Paper for Consideration by S-100WG3

S-100 Exchange Catalogue Editor

Submitted by:	KHOA/NOAA
Executive Summary:	This paper outlines the development of S-100 Exchange Catalogue Editor
Related Documents:	S-100 , S-10X
Related Projects:	JPA project between KHOA and NOAA, S-100 Test Bed Project

Introduction / Background

KHOA and NOAA have been cooperating on a project to support S-100 test bed. A task of the project 2017-2018 is to develop an Exchange Catalogue Editor which satisfies Exchange Catalogue data model included in S-100 3.0 and use it for S-100 test bed. This document introduces the outcome from developing S-100 Exchange Catalogue Editor conducted by KHOA.

Analysis/Discussion

Overview of S-100 Exchange Set

For information exchange, there are several categories of metadata required: metadata for the overall Exchange Catalogue, metadata for each of the datasets contained in the catalogue, and metadata for support files that make up the package. Part 4a Metadata of S-100 3.0 outlines the overall concept of an S-100 exchange set for the interchange of geospatial data and its relevant metadata.

The discovery metadata classes have numerous attributes which enable important information on the datasets and accompanying support files to be examined without the need to process the data, for example decrypt, decompress, and load. Other catalogues can be included in the exchange set in support of the datasets such as feature, portrayal, coordinate reference systems and codelists. The attribute “purpose” of the support file metadata provides a mechanism to update support files more easily.

The S-100 Exchange set is a container that combines all the elements needed for the exchange of S-100 data. The exchange set may include S-100 based datasets, files, feature catalogues and portrayal catalogues as shown in Fig. 1.

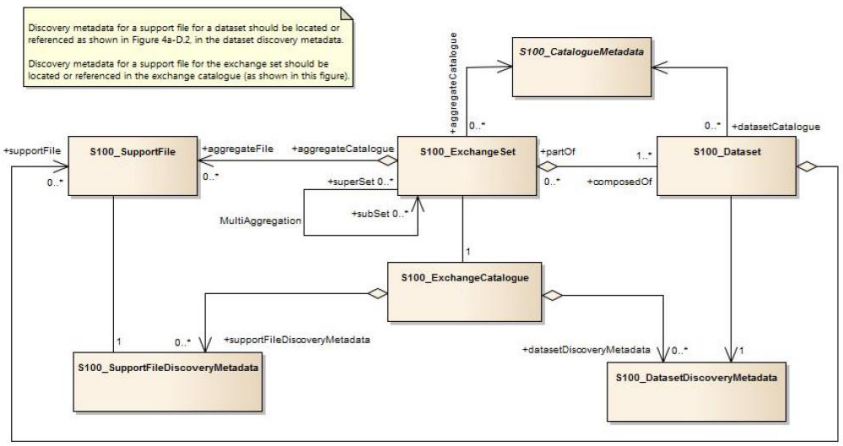

Fig. 1 S-100 Exchange Set

S-100 exchange set includes S-100 dataset, support files and catalogue files and also Exchange Catalogue files in xml format which are metadata files that explain all the components included. The structure of S-100 exchange set is shown in Fig. 2.

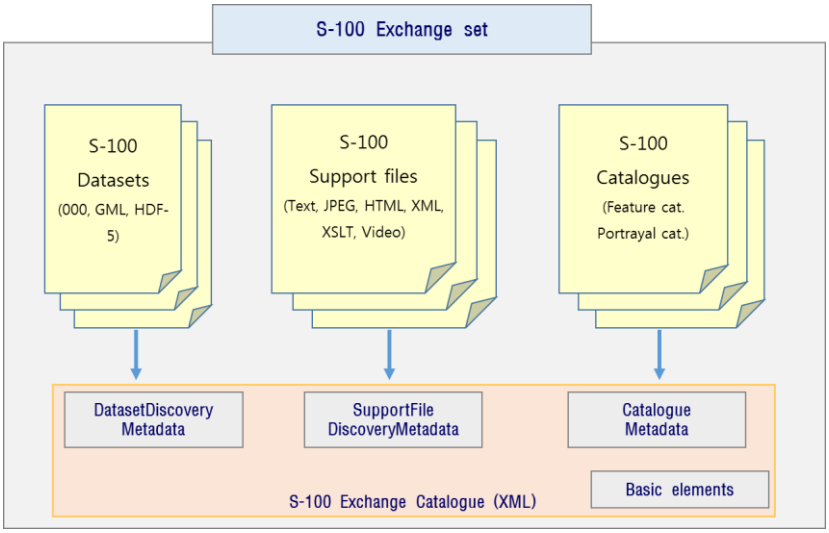

Fig. 2 Structure of S-100 Exchange Set

Considerations for developing S-100 Exchange Set Editor

The objective of S-100 Exchange Set Editor is to select dataset, support file and catalogue to be included in exchange set and develop Exchange Catalogue which explains selected information. The S100_ExchangeCatalogue is an XML instance, which provides information necessary for exploiting all the components of an exchange set. It consists of sections for the catalogues and datasets with subsections for support file metadata and a reference to classic ISO 19115 dataset metadata.

The structure of S-100 Exchange Catalogue XML file is defined in S100_ExchangeCatalogue.xsd, making reference to ISO 19139:2007 Schema Package. When there is change to S100_ExchangeCatalogue Schema, it will have an impact on S-100 Exchange Catalogue Editor so it is necessary to develop the Editor in such a way that changes to S100_ExchangeCatalogue would be applied.

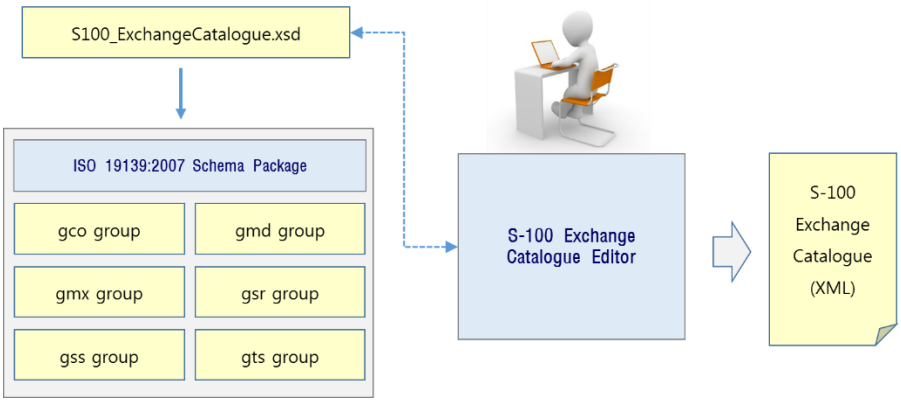

Fig. 3 Concept Chart of S-100 Exchange Set Catalogue Editor

Outcome of the development

KHOA research team developed the prototype of S-100 Exchange Catalogue Editor as shown in Fig. 4. When the Editor is run, it can read and analyze the structure of S100_ExchangeCatalogue.xsd and ISO 19139:2007 Schema Package and write Exchange Catalogue XML files.

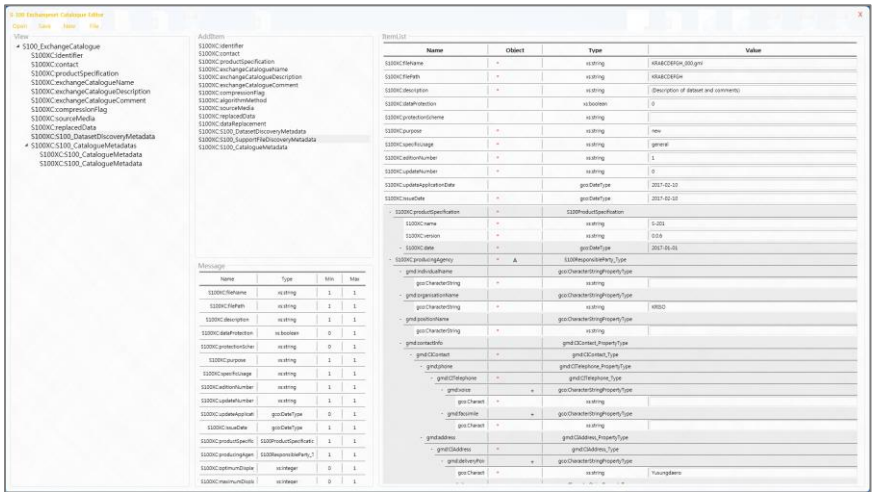

Fig. 4 Outcome of Development of S-100 Exchange Catalogue Editor

The outcome obtained from S-100 Exchange Catalogue Editor can be saved in folders as shown in Fig. 5. When an Exchange Set folder is selected which was saved from the Editor, its content can be loaded and edited.

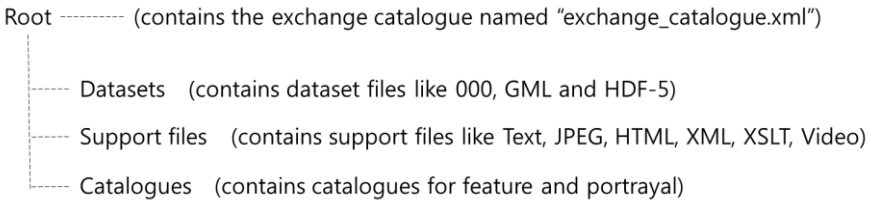

Fig. 5 Structure of S-100 Exchange Set Folders

KHOA research team reviewed the outcome of developing S-100 Exchange Catalogue Editor using the cases from S-101 ENC, S-122 MPA, S-123 MRS, and S-201 AtoN Exchange set.

Conclusions

KHOA and NOAA have been cooperating on a project to support S-100 test bed and the cooperation is to develop S-100 Exchange Catalogue Editor. KHOA research team developed stand-alone S/W which S100_ExchangeCatalogue.xsd and ISO 19139:2007 Schema Package can be loaded and which can create exchange set to include Exchange Catalogue. It is planned to use the Editor for S-100 Test Bed.

Recommendations

It is recommended to review the outcome and considerations from developing S-100 Exchange Catalogue Editor from KHOA and NOAA's joint project and provide recommendations if any.

Action Required of S-100WG

The S-100WG3 is invited to:

a. **Note** this paper
b. **Discuss** recommendations and considerations for the concept and functions of the Editor if any.