Paper for Consideration by TSMAD

Proposals to amend the UOC

Submitted by:	UK
Executive Summary:	This paper presents some specific changes to the UOC for consideration by TSMAD. These are consistent with the TSMAD approach to ensure the UOC provides consistent, accurate and complete guidance for the encoding of S-57 ENC.
Related Documents:	a) S-57 UOC 3.1.0
Related Projects:	1. N/A

Introduction / Background

1. In 2011 TSMAD reopened the UOC and encoding guidance can now be more quickly reflected in this document which should form the primary guidance for the encoding of S-57 ENCs. This paper highlights some specific instances where the UOC 3.1.0 could be improved and made more clear.

Analysis/Discussion

2. Guidance on M_COVR changes within updates

The UOC 3.1.0 contains the following guidance;

2.6 Updating
*An ENC Update will be rejected by the ECDIS if it is located outside the area of data coverage for the cell (i.e. area covered by the meta object **M_COVR** with attribute CATCOV = 1 (coverage available)) or if it changes the extent of this area. Where the area of data coverage for a base ENC cell is to be changed, this should be done by issuing a New Edition*

However whilst extant encoding bulletin 31 (as shown below) included a must rather than a should with regard to changes to M_COVR by ENC update.

EB 31

Encoders are therefore advised that an ENC update (ER application profile) data set must not change the limit of data coverage for the base ENC cell, as the update may be rejected by the ECDIS. Where the limit of data coverage for a base ENC cell is to be changed, this should be done by issuing a new edition of the cell.

- The UK therefore proposes that the UOC is amended to read must instead of should at 2.6.

Further the guidance at 2.8.1 remains a 'should' regarding leaving holes in data coverage. TSMAD may wish to consider strengthening this guidance to a must.

2.8.1 Wide blank areas
Areas of a data set which contain no data must be covered using the meta object **M_COVR**, with attribute CATCOV = *2* (no coverage available). Note that ENC cells must be completely covered by **M_COVR** objects. The areas that contain data must be covered by **M_COVR** with CATCOV = *1* (coverage available). The spatial extent of the **M_COVR** objects comprising an ENC data set should be restricted to the spatial extent of the minimum bounding rectangle formed by the area of the cell covered by data (**M_COVR** with CATCOV = *1* (coverage

available)). Producing Authorities should not leave “holes” (i.e. areas covered by **M_COVR** with attribute CATCOV = *2* (no coverage available)) in smaller scale

- The UK proposes that the UOC is amended to read must instead of should at 2.8.1

3. Guidance on the encoding of underlying base display objects

Section 11.7.4 of the UOC includes the following text;

Where a **LNDMRK** is encoded, an ECDIS Base Display object (e.g. **PILPNT**, **LNDARE**) must also be encoded coincident to ensure the feature is always displayed on the ECDIS.

This relates to offshore wind turbines and reflects S-58 check 54 which gives a warning where certain objects are not encoded on ECDIS base display objects. As S-58 includes check 54 it is suggested that the UOC should include guidance for objects such as LNDMRK to reflect this.

- The UK proposes that guidance should be added to the UOC for the appropriate objects to reflect S-58 check 54 and to be consistent with the text included at section 11.7.4.

4. Horizontal datum shift parameters

M_HOPA (Horizontal datum shift parameters) is an allowable S-57 ENC object.

Definition

An area within which a uniform shift exists between a specific geodetic datum and the datum of the data within this area.

TSMAD approved its removal for the S-101 ENC PS as it is not deemed required. TSMAD was not aware of any ENC producers which use M_HOPA and found no use case for its retention.

TSMAD standards contain the following text relating to M_HOPA;

S-57 ENC Product Specification

4.1 Horizontal datum

The horizontal datum must be WGS 84. Therefore, the Horizontal Geodetic Datum [HDAT] subfield in the Data Set Parameter@ [DSPM] field must have the value of {2}.

The mariner may have to display information other than ENC data and ENC updates. In cases where this information is based on a horizontal datum other than WGS 84, it can be converted to WGS 84 by means of the meta object Horizontal datum shift parameter (M_HOPA).

S-57 ENC UOC 3.0.0

2.1.1 Horizontal datum
The horizontal datum must be unique in a data set and must be WGS 84. It must be encoded in the “Horizontal Geodetic Datum” [HDAT] subfield of the “Data Set Parameter” [DSPM] field.
The use of the meta object **M_HDAT** is prohibited. The use of the attribute HORDAT on any spatial object is prohibited. The meta object **M_HOPA** may be used to provide the shift from another horizontal datum to WGS 84 (see S-57 Appendix B.1 – ENC Product Specification clause 4.1).

Meta object: Horizontal datum (**M_HOPA**) (A)

Attributes: HORDAT - contains the original horizontal datum of the data.
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From the wording in the ENC PS and UOC it is clear that the guidance on M_HOPA should be made more clear. Only when read together does it become clear that the shift onto WGS-84 is provided to allow information other than ENC data and ENC updates to be input by the mariner. It could be misinterpreted that ECDIS systems will use the ship parameters of M_HOPA to shift ENC data into the WGS-84 position. Its use is for information other than ENC such as local notices to mariners which may be on another datum. A user can access M_HOPA and apply the appropriate shift before inputting the data using a manual update or a mariner's object. It is suggested that in reality users would not use this approach and currently most information is on WGS-84 or a compatible datum.

- TSMAD should consider improving the guidance on M_HOPA for clarity and may also wish to consider issuing an encoding bulletin to clarify and strongly recommend against the use of M_HOPA.

Conclusion

5. This paper presents a number of items where the UOC can be improved and TSMAD should consider the action required. This is by no means the result of an exhaustive analysis so TSMAD members should be encouraged to put forward any areas where they consider that the UOC could be improved.

Action Required of TSMAD

- To consider the proposals contained in this paper for action in the UOC

- To request further input from TSMAD members in order to make the UOC as clear and comprehensive as possible