

**COMBINED 22<sup>nd</sup> TSMAD AND 3<sup>rd</sup> DIPWG MEETING  
11-15 April 2011. Seoul, Korea****Paper for Consideration by TSMAD****Report to TSMAD22/DIPWG3 – Progress on Review of S-57 Appendix B.1, Annex A –  
Use of the Object Catalogue for ENC**

<b>Submitted by:</b>	Australia
<b>Executive Summary:</b>	Report on progress made on the review of the Use of the Object Catalogue for ENC (UOC) since TSMAD21.
<b>Related Documents:</b>	S-57 Supplement No. 2; S-58; S-65; S-4; INT1; ENC Encoding Bulletins and FAQs; S-57 MD8; HSSC2 Minutes; TSMAD21 Minutes.
<b>Related Projects:</b>	S-101 Development, S-57 Maintenance; S-58 Maintenance

**Introduction / Background**

S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC (UOC) has been “frozen” since Edition 2.1 was published in April 2002. Since that time, the only effective method of recording and promulgating new or improved ENC encoding guidance has been through the mechanisms of ENC FAQs and Encoding Bulletins, and incorporation in other IHO publications such as S-58 and S-65 or inclusion in S-57 Supplements. This has resulted in ENC encoders having to reference numerous sources in order to obtain the most up-to-date guidance for encoding conformant, consistent ENCs. At TSMAD20 (May 2010) it was suggested that the UOC be “unfrozen” in order to incorporate all other ENC encoding guidance published since April 2002 in the document. At HSSC2 (October 2010) it was agreed that the UOC should be “unfrozen”, thus allowing a review of the document to be added to the TSMAD Work Program. At TSMAD21 (December 2010) Australia agreed to take the lead in the review, with the S-57 maintenance Sub-Working Group to be reviewers of the amended document. This report outlines the process undertaken so far, and provides a list of discussion items to be addressed at TSMAD22.

**Analysis / Discussion**

The MS Word version of the UOC Edition 2.1 that was submitted to the IHB for publication in April 2002 has been used as the base document on which the review has been based. The basic Terms of Reference for the review as determined at TSMAD21 and further discussed during the initial review of the document are as follows:

- Guidance from any IHO document that has supplementary or enhanced encoding guidance to that contained in Edition 2.1 of the UOC is to be considered for inclusion in the reviewed UOC (Edition 3.0).
- Any new guidance in the document must not force ENC Producing Authorities to apply any changes to existing ENC datasets retrospectively. Additionally, changes must not contradict information published in other S-57 documentation (with the exception of Clarifications to S-57 included in MD8), and must not cause a subsequent issue to the use of the data in ECDIS.
- New proposals considered to be extensions to the existing guidance will not be considered, unless submitted to TSMAD and approved for inclusion through the normal TSMAD processes.

The Draft UOC 3.0 now combines the relevant guidance from published ENC FAQs and Encoding Bulletins; S-57 Supplement No. 2; S-65; and S-57 MD8 (Clarifications only, considered relevant to encoders), in accordance with the above Terms of Reference. Additionally, S-4, INT1 and S-58 have also been consulted where considered necessary to ensure consistency.

Procedure: The following is a summary of the procedure followed to produce the draft of the UOC 3.0:

- A copy of Edition 2.1 of the UOC in MS Word format obtained as the template for the new draft. All changes from Edition 2.1 in the draft have been indicated in colour and categorised as follows:
  - **Green** text has been taken from other published IHO documents including ENC Encoding Bulletins and FAQs; S-57 MD8 (Clarifications only); S-57 Supplement No. 2; S-65; S-58 (not too much from here). The original wording from the relevant document has been retained as much as possible, but it has been necessary to make some grammatical amendments to "UOCify" the wording without changing the meaning of the original text.
  - **Blue** text indicates changes made to correct syntax (e.g. changing M4 to S-4) and correct formatting and spelling errors in the document. Blue text has also been used to indicate changes that better standardise the document, e.g. guidance that applies to more than one clause but has only been included in one clause.
  - **Red** text is new text that has been derived from a number of sources. First, it has been used for outstanding EB and FAQ action from previous TSMAD meetings which will need to be discussed by the S-57 Maintenance Sub-WG for approval and possible inclusion in new EBs and FAQs. Second, it has been used where S-4 and INT1 references have been reviewed and amended if they are considered to be incorrect in Edition 2.1. Third, it has been used for new guidance that has been discussed and agreed at previous meetings (e.g. hierarchical encoding of C\_AGGR for traffic routing schemes as discussed at TSMAD21). Finally, it has been used for new text that may be required in the document, such as a Maintenance clause (for maintenance of the document), additional text to support guidance derived from other IHO documents, and a suggested amendment to the Alphabetical Index at the end of the document to reference clause numbers instead of page numbers.
  - ~~Grey double strike through~~ text indicates UOC Edition 2.1 text suggested for deletion (and some new text recommended for deletion by reviewers).
- First pass of the document to update/correct syntax, spelling and formatting (**blue text**) and check and amend, where required, S-4 cross references (**red text**).
- Add ENC Encoding Bulletins and FAQs, and the UOC section of S-57 Supplement No. 2 (**green text**).
- Evaluate S-57 MD8 Clarifications and add those Clarifications considered relevant to ENC encoders (**green text**).
- Evaluate S-65 and add guidance considered relevant to ENC encoders. In particular, Annex A (Recommendations for Consistent ENC Data Encoding) and Appendix 1 (Specific SCAMIN Step Values for Object and Attribute Combinations) (**green text**).
- Check impact of review of S-4 currently being conducted by CSPCWG for possible impacts on the UOC and amend as required (**red text**). (This task has only been partially completed as at TSMAD22).
- Check impact of EUWG review of S-52 Appendix 1 (Guidance on Updating the ENC) for possible impacts on the UOC and amend as required. (This task has only been partially completed as at TSMAD22 and correspondence with EUWG Chair and Vice-Chair is on-going).
- Check INT1 cross-references throughout the document against the latest published IHO English version of INT1 (7<sup>th</sup> Edition published by BSH January 2011) and correct as required (**red text**).
- First draft of the document circulated to the ENC Maintenance Sub-Working Group for review and comment (February 2011).
- Review comments evaluated and applied to the draft (March 2011). Issues raised and considered to require further discussion compiled into Table for submission to TSMAD (Annex A).
- Proof read draft, correct formatting as required and prepare final draft for submission to TSMAD22.

Where possible, comments have been included in the draft document providing the source for the amendment, or issues for further discussion.

The following steps are considered necessary in order to complete the review and prepare the final revised UOC for publication:

- Discuss and resolve issues raised as part of the S-57 maintenance Sub-Working Group review of the document (refer Annex A to this paper). One of the main issues to be resolved is clause 5.4 and references to encoding linear depth areas, which may require a complete re-draft of this clause and its sub-clauses.
- Complete the evaluation of the review of S-4 currently being conducted by CSPCWG for possible impacts on the UOC and amend as required.
- Amend document in line with any recommendations from EUWG regarding ENC Updating.
- Evaluate all Figures in the document for suitability and replace as required. It is important to note that the Figures in the current document cannot be amended as they are in an old format that is no longer used (AU does not have any software capable of modifying the diagrams).
- Determine format and finalise the Alphabetical Index at the end of the document (if it is considered that such an Index is required).
- Final review and approval of TSMAD(?)
- Discuss possible courses of action for other IHO documents/publications as a result of the publication of the reviewed UOC. These include ENC FAQs and EBs; S-65; and other S-57 documents (in terms of issues such as changed S-4 and INT1 references)

### **Recommendations**

1. That TSMAD endorse the content of the draft document in relation to the stated Terms of Reference for the review.
2. That TSMAD discuss the review comments and issues raised as contained in Annex A to this Report.
3. That TSMAD determine a way ahead in regard to the steps considered necessary in order to complete the review and prepare the final revised UOC for publication as listed above.

### **Justification and Impacts**

Complete and concise review of the document is considered important to ensure that production systems, encoders and OEMs are provided with all the guidance, in a single document, required for the encoding of compliant and consistent data for S-57 ENCs.

### **Action required of TSMAD**

TSMAD is invited to:

- a. Endorse this report;
- b. Discuss and advise as appropriate in regard to the Recommendations above.

Attachments:

Annex A: TSMAD22: UOC Review Comments and Actions/Proposals for Further Discussion.

TSMAD22/DIPG3-10.1A.Att1 – S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC (Draft Edition 3.0 March 2011)

**TSMAD22**  
**UOC REVIEW COMMENTS AND ACTIONS/PROPOSALS FOR FURTHER DISCUSSION**

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
General	UKHO	What is the impact of this [adding information from other IHO publications/fora in the UOC] on S-65/EB's etc. Will S-65 require a NE? will the EBs expire in due course? Time-frame?	<b>Requires TSMAD discussion.</b> AU opinion is that FAQs and EBs be amended to a reference to the relevant Edition No. and clause(s) of the UOC (so that FAQ and EB No's are not re-used). S-65 should be reviewed for NE as a result of publication of the reviewed UOC.
General	UKHO	I know it would be a fair bit of extra work but in order to make the UOC more of a one stop reference might we consider including the permitted geometries next to each object? As we have done in the S-101 Data Classification and Encoding Guide this would align the documents and ease the transition for compilers.	Permitted geometries included February 2011. Format example included at clause 1.2 and added adjacent to each geo object name in the document.
General	SHOM	An encoding bulletin normally gives the background in order to explain to encoders the reason of the new rule. However in UOC, for consistency with former clauses, we should be more concise and only keep a clear rule without too much explanation. So, along this document, I think you should remove extra wordings which cause interference on the useful messages. Maybe, for inquiring mind, we could keep a cross-reference to the removed EB.	I agree. I have tried to do this, but further changes may be necessary. <b>For TSMAD review and comment.</b>
1.1	UKHO	S-58 New Object INFORM check 562 generates an error. Could leave as is and downgrade to warning at next NE of S-58?	<b>NEWOBJ</b> requires at least one of INFORM or TXTDSC to be populated to describe the object, as stated in clause 16, Remarks 3 <sup>rd</sup> bullet point. These attributes are shown as mandatory, therefore are not subject to the Note in clause 1.1.
1.1	TSMAD Chair	May need tweaking, but I told HSSC that this would be in there. [Statement specifying no requirement for existing data to be changed retrospectively, or no issues caused with using the data in ECDIS].	Inserted. <b>TSMAD to review.</b>
1.3	UKHO	Does this need to be clarified to make clear the 'unwritten rules' of the UOC. Specifying that mandatory guidance only applies to new encoding and that existing data does not to be reworked?	No new/amended guidance in the document is mandated, unless done so in Supplement No. 2, therefore it is considered that no additional statement is required.

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
1.4	AUHO	New maintenance clause added.	Will need to be reviewed and approved at TSMAD22. Clause updated February 2011 to conform to similar clauses in S-101.
1.4	TSMAD Chair	I think we need to stick to the principles applied in the past. Versions increment by 0.n unless we classify it as a major review in which case n.0.	Clause 1.4.4 and associated clauses amended accordingly. TSMAD to review.
2.1.5.1	SHOM	Could you explain what “are not available” means. (...available in the production workflow. ? ). [2 <sup>nd</sup> paragraph (NOTE)].	Have added “in the ENC production software”. (Whole document).
2.1.5.1	SHOM	Useless in an encoding guide. [3 <sup>rd</sup> paragraph relating to IEC 61174].	Paragraph removed.
2.1.5.1	TSMAD Chair	We have to make up our mind here. The current P.L. includes the portrayal objects defined by temporal attribution. The only problem is that legacy systems using old P.L's would have a problem. Should that be our concern? If it is then the only choice is to double encode.	TSMAD and DIPWG have been operating on the IMO instruction that all ECDIS at sea should be updated to Edition 3.4 of the P.L. by 01 January 2009, and this assumption has been applied in developing all subsequent EBs and FAQs. This statement is for ENC production software that has not been upgraded to S-57 Supplement No. 2 (see SHOM comment above).
2.1.8.1	SHOM	I think this second paragraph is not useful in this document. The reason of this new rule (object split by the cell structure) is repeated three times in the clause. [2 <sup>nd</sup> paragraph relating to GIS databases].	Paragraph removed.
2.1.8.3	AUHO	A new Figure has been inserted in this clause. It has been temporarily assigned the Figure no. 0.1, in order that existing Figure numbers are not changed. If this is labeled Figure 1, then all other Figures in the document will change numbers. Is this allowable?	Needs to be discussed at TSMAD22.
2.1.8.3	SHOM	General comment - Is that the correct rule to add clarifications relating to the Product Specifications (or to the object catalogue) to UOC?	Such clarifications (as already approved by TSMAD as clarifications to the standard and included in MD8) have been inserted in order to provide such clarifications to the compiler. It has been stated repeatedly that compilers do not refer to MD8 when seeking guidance; therefore it has been considered appropriate to include such clarification in the UOC. Does TSMASD agree?

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
2.1.8.3	TSMAD Chair	This is a borderline case. Normally we should not be using the UOC to correct other S-57 documents. In this case an encoder can influence how the data is captured to follow this advice.	Associated with SHO comment above. <b>Discuss at TSMAD22.</b>
2.2.5	TSMAD Chair	It was not intended to use information from the main body of S-65 just the annexes containing updating and consistency advice. Anyone setting up an ENC production system should still refer to S-65 for this type of information.	Clause heading 2.2.5 cannot be deleted as it is the main heading related to subsequent clauses 2.2.5.1 and 2.2.5.2, which are in the current UOC. Agree this paragraph is not actually encoding guidance, but is a bit of an introductory blurb for the following clauses. <b>Happy to remove if TSMAD agrees.</b>
2.2.7.1	AUHO	New clause for sample SCAMIN policy. This could alternatively be an annex or appendix (?) to the UOC.	<b>Discuss at TSMAD22.</b> AU preference would be to leave where it is – would be messy having an annex (or appendix) to an annex to an appendix.
2.3	TSMAD Chair	So it's O.K. to have more than 300 if you are using NINFOM?	NINFOM added to new sentence.
2.5	UKHO	Indications not alarms could leave it as alarms.	No action taken – <b>discuss with Tom at TSMAD22.</b>
2.5	SHOM	Does the <b>M_NPUB</b> display on the ECDIS? It is essential that mariners know that information are available.	<b>M_NPUB</b> of type point symbolises as CHINO07 (HO information note). It does not look like <b>M_NPUB</b> of type area symbolises in ECDIS – needs to be confirmed). <b>For discussion at TSMAD22 as part of separate Paper.</b>
2.6	SHOM	In this guide, it is not usual to give a long explanation for a rule. I think that, as for former encoding rules, we should be more concise; to be consistent, there is no reason to keep this paragraph. [2 <sup>nd</sup> paragraph relating to IEC 61174].	Clause re-worded to remove majority of original 2 <sup>nd</sup> paragraph. (1 <sup>st</sup> paragraph of EB). The end of the original paragraph has been retained as introductory information for the following sentences.
2.6	SHOM	For consistency in this document, remove useless words. (Should be done all along the document).	Agree. Text amended accordingly (I have tried to do this throughout the document).
2.6.1	SHOM	In this guide, it is not usual to give a long explanation for a rule. I think that, as for former encoding rules, we should be more concise; to be consistent, there is no reason to keep this paragraph. [9 <sup>th</sup> paragraph relating to IEC 61174].	Paragraph removed.
2.6.2	AUHO	New clause for guidance on encoding of Temporary and Preliminary ENC Updates. This could alternatively be an annex or appendix (?) to the UOC.	<b>Discuss at TSMAD22.</b> AU preference would be to leave where it is – would be messy having an annex (or appendix) to an annex to an appendix.
2.6.2	NOAA	Has this been formally published by the EUWG and accepted by HSSC?	These guidelines were approved at HSSC1 (HSSC1 Minutes 6.10 refers) and submitted and approved by IHO MS (IHO CLs 80/2009 and 13/2010 refer).

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
2.6.2.1	UKHO	Does the preamble still apply in the UOC referring to CHRIS etc? given that this should be a primary encoding reference need to minimise superfluous information for the user.	Clause amended to remove background (superfluous) information.
2.6.2.1	SHOM	Remove historical background which has no reason to be in an encoding guide.	Addressed as part of UKHO comment action above.
2.8.2	TSMAD Chair	Wouldn't this be better placed at the end of 2.8.1? [Guidance on not leaving "holes" in smaller scale ENC coverage where larger scale data exists].	Agree. Have moved as new paragraph at end of 2.8.1.
4.1	AUHO	Inconsistent with S-4. Refer comment at 4.7.11 below.	See comment 4.7.11.
4.7.11	AUHO	UOC guidance on encoding mangroves should be consistent with S-4 guidance (B-312.4). Suggest amending this clause as recommended in TSMAD paper TSMAD19-10.2.	Inconsistency with guidance on mangrove representation in S-4. <b>Discuss at TSMAD22. Will affect S-58 tests.</b>
4.8.5	SHOM	SHOM: It is not usual to justify the rule? It has not been done for equivalent former rules in this document. Should be removed. [Remarks 2 <sup>nd</sup> bullet point].	Sentence removed.
4.8.10	TSMAD Chair	I know what this means, but this is a really clunky sentence. [Remarks 4 <sup>th</sup> bullet point].	I have had a go at re-wording this bullet point so that it makes a bit more sense. <b>TSMAD to review.</b>
4.8.14	SHOM	Since S-52 PL has been updated, the situation is now logical and normal (the previous was not). This new rule is useless and should be removed. [Remarks 4 <sup>th</sup> bullet point].	I tend to agree. <b>Does TSMAD agree?</b>
4.8.15	UKHO	Hotel – D6 Defined as important building [Table 4.1 INT1 references].	<b>Is TSMAD happy to retain the INT1 reference for an important building in a built-up area as the UOC reference for a hotel (only because hotel is used as example)?</b>
4.8.20	UKHO	I note the paper I presented to TSMAD 21 on Reducing Data Volume included specifications for Picture Files, feel there was overall agreement on these. Accepting that it would not be mandatory could we include this guidance ...	Guidance as suggested inserted February 2011. <b>Question for TSMAD: Is this over-specification?</b>
4.8.20	UKHO	We might also consider something to discourage the over-use of picture files given the impact on data volume.	<b>Question for TSMAD: Is such guidance required? Has this been discussed previously?</b>
4.8.20	UKHO	TSMAD might also like to consider tightening up the Private Agreement part?	<b>Discuss at TSMAD22.</b>

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
5.3	UKHO	[Table 5.1] Need to think more about the case of 'no bottom found' but I agree. For S-101 I feel a separate feature might need to be considered to differentiate these from soundings.	Note for S-101.
5.4	NOAA	I think we will need to re-write these entire sections and update the figures to exclude the Linear Depth Areas. It will make it much cleaner.	I tend to agree, but while <b>DEPARE</b> of type line is still a legal geometric object in the ENC PS some Producing Authorities may still prefer to encode linear depth areas. <b>What does TSMAD think?</b>
5.4.1	TSMAD Chair	I don't think we need to even say "may" any longer.	I agree, but think for this version of the UOC we should keep the guidance on encoding linear depth areas for those HOs who wish to retain them in their ENCs. See NOAA comments above.
5.4.2	CHS	(The guidance in the Remarks) seems to go against the diagram (Figure 5) for 5.4.2. According to the diagram the 5-10m <b>DEPARE</b> area are optional. According to the diagram it looks like you could have floating 10m contour in 5-20m <b>DEPARE</b> area. Also, how do you have a 5-20m <b>DEPARE</b> area and 10m contours? Non-standard intervals??? How can you have 5-10m <b>DEPARE</b> area and also a 5-20m <b>DEPARE</b> in the same ENC? Figure 7 in 5.4.3 shows a little different where the floating contour is 8m inside 5-10m <b>DEPARE</b> area... which is fine because according to 5.3 REMARKS: HOs should as a minimum use standardised depth contour intervals. However, additional depth contours can be added, where required... these could be floating 8m. I think that the confusion (at least mine) is that if we need standard intervals, the example in Figure 5 for 5.4.2 is not possible.	I think this Figure has caused some confusion for a long time. Either way, unless the diagram is replaced with something else, it cannot be edited (ancient software). If it is going to be replaced with something else, <b>TSMAD will need to determine what to replace it with.</b>
5.4.4 – 5.4.7	AUHO	If we are going to go to the effort of totally re-writing 5.4 based on discussions for 5.4 above. Suggest that these clauses may be deleted. Will have to put a "currently not used" in (as has been used in S-4) so that following clause numbers are not changed. Will also affect Figure numbers (see comment related to 2.1.8.3 above).	<b>To be discussed with 5.4 above.</b>

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
5.5	AUHO	Additional guidance inserted to align with guidance for dredged areas not regularly maintained at S-4 – B-414.1. [Remarks bullet points 3 and 4].	This is a change to the current UOC guidance. <b>For discussion at TSMAD22.</b>
5.5	NOAA	I would like the INFORM field to be explicitly stated as optional. As the amount of I's do cause clutter and in the case of the United States the same information is in SORDAT.	See above comment. Revised guidance has been compiled with this issue in mind.
5.6	CHS	What is meant by this empty (null) value? Leave as UNDEFINED?	This term has been used elsewhere in the document as a production software neutral term to indicate a mandatory attribute being populated as no value. Has been changed in this clause to standardise the wording.
5.8.3.1	UKHO	What needs to be changed here? Looks Ok to me. Does it just need to be emphasised? I could be missing something.	<b>This section needs to be fully reviewed. And a subsequent ENC FAQ issued (outstanding TSMAD Action – issue raised by IC-ENC).</b>
6.2.1	CHS	So in what circumstance for <b>WRECKS</b> object should QUASOU=2 ( <b>depth unknown</b> : the depth from chart datum to the bottom is unknown) be used? Should it be used? If you say that the QUASOU=2 (depth unknown) for a <b>WRECKS</b> aren't you saying that you do not know the depth above the wreck? So if the least depth is unknown, and unable to determine/estimate safe clearance, what QUASOU should be filled in? [2 <sup>nd</sup> paragraph after table 6.2].	I think the problem here is having both sentences in the same paragraph. I have separated them into 2 paragraphs. Personally I think it is just common sense that QUASOU = 2 on a wreck only applies to the wreck, but I have included this guidance as it is in MD8. <b>Could this be removed?</b> (Also applies to obstructions).
6.2.2	SHOM	The new wording added for this issue is very long, with a lot of details and obvious facts. I think it is enough to keep the first new paragraph and add that CATOBS = 6 and CATOBS = 7 must be used according to the definitions given in the object catalogue (which are not ambiguous). [Last 4 paragraphs before Remarks].	This has been an on-going issue discussed in TSMAD and CSPCWG (and HDWG in regard to definitions) for a number of years. Numerous examples of incorrect encoding and presentation issues on paper charts have indicated that much of the added additional detail is not obvious facts – there is a lot of confusion over the use of the terms “foul area” and “foul ground”. In order to try to reduce some of this confusion, it was an Action item to include such additional guidance as these last 4 paragraphs in the UOC (and as an EB). Would therefore prefer to keep these paragraphs in, even though this may be unambiguous to some encoders. <b>Needs discussion at TSMAD22.</b>

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
6.3.2	AUHO	Should this be a <b>WRECKS</b> area with 2 soundings inside, or an <b>OBSTRN</b> area with 2 <b>WRECKS</b> points inside? [Figure 12].	Feel that <b>WRECKS</b> objects within an <b>OBSTRN</b> area is the best approach as soundings will not display in ECDIS in the obstruction area because of their draw priority. As mentioned earlier S-52 uses the attributes of wrecks to determine display so we should encourage encoders to fully depict wrecks using all available information and avoid merely replicating the paper chart depiction. I think you cover this earlier on. [Response from Tom R]. <b>Discuss further at TSMAD22.</b>
6.6	AUHO	Discussions with Tom R. Paper to be presented at TSMAD22.	Is the subject of a separate TSMAD22 Paper. This clause may need to be amended dependant on the result of discussions.
6.6.1	AUHO	This could alternatively be inserted as new clause 11.13.5 (under Regulated areas)?	I think this fits better under regulated areas. (is there are specific reason why we don't use <b>RESARE</b> for these?). [Response from Tom R]. <b>CTNARE</b> has been used as the purpose of the encoding is to identify the change in regulation only. [AU]. <b>Discuss location in UOC at TSMAD22.</b>
6.6.1	NOAA	As NOAA originally brought this up – we would welcome an alternative encoding to <b>CTNARE</b> .	If it is not considered to be important enough information to trigger an alarm in the ECDIS, then could consider <b>M_NPUB</b> . Dependant on result of discussions regarding clause 6.6.
7.1	CHS	Why did they have to specify "paper charts": below in 7.1 (c), can you not have these on ENC's?	This is to clarify that the symbology shown in Figure 13 relates to paper chart symbology, as is reinforced by the INT1 reference. The guidance following this is for ENC. An alternative would be to say "on the source" and remove the INT1 reference.
10.2.1	CHS	Canada have suggested that it would be nice to have a diagram showing sample encoding of all the elements in a TSS (and other routeing measures), which could be placed in clause 10.2.1. They have supplied a sample diagram based on INT1 diagram "Examples of Routeing Measures" which was put together by Rene Lepage in the late 1990s. I will have this diagram at TSMAD22 for anyone interested.	<b>Does TSMAD think this is a good idea?</b> There has been a diagram (sourced from NOAA) included in the draft S-101 Data Classification and Encoding Guide (clause 15.3), but this does not provide sample coding for all elements of routeing measures.
10.2.2.1	AUHO	Minimum depth in the whole route or just in the part? [Encoding of DRVAL1]	<b>Discuss at TSMAD22. See also 2.2.2.2, 10.2.4 and 10.2.6.</b>
10.2.2.1	AUHO	Amendment associated with changes at clause 15 (TSMAD21 Action). To be reviewed and incorporated in EB once approved. [Remarks 4 <sup>th</sup> bullet point].	New guidance derived from TSMAD21 discussions and Action. <b>For discussion at TSMAD22.</b>

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
10.2.2.1	AUHO	Inserted to be consistent with proposed addition at 10.2.6 resulting from TSMAD21 discussion. To be reviewed. [Remarks 5 <sup>th</sup> bullet point].	New guidance derived from TSMAD21 discussions and Action. <b>For discussion at TSMAD22 in relation to changes also made at clause 10.2.6.</b>
10.2.2.1	NOAA	Perhaps change the word to safety essential, it was pointed out that safety critical implies certain death. [Remarks 4 <sup>th</sup> bullet point].	Agree – amended “safety critical” to “essential for safe navigation” (entire document).
10.2.2.1	SHOM	See my comments in 2.5. [Use of <b>M_NPUB</b> ].	Resolve as part of clause 2.5 discussion.
10.2.3	AUHO	As for 10.2.2.1 above	<b>Address in accordance with decisions made for clause 10.2.2.1.</b>
10.2.4	SHOM	This encoding rule <b>MUST</b> be applied, otherwise the ENC is dangerous for navigation. All the existing ENCs should be corrected to agree with this EB (as it was done for EB27).	This will be changing a “should” to a “must”. If this is the case and as, if suggested, is a safety issue, then there will need to be an IHO CL to notify Producing Authorities (as agreed at TSMAD20) to amend their ENCs if necessary. Will also affect other clauses in the document ( <b>RECTRK</b> etc). <b>Discuss at TSMAD22.</b>
10.2.6	AUHO	As for 10.2.2.1 above	<b>Address in accordance with decisions made for clause 10.2.2.1.</b>
10.2.6	UKHO	A good revised diagram could be based on the Canadian paper relating to this presented to TSMAD 21 using an actual chart image annotated appropriately?	Refer TSMAD21 – 4.7.4. This may be a general convention that could be applied throughout the document. <b>Discuss at TSMAD22.</b>
10.5.3	AUHO	As for 10.2.2.1 above	<b>Address in accordance with decisions made for clause 10.2.2.1.</b>
11.7.4	AUHO	Outstanding EB Action. To be reviewed and incorporated in EB on approval. [Remarks 1 <sup>st</sup> bullet point].	This has been an on-going EB Action for some time (only found it when reviewing Actions). <b>Discuss at TSMAD22.</b>
11.7.4	AUHO	TSMAD21 Action. To be reviewed and incorporated in EB on approval. [Remarks 2 <sup>nd</sup> bullet point].	Looks ok not entirely sure about ‘current farm’. [Response from Tom R]. New guidance derived from TSMAD21 discussions and Action. <b>For discussion at TSMAD22.</b>
12.1.1	AUHO	Are we going to make this list inclusive, as for the equipment objects? [Lights structure objects].	<b>Discuss at TSMAD22.</b>
12.3.2	SHOM	For consistency, make a distinction between lights temporarily extinguished and lights definitively extinguished. See § 2.6.2.2 -10-i for lights temporarily extinguished. [Final paragraph].	Agree. Distinction inserted.
12.4.1.1	SHOM	Remove historical background, which has no reason to be in this document. [1 <sup>st</sup> paragraph].	Agree. Paragraph deleted.
12.8.6.1	AUHO	May alternatively be located at new clause 12.8.6.7, but this would put this guidance separate from other guidance related to sector lights.	Prefer to leave at 12.8.6.1. <b>Discuss at TSMAD22.</b>

UOC Clause No.	Review Comment By:	Comment	Action Taken/Proposed
12.8.6.1	SHOM	It is not the place to explain the technology of oscillating light sector (already exists in S-4). [4th paragraph].	Agree. Paragraph deleted and reference to S-4 inserted.
12.8.7	SHOM	Remove. [1 <sup>st</sup> paragraph after table 12.5].	Agree. Paragraph removed and amendment made to 2 <sup>nd</sup> paragraph.
12.9	AUHO	No longer required on ENC's? Refer S-4. To be discussed.	Ok note these are now obsolescent in INT1. [Response from Tom R]. <b>Discuss further at TSMAD22.</b>
12.9	CHS	At 12.9, 12.11.1, 12.11.3 and 12.13 (green clarification) I think it should said "...Each VHF-channel should be indicated..." replace <i>should</i> for <b>may</b> .	Text in S-57 Chapter 2 (Attributes) and MD8 both state "should". Have left as should to be consistent.
12.14.1	AUHO	ENC EB No. 17 and TSMAD20 Action (to be reviewed and incorporated in revised EB).	Need to review with TSMAD, ECDIS may not necessarily from part of an IBS and may not display AIS information. [Response from Tom R]. <b>Discuss further at TSMAD22.</b>
13.2	AUHO	TSMAS21 Action. To be reviewed and incorporated in FAQ. [Remarks 2 <sup>nd</sup> bullet point].	If it goes in the UOC not sure this warrants a FAQ? [Response from Tom R]. <b>Discuss further at TSMAD22.</b>
15	AUHO	Action from TSMAD21. To be reviewed and incorporated in new ENC EB on approval. [Remarks].	New guidance derived from TSMAD21 discussions and Action. <b>For discussion at TSMAD22.</b>
INDEX	AUHO	The index has been re-formatted to reference clause headings rather than page numbers as in Edition 2.1. Bold text has also been used for clause headings describing the S-57 object classes, or where the index heading is the subject of the clause.	<b>What does TSMAD think?</b>