From HO to IHO/RHC (S-100 data exchange from HO to IHO/RHC)
- From HO to RENC (S-100 data exchange from HO to RENC)
- From HO to Distribution Agent (S-100 data exchange from HO to Distribution Agent)
- From RENC to VAR (S-100 data exchange from RENC to VAR)
- From VAR to Distribution Agent (S-100 data exchange from VAR to Distribution Agent)
- From Distribution Agent to Ship (ECDIS) (S-100 data exchange from Distribution Agent to Ship)
- E-Navigation Service
- Others

Meanwhile, S-100 has several advantages including plug & play concept by catalogue and multiple products in addition to ENC and utilization of various support files compared to S-57. Considering these points, distribution scenario of S-100 data can be expected as below to support the advantages of S-100 using the S-100 Exchange Set data model.

- Distribution of S-100 dataset for a single Product Specification
- Distribution of S-100 dataset for multiple Product Specifications
- Update of S-100 dataset
- Update of support files
- Deletion of S-100 dataset and support file
- New edition of catalogue files such as feature, portrayal and interoperability
- Update of catalogue files such as feature, portrayal and interoperability
- Deletion of catalogue files such as feature, portrayal and interoperability
- Others

It is necessary to investigate the distribution use case of S-100 packages including datasets, support files and catalogues and review if the existing Exchange Set model meets all requirements.

### **Conclusions**

The Exchange Set model of S-100 Ed. 4.0.0 will be used to create S-100 exchange package for datasets, support files and catalogues. It is necessary to review the S-100 Exchange Set model considering predictable distribution scenario of S-100 data.

KHOA plans to investigate the various scenario of S-100 data distribution and conduct a gap analysis on the existing S-100 Exchange Set model. The research results will be reported to the next S-100WG meeting and the revision proposal on the Exchange Set model will be submitted if needed.

### **Recommendations**

Since several S-100 based Product Specifications have reached the completion stage, it is required to check the related parts of S-100 in terms of S-100 data distribution. KHOA recommends reviewing the S-100 Exchange Set model to ensure it meets every requirement for S-100 data distribution.

### **Action Required of S-100WG**

The S-100WG4 is invited to:

- a. **Note** this paper.
- b. **Consider** the task of reviewing S-100 Exchange Set model to be included in the next S-100WG meeting agenda and invite relevant experts if accepted.
- c. **Request** any considerations and/or recommendations for this task if any.