Paper for Consideration by TSMAD

Proposals for a new Supplement for S-57

Submitted by:	UK
Executive Summary:	This paper proposes an amendment to the S-57 ENC product specification which would be delivered through an S-57 supplement. This reflects the need to establish a minimum check standard for ENC data and reflects the revision of S-58 as instructed by HSSC3.
Related Documents:	a) S-57 ENC Product Specification b) S-58 Recommended ENC Validation
Related Projects:	1. S-58 5.0.0

Introduction / Background

1. A submission to HSSC3 by the UK resulted in the following outcomes;

The Committee noted the two papers and the presentation.
- The Committee accepted, in principle that a minimum validation check standard for ENC should be established using the "error" category in S-58.
- The Committee agreed to restructure the S-58 standard into: ▪ errors which must be corrected in all ENCs; ▪ "warnings" that require cartographic interpretation for a satisfactory solution; and ▪ tests to be performed prior to data import in ECDIS.

- The Committee agreed that TSMAD investigate and propose how a minimum validation check standard can be achieved across all ENC providers, including the development of a use-case dataset.
- The Committee agreed that TSMAD develop, in consultation with stakeholders, a migration path, guidance and appropriate tools for establishing a minimum validation check standard.

Work is currently underway through TSMAD to revise S-58 to enhance its usability, improve the consistency of validation software and provide a check classification which identifies the most significant checks. This will address the first two bullets above. However in order for ENC data to conform to the revised S-58 a mechanism for and transition to a minimum check standard is required (final bullet). This paper proposes changes to the S-57 ENC product specification and S-58 which will enable a minimum check standard to be achieved. It also suggests first steps in beginning the transition to achieving a minimum ENC check standard.

Analysis/Discussion

2. The following changes are proposed;

1) Appendix B 1 ENC Product Specification

Insert at section 3;

"IHO standard S-58 contains validation checks to be used to verify that an ENC meets the requirements laid out in this specification and those specified in S-57 Appendix B.1, Annex A - Use of the Object Catalogue for ENC – UOC.

ENC cells must meet the minimum validation requirements defined in S-58 in order to conform to this product specification."

Within supplement 2 the following changes should also be considered;

At 2.8 and 3.5 update CSMWG to DIPWG.

4. Para 3 consider if this issue requirement applies UOC 3.1.0, 1.1 Note states this is not required. (3.5.7, 5 10.5.1, 5 10.5.2 and 16 New Object same comment applies.)

For reasons of backward compatibility with Edition 3.1, the new feature object classes which appear in S-57 3.1.1 which are listed above, must have their meaning described in at least one of the attributes INFORM or TXTDSC. For consistency, when one or both of these attributes is used, the text must commence with the approved object class name of the feature, such as „Archipelagic Sea Lane ".

5. Section 5 of the supplement relates to S-57 Appendix 1 Annexe A Use of the Object Catalogue for ENC. The UOC has been unfrozen (edition 3.0.0 Oct 2011) and now incorporates the content currently in supplement 2 section 5. Therefore the UK proposes that section 5 of the supplement be removed entirely with an appropriate explanation included for clarity.

2) S-58 Recommended ENC Validation Checks

In S-58 5.0.0 amend the title to 'ENC Validation Checks'.

Consequently S-58 5.0.0 will specify that although strongly recommended an ENC should not contain any items which generate Critical Errors. In due course this can be amended to a must when it is practical that all ENC producers can meet this minimum standard for newly published data.

3. In order to transition to achieving the minimum check standard the publication of S-58 5.0.0 is the first step. It will take time to reflect the standard in production software and for this software to be in use with ENC producers. In order to ensure that production software correctly reflects the standards the IHO could consider accreditation of validation tools using the proposed S-58 5.0.0 test dataset. This would avoid the need for various users to test new software and ensure that it is consistent. This might follow models such as those used by the OGC Compliance program where a manufacturer provides evidence for review. This should avoid each HO/RENC testing the tools themselves.

4. With accredited validation software in use TSMAD could issue a circular letter asking all ENC producers whether they can meet the S-58 critical errors and if not asking when they would be able to. This circular letter could be issued one year after the publication of S-58 5.0.0 and annually until all ENC producers can meet the requirement. Then a revision of S-58 can amend the 'should' requirement to a 'must'.

Conclusion

5. This paper presents changes which will support the implementation of a minimum check standard for ENC as approved in principle by HSSC3. It provides a framework within the standards through which TSMAD can transition all ENC producers to meet this check standard enabled by the revised S-58 5.0.0. In the context of the ECDIS anomalies and with S-101 and e-Navigation in mind these changes will assist in achieving consistent ENC data as a trusted base layer for navigation.

Action Required of TSMAD

- To prepare a supplement to S-57 for submission to HSSC 5 reflecting the proposed addition to S-57 Appendix B 1 ENC Product Specification

- Amend the title of S-58 in edition 5.0.0 to remove ‘Recommended’

- Explore through the IHB the development of an accreditation service for ENC validation software using the proposed S-58 5.0.0 test datasets

- Consider implementing the proposed approach to achieving the minimum check standard described at paragraph 4 of this paper