

Paper for Consideration by TSMAD27

S-57 UOC Software of KHOA

Submitted by:	Rep. of Korea
Executive Summary:	KHOA has developed a software program that refers to the S-57 UOC and IHO standard that can be used as a reference for both the production and training of ENC.
Related Documents:	S-57 Appendix B.1, Annex A UOC, S-101 DCEG, S-4, INT1
Related Projects:	S-57 Maintenance, S-101 DCEG Project

Introduction / Background

1. When producing ENCs, the Object Catalogue, Attribute Catalogue, and the “Use of Object Catalogue” (UOC) are key IHO S-57 documents that should be referred to when creating ENC objects. This process is greatly facilitated by the S-57 Object Catalogue websites of *SevenCS* and *CARIS*.
2. However, there other standards including S-4, S-57, S-58, and S-56 that should also be referred to and cross-referenced. For this reason, there would be benefit in developing a new integrated solution that help easily search and refer to these and other documents.

Development of S-57 UOC Software

3. Focusing on S-57 UOC which is the most used as a reference document, KHOA has developed a new integrated program that combines both document and information about producing ENC.

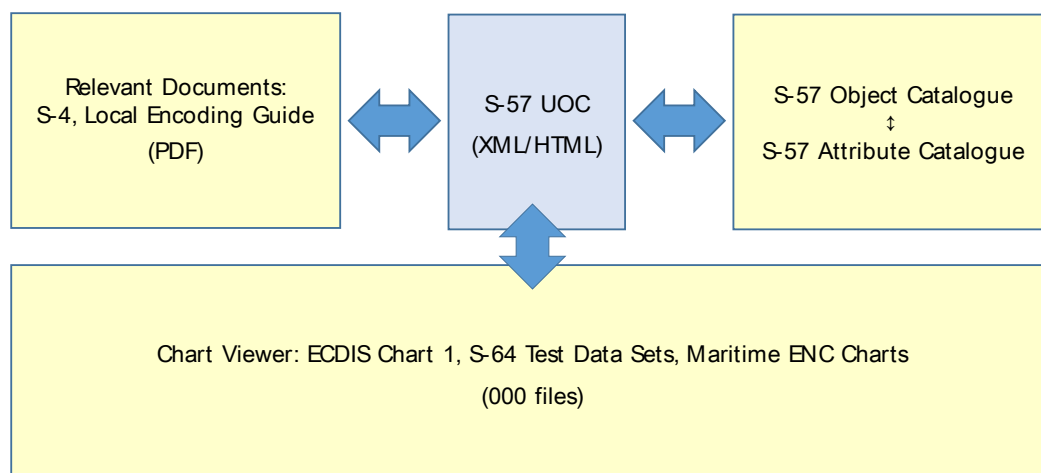


Figure 1 – Structure of S-57 UOC Software

- **S-57 UOC Contents:** The structure of contents was developed in XML file. The content information of UOC consists of HTML with consideration for the type of font and the shape of UOC Contents.
- **Relevant Documents:** This software includes the ability to link the S-4 document and KHOA’s national encoding guide.
- **S-57 Object/Attribute Catalogue:** By clicking Acronym of each Object which is included in the content of S-57 UOC, it is possible to identify the detailed contents of Object and Attribute.
- **Chart Viewer:** Paper Chart/ENC Symbol is checked through a Chart Viewer to identify the appropriate symbol of each object that is included in S-57 UOC.

- KHOA has also established a Table of Contents for the S-57 UOC. Constructed and written in XML, it includes the content as an HTML page that is based on the previous description. The software functions as a data link between UOC and S-4. When clicking on Acronym of specific Object, it is possible to identify Object/Attribute Catalogue, and provides the ability to check the Paper/ENC Symbol for ENC.

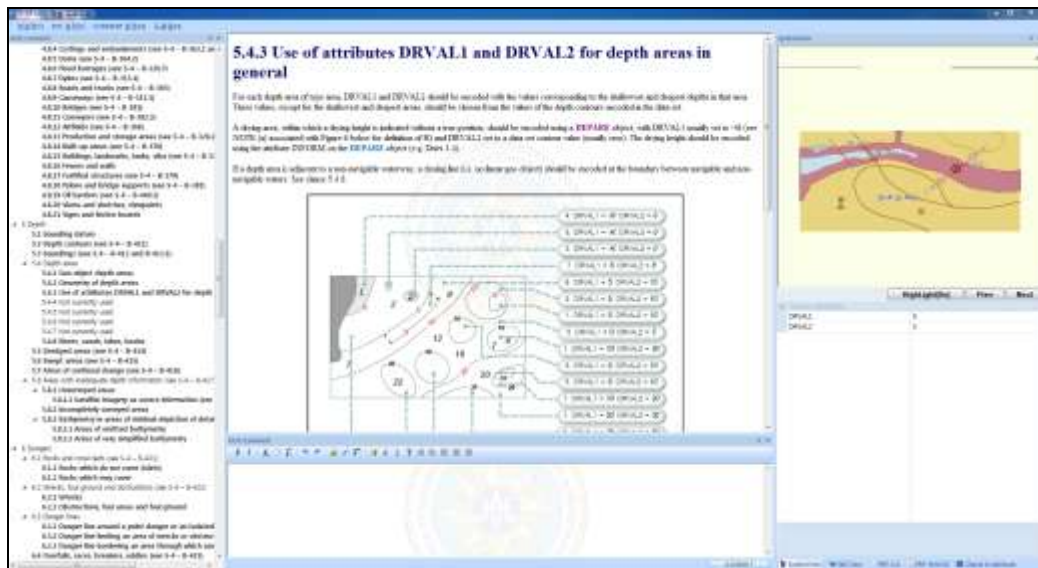


Figure 2 – S-57 UOC software including Symbol Chart

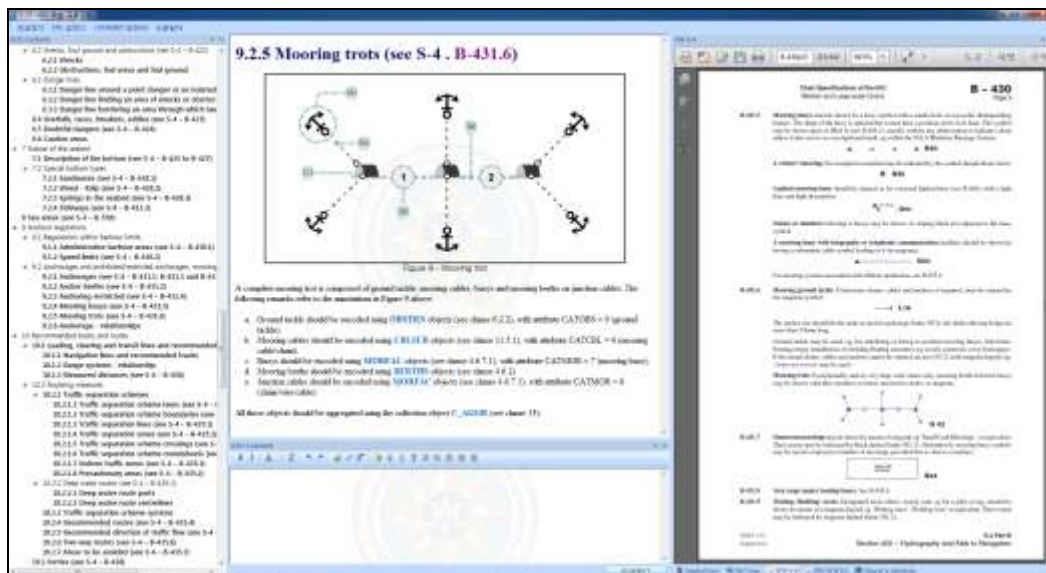


Figure 3 – S-57 UOC software including S-4 document

Analysis/Discussion

- TSMAD WG has recently updated S-57 UOC to Edition 4.0.0. It is important that recent improvements are recognized as necessary requirements for producing consistent ENCs. In terms of awareness about the UOC, there is significant benefit in integrating the relevant documents such as S-57 UOC, Object/Attribute Catalogue, S-4, and symbol cases.
- KHOA developed the S-57 UOC Software to support the production of ENC. KHOA will use this software not only for the production of ENC, but also for ENC training. This software will be made available to IHO MS and other ENC producers through the KHOA website.
- KHOA plans to improve and stabilize the S-57 UOC software on a continuous basis. This should also assist in the development of S-101 DCEG software when TSMAD completes the development of the S-101 DCEG.

Justification and Impacts

8. Use of the S-57 UOC software developed by KHOA will assist in the production of more consistent and uniform ENC's. The software is beneficial when used to both produce and train personnel on ENC production.

Action Required of TSMADWG

9. The TSMAD is invited to:
 - a. **Note** the benefit of S-57 UOC software developed by KHOA as a useful reference tool that assists in the process and training for ENC production.
 - b. **Agree** to maintain KHOA S-57 UOC software in terms of both awareness and continual improvement of the S-57 UOC.
 - c. **Inform** KHOA what further enhancements could be software that may be required to meet the needs of other ENC producers.
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