

Paper for Consideration by TSMAD29/DIPWG7

Progress on the S-101 Simple Viewer of KHOA

Submitted by:	Republic of Korea (KHOA)
Executive Summary:	This paper reports the progress on the S-101 Simple viewer of KHOA research project.
Related Documents:	S-100, S-101, S-100 Test Framework
Related Projects:	IHO S-100/S-101 Test Bed Project

Introduction / Background

KHOA is promoting a R&D project on S-101 Simple viewer development to cope with S-100 as a hydrographic office and to support S-100/S-101 test bed of IHO. KHOA reported the research results on Off-the-Shelf SVG reader and application results in the development process of S-101 simple viewer in the TSM2 held in Arlington, USA in September of 2014. This paper reports the progress on the S-101 Simple viewer of KHOA.

Analysis/Discussion

Development of off-the-shelf SVG reader

KHOA has developed ENC Viewer based on IHO S-57 3.1 and S-52 PL 3.4 as a user platform for S-57 based ENC services. We will be utilizing ENC Viewer as the baseline to create S-101 Simple Viewer, and S-101 Converted Dataset, Feature Catalogue, Portrayal Catalogue, and SVG Symbol are to be applied to the ENC viewer. KHOA was provided with the point-type SVG Symbols from the Chair of the DIPWG in June of 2014. It then launched research to review the SVG Symbols. As KHOA's ENC Viewer did not contain a software module to enable SVG display, it was needed to develop an SVG Drawing module, and developed software that enable to display and identify individual SVG symbol. We applied the SVG Viewer Module to KHOA ENC Viewer and created a software module which can allow simultaneous comparison between S-52 DAI Symbols and S-101 SVG Symbols. Some technical issued were reported to TSM2.

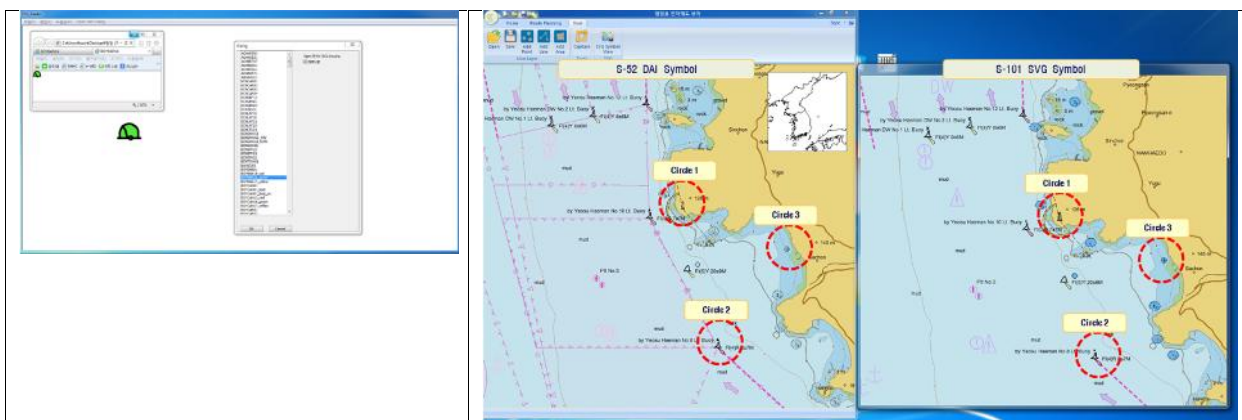


Fig. 1. Development of off-the-shelf SVG reader

Considerations on the changes in the ISO/IEC 8211 Encoding of S-100 ver. 2.0

Some parts in the ISO/IEC 8211 Encoding of S-100 Ver. 2.0 were changed compared to the S-100 Ver. 1.0. Especially, codes filed information in the Data Set General Information Record were added, and each S-101 ENC cell will have individual "Code value management scheme".

- Attribute Codes field
- Information Type Codes field
- Feature Type Codes files
- Information Association Codes field
- Feature Association Codes field
- Association Role codes filed

In addition, as S-101 simple viewer is supposed to manage multiple S-10X products and versions of those products, consideration in terms of software design was required in order to be able to manage them. Fig. 1 indicates a conceptual design on code value management system in an individual S-101 ENC cell and product/version management on S-10X feature catalogues. The design will be reviewed and revised in the development process of S-101 Simple viewer.

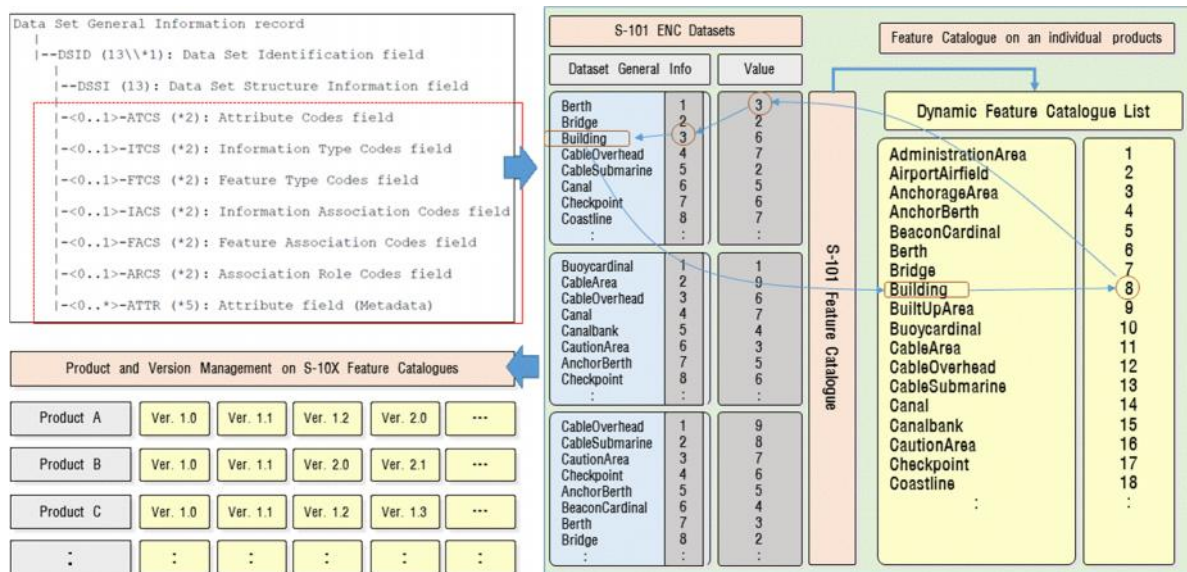


Fig. 1. Concept of Product and Version Management on S-10X Feature Catalogues

Review of the draft version of S-101 Portrayal catalogue

Since the TSM2, KHOA was provided the draft version of S-101 Portrayal Catalogue and then KHOA reviewed it and the part 9 of S-100 ver. 2.0 to develop portrayal parts in the S-101 simple viewer. S-101 portrayal catalogue consists of several folders with portrayal catalogue XML file in the root folder like below. More details on S-101 Portrayal Catalogue appear as the Part 9 of S-100 Ver. 2.0.

- AreaFills
- ColorProfiles
- Fonts
- LineStyles
- Pixmaps
- Rules
- Symbols

KHOA decided to adopt the Rules and Point typed symbols of S-101 Portrayal catalogue in current stage. 162 rules as XML format and 533 point typed symbols as SVG format were used to develop S-101 simple viewer of current stage.

Process of Single ENC in the S-101 Simple Viewer

KHOA developed a draft version of S-101 simple viewer, which can load and present single S-101 ENC, using available data in current stage.

- S-101 Converter 0.8.5
- S-101 Converted ENC data set (S-101 Feature Catalogue 0.8.5)
- S-101 Feature Catalogue 0.8.5
- S-101 Portrayal Catalogue (Rules, Point typed SVG Symbol)

The 0.8.8 version of S-101 Feature catalogue is expected to be revised after additional discussion in the TSMAD/S-100WG, and the S-101 converter and S-100 Portrayal catalogue are also expected to be changed in the future. KHOA will apply and test the relevant data consistently in the development process of the S-101 simple viewer.

Example of GML Encoding

In the discussion of S-100/S-101 Test framework of TSM2, the phase 3 – S-101 viewer was subdivided like below;

- ISO/IEC 8211
- GML
- HDF-5

ROK and Jeppesen agreed to cooperate with research project on S-100 based MSI (Maritime Safety Information) and drafted a MSI data model. In the cooperation project, GML schema and sample datasets on MSI were developed considering S-100 ver. 2.0. Two sea tests were implemented in the ferry route of ROK's coast to test the research result of MSI data model. In the sea tests, S-57 ENCs were used as the base map and MSI were encoded as S-100 based GML. Lessons learned from the sea tests on MSI will be used to develop functions on GML encoding in the S-101 simple viewer.

Action Required of TSMAD TSM

The TSMAD29/DIPWG7 is invited to:

- a. note the progress reported in this paper.
- b. provide recommendations that may be helpful to develop the S-101 Simple Viewer.