

INTERNATIONAL HYDROGRAPHIC
ORGANIZATION



ORGANISATION HYDROGRAPHIQUE
INTERNATIONALE

ENC UPDATING WORKING GROUP (EUWG)

[A Working Group of the Hydrographic Services and Standards Committee - HSSC]

Chairman: Yves Le Franc (SHOM)
Vice-Chairman: Richard Coombs (UKHO)

EUWG Letter: 01/2011

Date 21 March 2011

**To EUWG Members
To TSMAD Chair**

Subject: specific guidance for ENC producer/particular points

Dear Colleagues,

During our previous work, we have identified some points which need to be specified to improve ENC production regarding the updating process. EUWG letter 02/2010 asked the opinion of EUWG Members on these points through a questionnaire. The answers are presented in Annex A with conclusions that I have established with the help of UK and AU members.

Some conclusions imply clarifications to S-57 (TSMAD relevant), some others need to be incorporated in S-65 or in both S-65 and S-57. S-65 is more about questions regarding the organization of ENC production and its principles (see S-65 Introduction), while S-57 is obviously about the product specification and the encoding of the data. In some cases, when organisation aspects are mixed with encoding aspects then it should be in the two documents. At the end of each conclusion, I suggest that the item will be integrated in S-65 or be a clarification of S-57.

Things will be facilitated since HSSC2 (October 2010) has adopted the principle to unfreeze the S-57 UOC and asked TSMAD to prepare a revised version. AU (Jeff Wootton, TSMAD and EUWG member) leads this task.

Annex A is also a new questionnaire to validate some conclusions before we start to modify S-65 and S-57 and to get feedback on specific items. Especially, it appears that we are intending to further promote re-issues which are currently not widely used. Therefore, to give the best advice, it is important to get as much feedback as possible, in particular from HOs who used re-issues regularly; from the RENCs; and from the OEMs.

In Annex B is added an interesting paper "Barriers to the use of ENC remote updating services" prepared by UKHO for the 29th North Sea Hydrographic Commission (September 2010) with some

considerations which need to be taken into account in S-65 or in the S-57 UOC to optimize the volume of transmitted data.

I would be grateful if you would examine the Annex A and answer to its questionnaire. Please send your replies **by 22 April 2011**.

The membership list is on the page of EUWG on IHO web site. You will see some changes and new members who are welcome.

Yours sincerely,

Yves Le Franc,
Chairman

Annex A: Summary of responses to EUWG letter 02/2010 – Conclusions - Questionnaire

Annex B: “Barriers to the use of ENC remote updating services” - UKHO - NSHC29

Summary of responses to EUWG letter 02/2010 – Conclusions - Questionnaire

Note: conclusions and new questions are in red.

Question number	
1.	<p>Should the maximum size of an ER be balanced against the maximum number of ER (see ZA question)? Note: answers are especially expected from members in contact with end-users or EDCIS manufacturers.</p> <p><i>ZA: “Concerning the matter of the size and number of updates to an individual ENC cell. Our update files are very small in digital size, the largest recorded for an ENC update being 35kB in size. We currently have one ENC which has 28 updates issued for it. The total size of these updates is 198kB; of which the 3 largest updates total 86kB. The remaining 25 average 3kB in size each.</i></p> <p><i>My question here is this decision to be based purely on the number of updates not to exceed a certain total , or should this decision whether to amalgamate updates in a new edition be based on the agreed upon ceiling in terms of total digital size of these updates be considered? In other words can one have 30 updates that in total that do not exceed 500kB or being produced or have 7 updates say producing 500kB in total size being produced before a decision is reached to produce a new edition?</i></p> <p><i>My concern is that if we apply to low a threshold on the number of updates that can be allowed before a new edition is "forced" in time to come one could be faced an ENC which has run out of ENC update numbering - some paper charts have been around for many many years and why should it not be different with an ENC.”</i></p> <p>Your answer: AU AU believes that the IHO should keep the maximum recommended size for an Update and the number of Updates published for a cell before an EN is required as separate issues in its guidance. If agreement can be reached on a recommended maximum Update file size which is easily handled by the ECDIS but does not restrict the amount of data that can be incorporated in the Update too much, as well as a maximum number of Updates before it is considered that the data is becoming difficult to manage by Service Providers and users, then this should not be an issue. HOs should then be able to make decisions regarding their ENC data based on these recommendations and other factors such as the nature of the cell (complexity and frequency of Updates, etc).</p> <p>In our experience, we have not yet had a circumstance where we have had to consider publishing a New Edition of an ENC cell because we have, in our opinion, had too large a number of extant Updates applicable to the current Edition</p>

of the cell.

CA

[CHS comments] CHS has not had any feedback from clients or RENC concerning how many updates have been released for a base cell. Currently, CHS only has 5 ENC base cells with more than 5 updates issued, with the most being 7 updates to one base file.

CHS issues new edition ENC if update becomes too complex or with many changes, or if a new edition paper chart is released.

Not sure if a maximum number of updates should be enforced. Have there been issues with ECDIS loading larger number of small updates as well as loading large updates?

DK

It is not uncommon for the DKHO to issue a new edition which only contains updates based on the validation tools failure.

FI

FI has not seen any reason to adopt limits on the number of updates or the size of an update.

FR

It seems logical to balance the number of ERs and the total size of updates.

A very large ER in size could cause more disruption in an ECDIS system than great number of small and simple ERs.

IT

IIM usually tries to balance number and size of the updates, but feels that is not necessary to define a specific mandatory rule.

Max number and size of updates can be provided as a suggestion.

JP

We feel that it might be worthwhile to consider not only the maximum number but also the total size of cumulative ERs if it is intended to put restriction on the amount of ERs in order to reduce the time taken to load a new cell into an ECDIS.

KR

We have not had complian from users about the number of updates or its maximum size problems.

EDCIS manufacturers said that those are not matters number of updates(below 999) or its maximum size problems in ECDIS

LV

We have not had feedback from users about the number of updates or its

maximum size problems.

NL

At the moment we do not have rules on the maximum number of updates.

We try to keep the size of an update as small as possible, but if the size exceeds the 50 kb (a little bit) we don't issue a new edition.

NO

We at NHS are not sure that we need upper limits regarding the total size of ER's for a cell, and amount of updates (ER) before a New Edition. If it's not a problem for the distributor, end-users or the ECDIS, we think that the producers should decide their own limits.

PT

IHPT supplies the Portuguese Navy with the entire folio of ENC's and updates from the Portuguese area of responsibility. The systems used by our ships are mainly ECPINS, but we have a few others.

The weekly exchange set produced by IHPT contains 76 ENC's, and in average 369 update files and more than 350 text files. The average number of updates for a single ENC cell are about 11 and the average size of those updates are about 5 kB, but there are a few ENC cells that may contain 25 updates and the size of the biggest doesn't exceed 15kB. Until now, we didn't receive any complaints.

Accordingly with the IHO recommendation in EB No31, an ENC update should not exceed 50 Kilobytes in size, as some ECDIS experience problems with loading large update data sets. Also, every time an update file exceeds 50kB, we are advised by IC-ENC to produce a New Edition for that ENC.

Theoretically, S-57 allows producers to make 999 update files and after that a re-issue should be made. IHPT hasn't experience on what happens to the ECDIS systems when that number of update files is achieved.

So, in our opinion it should be bearing in mind the end users needs and of course get a balance between the maximum sizes of an ER and the maximum number of ER. If there are ECDIS systems experiencing problems because the size of an ER file is too big or an ENC contain a large number of ER files, it seems reasonable that a new edition should be produced.

ZA

Would it be feasible to consider that the time to produce a new edition of an ENC could be when the kB size of total number of Updates in force exceed a percentage (say 10% or whatever percentage of the ENC base cell's size)?

Another factor to consider is that IC-ENC, for example, will take longer to process a NE than an Update file, so putting too many NE's in the system may introduce possible delays in distribution to the end user.

ES

We believe that the number of updates must be independent of their size.

UK

The UK does not see any direct correlation between the size of the ER and the number associated with a particular edition of an ENC. The size of the ER is directly proportional to amount of information required to encode it. The frequency of the issue of ER's depends on the area covered by the ENC, e.g. busy shipping route in the English Channel compared to a fishing harbour on a small Pacific Atoll. The ENC Product Specifications allows for up to 999 updates which should be sufficient capacity even if an ENC is around for many years. Although I would consider it prudent to re-issue the cell from time to time. Should the maximum number of updates be reached then the only option available is to issue a new edition (see 3 below).

This is not an exact science and each ENC should be considered on its own merits.

	<p>If the ER is such that it has been derived, for example, from a NM paper block correction then the size of the resultant ER may be quite large. A subjective evaluation needs to be taken as to whether this is released as an ER or New Edition (or re-issue). If we are going to provide recommendations on this subject we first need to look more closely at providing some precise guidelines based on some sort of criteria. This could be related to the content of the ER and its complexity.</p> <p>Some producer nations do not issue weekly update exchange sets but do so monthly. Under this updating regime the ENC's become more heavily updated over this extended period. This particular country gets around this by issuing either ERs or Re-issues (EN) based on an evaluation of the potential file sizes (see 2 below).</p> <p>PRIMAR</p> <p>We have not received much feedback regarding problems related to size and number of updates to an individual ENC cell and have therefore not much comments to questions 1-3. We think that too many "new editions" also could be a problem because of larger amount of data. Do we have any feedback from ECDIS manufactures about this?</p> <p>US (NOAA)</p> <p>In our experience Users have never complained about the number of updates, although we currently only have a couple of cells with 10 updates, and one of the criteria that does trigger a new edition would be a large number of critical corrections to the base cell.</p> <p>Although, it is not uncommon for the US to issue a new edition that contains just updates due to an export failure.</p> <p>As to a maximum, number of updates the upper limit is most likely constrained to 999 updates, however, NOAA feels that a hydrographic office will likely never reach that limit and eventually a new edition will be released. When EB 31 was drafted, no consideration was given to the maximum size of all the updates bundled together, only to the size of a single update.</p> <p>Conclusion: We are not going to create a rule to balance size and number of ER if there is no real problem nor a solution. This is an issue of describing the variables (number, size and frequency of updates and when to do New Edition or Re-issue*) and how this may impact on the service delivery including remote updating services and/or the ECDIS system depending on the individual decisions of HOs. We should be including information to provide HOs with the capability to make a more informed decision. Advices to be included in S-65.</p> <p>(*): S-57 Appendix B1 : "A re-issue does not contain any new information additional to that previously issued by updates." "After a re-issue, subsequent updates may be incorporated into the SENC created from this reissue or to the SENC created from the original data and kept continuously updated."</p>

		Yes	No
New question 1	Do you agree with this conclusion? Comment:		
2.	<p>If the EUWG decides not to balance size against number of ERs (depends of answers to question 1), do you agree to include in S-65 that an ENC update should not exceed 50 Kilobytes in size as Encoding Bulletin No 31 advises? See also question 3 below.</p> <p>AU AU experience is that, in general, 50Kb is adequate for the majority of Updates that constitute the equivalent of a textual paper chart Notice to Mariners. In general, for the equivalent of a paper chart Notices to Mariners block correction we will produce a New Edition of the corresponding ENC cell(s). Having said this, some other observations made by AU that effect the decision as to whether to produce ER or EN include:</p> <ul style="list-style-type: none"> - Whether the amendments require changes to the Skin Of The Earth data for the cell (will sometimes result in changes to many and/or large depth/land areas); - Whether the amendments affect the geometry of the data coverage limit of the cell. AU has had problems in ECDIS where, for instance, a new maritime boundary covering multiple cells and requiring new spatial features is required, which has resulted in new nodes being placed in the data coverage limit. When these changes have been implemented by ER there have been problems with some ECDIS. <p>CA [CHS Comments] CHS feels that the issue of update loading is an ECDIS issue and preferably the ECDIS manufacturers should remedy the issues some ECDIS have loading large updates. However, since update information is crucial to safe navigation, it is important that the HOs ensure that the updates are a “loadable size”.</p> <p>Some testing should be done to see if ‘ratio’ would be a better way to go. After all, some ENC cells are not very big (some</p>	<p>Yes AU CA (may be) DK FI FR IT KR LV NL NO PT ZA ES UK? US</p>	<p>No JP</p>

	<p>just over 50KB base cells). In these circumstances, issuing 50KB updates seems redundant... the update would be almost the same size as the base cell. A new edition may be more efficient.</p> <ul style="list-style-type: none"> - Maybe a maximum size for an update is not the only thing to consider. Maybe if the update was a certain percentage size of the base cell, then a new edition should be issued instead? <p>FI Yes, as long as it is a 'should'.</p> <p>FR Only as a guidance</p> <p>IT IIM feels that the value of 50 Kilobytes should be only just as an indication because could be difficult to estimate in advance the size of an update</p> <p>JP We think 50KB is too small compared with the acceptable limit for a base cell (5 MB)</p> <p>NO Yes, but only as a recommendation.</p> <p>US NOAA feels that if it is included in S-65 then the encoding bulletin should be cancelled as it is bad practice to have duplicative information in multiple places.</p> <p>Conclusion: The upper limit 50 kb must only be an indication. Regarding AU answer, it would be interesting to hear if there are any other Members who have had problems reported with Updates that affect large changes to Group 1 features or change the geometry of the cell limit. Advices to be include in S-57 and in S-65 if necessary.</p>		
		Yes	No
New question 2	<p>Do you have had problems reported with Updates that affect large changes to Group 1 features or change the geometry of the cell limit?(see AU comment above)</p> <p>Your detailed answer if Yes:</p>		

<p>3.</p>	<p>If the EUWG decides not to balance size against number of ERs (depends of answers to question 1), do you agree to advise in S-65 a limitation of the number of ERs for an base ENC cell (see UK arguments)? What should be the reasonable maximum value suggested to producers (UK suggest 20)?</p> <p><i>UK: “Producers should also be advised not to issue too many updates for a specific edition. The UKHO has seen examples where there are in excess of 60 updates associated with an edition of the ENC. S-65 could recommend an upper limit at which time a NE is issued. It can sometimes take longer to install a large number of updates on an ECDIS than it does to install a new cell or a NE. This is because the ECDIS has to add, modify or remove information in the SENC for each update. This is primarily aimed at new subscribers to ENC services loading the ECDIS for the first time. To put a balanced view on this, it is probably better for users downloading updates via an online service to download update files as they are a smaller file size than NEs. The UKHO has a policy to issues a new edition of the ENC if the number of updates reaches 20.”</i></p> <p>AU There does not appear to be sufficient evidence on which to base a conclusive number. AU would prefer to err on the conservative side so as to try to guarantee no problems with any ECDIS. As stated in our comment for Q1 above, AU has not yet had occasion to make such a decision.</p> <p>CA [CHS Comments] CHS currently does not have any base datasets with more than 7 updates. We have not received any complaints. And in most cases, a new edition would be issued if too many updates accumulated.</p> <p>In addition, the ‘reissue’ datasets in Appedix B1 –ENC Product Specification, are meant to deal with cases where there may be too many updates. ‘Reissue’ datasets are defined as “including all the updates applied to the original data set up to the date of the reissue. A re-issue does not contain any new information additional to that previously issued by updates.”</p> <p>FI FI has not seen any reason to limit the number of ERs yet. Currently the highest update number on a FI cell is 59, while the average number of updates is 7. In total 19 (of 204) FI cells have more than 20 updates. Our QC procedures for ENs and ERs are quite different and therefore ENs are issued instead of ERs only as a last option</p>	<p>Yes AU CA DK FR IT JP KR LV NL PT ZA ES UK US</p>	<p>No FI NO</p>
		<p>Value : AU: 20 CA: 25 DK: 20 FR: 50 IT: 30 JP: ? KR: 30 LV: 20 NL: 20 PT: Depends on the total size of ER files (cf 1.). ZA: 30* ES: 25 UK: 20 US: 25</p>	

	<p>to solve an technical issue.</p> <p>FR 20 ERs doesn't seem enough, especially for small ERs. Only as a guidance</p> <p>JP We don't have enough information to judge the reasonable maximum number of cumulative ERs.</p> <p>We don't think that there is any need for applying a limitation to the number of ERs as long as re-issues are provided timely</p> <p>NO We think it should not be a limitation of number of ERs for a specific edition of an ENC. We have some end-users (especially Pilots) that prefer to receive ERs for minor updates instead of NE. Another issue is that our production system sometimes produces several small ERs instead of one large for technical reasons.</p> <p>(*) ZA 30 (based on the fact that our updates seldom exceed 11kb per update file)</p> <p>UK The above example was based on a vessel visit where UK was installing ENCs on a new ECDIS. The system appeared to "hang" when installing a certain country's ENC updates. In some instances a single update took in excess of ten minutes (much too long) to be applied to the SENC.</p> <p>It must be said however that this particular system carries out the full suite of S-58 validation checks therefore the system has to cycle through these checks for each update. With a large number of updates associated with a particular ENC edition this can add significantly to the ENC to SENC import times.</p> <p>US I have noted that this particular country is now using re-issues to reduce the number of update files. NOAA: Note that the concept of re-issue was supposed to be used when the amount of updates became too great.</p> <p>Conclusion: The interest of the re-issue is highlighted here to reduce the numbers of ER</p> <p>Conclusion: The utility of the limitation of the number of ER doesn't seem obvious and it is difficult to define a threshold. Here the interest of the re-issue is highlighted. It should be used when the amount of updates became too great. Note that the re-issued offers benefits for new subscribers not for users who regularly load ER (especially by download online services). Again we should</p>		
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	provide a balance approach and list the pros and cons and provide an indication. Advices to be included in S-65.		
		Yes	No
New question 3	Do you agree with this conclusion? Comment:		
4.	<p>As suggested by UK, do you agree to include in S-65 that an ER must not change the limit of data coverage for the base as Encoding Bulletin No 31 mandates?</p> <p>CA [CHS Comments] Changing the limit is a significant change and a new edition should be issued to change limits.</p> <p>FR Agree that an ER must not amend this limit for an appreciable change. It should be acceptable to slightly amend the limit (e.g. to adjust with the limits of adjacent cells)</p> <p>IT IIM has sometimes changed the limit of data coverage inside of the cells, for example creating a “no coverage“ area in the already published cell overlapping a new edition cell (but the coordinates of the cell were unvaried) and no problem was reported from Distributors.</p> <p>JP JHOD has often issued ERs which changed the geometry of M_COVR since 1998, because we think M_COVR is the same in data structure as the other area objects such as DEPARE, LNDARE etc. We will continue to issue such ERs for a while (see comment below).</p> <p>UK I have attached a paper that I presented at the joint TSMAD/CSMWG meeting in Cape Town in 2008. This shows the affect of changing the coverage limits in an update and the problems it can cause to ECDIS equipment.</p> <p>US NOAA feels that if it is included in S-65 then the encoding bulletin should be cancelled as it is bad practice to have duplicative information in multiple places.</p> <p>Conclusion: An ER must not change the limit of data coverage because changing the limits can cause some legacy ECDIS to behave abnormally. As S-65 is only</p>	<p>Yes</p> <p>AU CA DK FI FR JP KR LV NL NO PT ZA ES UK PRIMA R US</p>	<p>No</p> <p>IT</p>

	<p>“guidance”, this should be integrated in UOC. The text of EB No31 “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.” should be more précis to state that an ER must be located within the data coverage and that the <u>shape</u> of the coverage must not be changed via an ER. The geometry could be changed only if new nodes are inserted without change of the shape. This last statement need to be confirmed regarding issue raised by AU at question 2. Note the comment of JP at the end of this summary: The second paragraph of the EB No 31* should be modified because it deals with only the cell limit and it doesn’t seem to prohibit from changing the data coverage within the cell limit.</p> <p>(*): 2nd paragraph of the EB No 31 : “New tests introduced in Edition 3 (2008) of International Electrotechnical Commission document IEC 61174 - Marine Navigation and Radiocommunication Equipment and Systems – Electronic Chart Display and Information Systems (ECDIS) – Operational Performance Requirements, Methods of Testing and Required Test Results, include instruction that an update must be rejected if its extent goes beyond the base cell limit.”</p> <p>Advices to be included in S-57.</p>		
		Yes	No
New question 4.1	<p>In its response to question 2, AU reported to avoid ER whether the amendments affect the geometry of the data coverage limit of the cell. AU has had problems in ECDIS where, for instance, a new maritime boundary covering multiple cells and requiring new spatial features is required, which has resulted in new nodes being placed in the data coverage limit. When these changes have been implemented by ER there have been problems with some ECDIS. Do you have had also such problems reported?</p> <p>Comment:</p>		
New question 4.2	<p>Do you agree with this conclusion, in particular to state that “the <u>shape</u> of the coverage must not be changed via an ER”?</p> <p>Comment:</p>		

5.	<p>As suggested by PRIMAR and FR, do you agree to include in S-65 advices on the use of re-issues? IT But only as suggestion, not as a rule.</p> <p>Conclusion: S-65 will provide advices on re-issues.</p>	<p>Yes AU CA DK FI FR IT JP KR LV NL NO PT ZA ES UK PRIMA R US</p>	No
6.	<p>When do you use a re-issue or in which instances do you think a re-issue is useful?</p> <hr/> <p>Your answer:</p> <p>AU AU does not currently produce re-issues of its ENC data, although we can see how re-issues would be useful for Service Providers and users in terms of data handling and management.</p> <p>CA [CHS Comments] CHS has never released a ‘reissue’ dataset.</p> <p>However, if the number of updates to a base cell became too numerous, and a new edition was not planned, then a ‘reissue’ dataset may be useful. Although, as NOAA has pointed out, the current draft of S-101 TSMAD has tentatively agreed to remove ‘reissue’ dataset from the standard. This should be considered before any addition to S-65 regarding ‘reissue’ datasets.</p> <p>DK We have never used Re-issues</p> <p>FI FI has issued a reissue once. This was done as an experiment and for technical reasons. Normally similar cases would be solved by creating a new edition.</p> <p>FR Yes, we use re-issues, but in rare cases such as:</p> <ul style="list-style-type: none"> • to avoid production issues when an ER crashes in our production workflow (although it has been accepted by validation software and the RENC) • to minimize the risk when an ECDIS has a problem (for unknown reason) to upload an ER accepted by the RENC. Usually, this situation is known through a feedback from an end-user. <p>IT In the past IIM used a re-issue to incorporate the updates when they amounted to 30, but now prefers to use a New Edition.</p> <p>JP</p>		

JHOD provides a re-issue for every 6 times it provides ERs.

An ER which is small in size could be more convenient than a new edition or a re-issue for a user who has already applied all past cumulative ERs. On the other hand, a new edition or a re-issue could be more convenient than an original base data set with a lot of cumulative ERs for a user who intends to install a new cell into an ECDIS. So there is a need to provide not only an ER but also a re-issue in order to offer the convenience of the both types of users.

KR

When we provide ENC to the new users.

We also do a re-issue one time in one year annually.

LV

We have never issued a re-issue. We think that when a cell has reached 15 to 20 updates it is possible to issue a new edition with more corrections to a base cell than only accumulate the updates.

NL

Technical problems in the ENC

A large number of changes (NtM block correction)

The release of a new edition of a paper chart.

NO

NHS has never produced re-issues.

PT

IHPT doesn't use re-issues, but a re-issue might be useful after the production of 999 ER files. As stated before, we do not have experience on that and in principle we try to avoid re-issues.

ZA

We avoid Reissues. Have never used this option and probably will not for the present.

ES

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UK

UK has, from memory, only released one re-issue since it started producing ENCs. The reason for this was to confirm ECDIS equipment could handle these types of ENCs. JP & KR routinely release re-issues throughout the year and I have not heard of any systems being inconvenienced by this type of EN.

A re-issue would be useful when the number of updates reaches a certain level and the producer wants to maintain their ENCs in line with their paper charts series. The UK policy for GB ENCs, as stated previously, is to issue a NE after

approximately 20 updates. Opportunity is also taken at this time to include any additional chart information that was not deemed safety critical in terms of an NtoM.

US

At one point our office did utilize re-issues, but found that it was not realistic. Also note that in the current draft of S-101 TSMAD has tentatively agreed to remove re-issues from the standard.

Conclusion: It seems that a very few HOs releases re-issues currently. JP and KR are used to produce re-issues. Concept of re-issue should still exist in S-101. TSMAD has been informed*.

Answers to questions 1, 3 and 6 reinforce the interest for re-issue.

1. We need to provide advice on when it is prudent to re-issue an ENC and under what conditions, new user over existing user.

2. Make recommendations on best practice for the management of data flow for online services.

The principles could be:

- **re-issue : a product for new end-user to avoid heavy loading process of numerous ER**
- **EN + a flow of ER for existing end-user.**

Then, re-issue and the ENC+ER should coexist:

- re-issue on the provider side (it replaces the ENC + ER according to S-57 Appendix B1),

- ENC + ER (since the last edition) on the existing end-user side.

For example, a new end-user will load in his ECDIS (SENC) the re-issue instead the EN + 50 ER. With on line service, he will download via telecom the re-issue instead the EN + 50 ER. The accustomed end-user will load in his ECDIS (SENC) only the new ER (ER no 51, 52, ...). This supposes that the online service is able to know the level of update the ENC in the SENC of the end-user to only send out those update files required to bring the SENC up to date.

Advices to be included in S-65.

Note from chairman: From the S-57 Appendix B1, § 5.7, it is not clear when an ER is required to cancel the base cell file (ENC, edition or re-issue). It appears (to be confirmed) that is required only when a ENC (and all its following editions or re-issue) must be cancelled. When an edition or a re-issue is produced, this type of ER must not be used to cancel previous edition or re-issue of the ENC. A clarification is needed in S-57.**

(*): Extract of the minutes of TSMAD21: "4.2.9 ENC Updating Working Group (EUWG) Report.

JW reported that the EUWG were of the opinion that it is too early to remove "reissues" from S-101. Concern was also raised at HSSC2 concerning the use of temporary updates. The Chairman proposed that TSMAD needs to wait until the completion of the EUWG report before making any decisions about reissues and T&P notices. HB noted that Chartworld would like to retain reissue. Japan also noted that they produce reissues. It was therefore decided to include the concept of reissue in S-101."

	(**): S-57 Appendix B1 extract : “In order to delete a data set, an update cell file is created, containing only the Data Set General Information record with the “Data Set Identifier” [DSID] field. The “Edition Number” [EDTN] subfield must be set to 0. This message is only used to cancel a base cell file.”		
		Yes	No
New question 5.1	Do you agree with this conclusion and principles? Comment:		
New question 5.2	Do you have had problems reported with re-issues? Do you have advices to provide about re-issues? Do you have questioning about re-issues?		
7	<p>Announcement of a new edition (cf. S-52 app1 § 3.2 (m) and S-57 Product Specifications - § 5.7).</p> <p>CA [CHS Comments] Unclear what is being asked.</p> <p>UK It is unclear if this issue is about: (i) each producer announcing an ENC NE or (ii) if this question is aimed at service providers operating a fully integrated ENC service.</p> <p>i) ENC New Editions are not always produced because the content has changed dramatically due to, for instance, a new hydrographic survey being incorporated. Sometimes they are produced for technical reasons relating the producer’s production software. It may also be the policy of the producer to issue a NE as the number of updates associated with an ENC has reached a certain number (see above at 3). For this reason it is considered that this facility serves no useful purpose.</p> <p>ii) From an integrated service provider point of view this would be almost impossible to manage. Managing the announcement of NEs from over 40 different producer nations could prove very time consuming and often frustrating. Especially if NEs are issued at the last moment for the reasons mentioned in the previous paragraph.</p>		
7.1	<p>Do you use ER to announce a new edition or do you know HOs who use this method?</p> <p>Your answer: AU AU does not produce re-issues, nor are we aware of any HO that does.</p>		

	<p>CA [CHS Comments] CHS does not use ER (update) to announce new edition.</p> <p>DK No</p> <p>FI No, we don't.</p> <p>FR No</p> <p>IT IIM uses ER to avoid an old edition (cf. S-57, App. B, 5.7). This ER has a date previous of a day as to the new edition and it is delivered at the same time . IIM doesn't use ER to inform a new edition in advance.</p> <p>JP JHOD has not used this method.</p> <p>KR No</p> <p>LV No</p> <p>NL No. We only announce the release of a new ENC (and the cancellation of the old cell).</p> <p>NO No, NHS does not announce a New Edition by use of an ER.</p> <p>PT No, IHPT doesn't use ERs to announce new editions, but IHPT publishes that information in the monthly Notices to Mariners and in the website.</p> <p>ZA No</p> <p>ES Spain does not use ER to announce a new edition</p> <p>UK UK does not announce NEs in an ER and is not aware of any producer nations who do. It will be interesting to know if Primar know any differently.</p> <p>US NOAA does not use an ER to announce a new edition.</p> <p>Conclusion: It is clear that most of the HOs doesn't use an ER to announce a new edition as described in S-57 Appendix B1*. (*): "To inform the mariner that a new edition is available, an update cell file is created, containing only the Data Set General Information record with the "Data Set Identifier" [DSID] field. The "Edition Number" [EDTN] subfield must contain a value one higher than the current edition number."</p>
7.2	<p>Do you think that an announcement is actually necessary or should an alternative means of communicating a new edition be considered other than an ER?</p>

	<p>Your answer:</p> <p>AU No. What would be the purpose of such an Update?</p> <p>CA <i>[CHS Comments] No, this is not necessary. HOs have been releasing new edition ENC's for many years without and ER announcement, and there have not been any issues that we are aware of.</i></p> <p>DK No</p> <p>FI <i>No, we don't think it's necessary at all.</i></p> <p>FR No</p> <p>IT IIM creates New Editions for different reasons: essential changes of data, more of 30 updates and technical problems. IIM feels that an announce in advance could be necessary only for essential changes of data in the cells.</p> <p>JP We think that the announcement of a new edition by ER might have some meanings, if a state provides new editions and ERs in different ways, for example in the case that it sells new editions for a charge and distributes ERs without charge.</p> <p>KR No</p> <p>LV No</p> <p>NL An announcement is not necessary.</p> <p>NO NHS thinks that an announcement is not necessary at all.</p> <p>PT If the mariners feel that it would be necessary the announcement of new editions, maybe we should think about an alternative means of communicating that. Actually IHPT makes the announcement of publication of new editions, but doesn't know how many end users consult this type of information made available through the Internet</p> <p>ZA I believe it could add value to the customers if Data Distributors or IHO ENC producers could provide such a service on their websites in addition to any other measures agreed.</p> <p>ES We believe that an announcement is not necessary when a new edition is published, although it would be interesting to announce when the first edition of an ENC is published.</p> <p>UK UK does not think this facility is necessary given UK's comments in 7. In the paper chart world customers have to buy (purchase) new editions so an</p>
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	<p>announcement is made in the weekly NtoM of the fact so that they can plan their paper chart holdings for the next voyage. Integrated ENC services subscribing to the S-63 DPS licence customers over a subscription period so any ENC NEs come at no extra cost during this subscription period.</p> <p>Note: S-63 Edition 1.1 has included a method of flagging cancelled an replaced ENC's.</p> <p>PRIMAR It looks like most HOs do not issue an ER to announce that a new edition is available. For us it therefore looks like it is not necessary to issue an update to announce that a new edition is available.</p> <p>US NOAA feels that an announcement should be made when a true new edition has been released. Currently, we utilize an XML catalogue that contains the metadata for our entire ENC suite.</p> <p>TSMAD is considering a product specification for this type of metadata to be used in conjunction with S-101.</p> <p>Conclusion: ER to announce a new edition seems unnecessary. Some other mechanisms exist. A clarification is needed in S-57 for such ER.</p>			
8.	<table border="1"> <tr> <td data-bbox="316 1070 1145 1948"> <p>Do you agree to include in S-65 advice about new or modified Traffic separation schemes (incorporation of encoding bulletin No 25)?</p> <p>AU There will be a proposal put forward to HSSC2 this October to “unfreeze” the S-57 UOC to allow for additional encoding guidance (such as that contained in EBs and parts of S-65) to be incorporated. If this proposal gets up, AU would be more in favour of incorporating this advice in the UOC.</p> <p>FI Yes, but only if there is a good reason to duplicate this information in S-65 since it already exists in EBs (or later in UOC)? Would a reference be enough?</p> <p>FR It could also be in UOC, as this document could be unfrozen.</p> <p>NO Yes, but maybe it belongs in the use of the object catalogue (UOC) when/if it will be unfrozen in the future.</p> <p>UK I would be more inclined to take a generic approach to this since TSS is only one example, albeit a very important one, affected by temporal attribution. And TSS is only one example of ‘Routeing Measures’.</p> </td> <td data-bbox="1145 1070 1305 1948"> <p>Yes AU CA DK FI FR IT JP KR LV NL NO PT ZA ES UK PRIMA R</p> </td> <td data-bbox="1305 1070 1418 1948"> <p>No US</p> </td> </tr> </table>	<p>Do you agree to include in S-65 advice about new or modified Traffic separation schemes (incorporation of encoding bulletin No 25)?</p> <p>AU There will be a proposal put forward to HSSC2 this October to “unfreeze” the S-57 UOC to allow for additional encoding guidance (such as that contained in EBs and parts of S-65) to be incorporated. If this proposal gets up, AU would be more in favour of incorporating this advice in the UOC.</p> <p>FI Yes, but only if there is a good reason to duplicate this information in S-65 since it already exists in EBs (or later in UOC)? Would a reference be enough?</p> <p>FR It could also be in UOC, as this document could be unfrozen.</p> <p>NO Yes, but maybe it belongs in the use of the object catalogue (UOC) when/if it will be unfrozen in the future.</p> <p>UK I would be more inclined to take a generic approach to this since TSS is only one example, albeit a very important one, affected by temporal attribution. And TSS is only one example of ‘Routeing Measures’.</p>	<p>Yes AU CA DK FI FR IT JP KR LV NL NO PT ZA ES UK PRIMA R</p>	<p>No US</p>
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	<p>We should also bring to the producer’s attention that older legacy systems may not handle this type of encoding or they may manage them in different ways to those identified in S-52.</p> <p>US</p> <p>This information should go into the Use of the Object Catalogue, however, since it is currently frozen, TSMAD needed to issue an encoding bulletin.</p> <p>Conclusion: Since the UOC is unfrozen, EBs will be integrated in UOC (under going within TSMAD by AU)</p>		
<p>9.</p>	<p>As suggested by PRIMAR, do you agree that the UADT of a new edition base cell must be equal to or greater than the ISDT of the last update of the previous edition cell?</p> <p><i>PRIMAR: We have had feedback about this from a distributor saying that this (UADT of edition 2 is earlier than the ISDT of the last update to the previous edition) might cause problems loading the new edition in some ECDIS.</i></p> <p>FI</p> <p>In S-57 it is defined that Update Application Date (UADT) is a date, on or before which dated updates must have been applied by the producer. Issue Date (ISDT) is a date when the date was made available. We see no reason why UADT of the new edition base cell could not be before the ISDT of the last update of the old edition.</p> <p>In our case UADT is automatically set as the date when the data has been extracted from the database. Changes applied to the database after that date are not included in the base cell. The QC cycle of a base cell takes from a couple of days to several weeks. During the QC cycle of the new edition the old edition is still maintained and thus updates issued if necessary (QC cycle of ERs is from a few hours to a couple of days). If it happens that there is an update issued for the old edition during the QC cycle of the new edition, the ISDT of the update is, like it should be, greater than the UADT of the new edition. In these cases the same update information will be included in the new edition in the base cell itself or as a separate new ER depending on how far in the QC cycle the cell has proceeded before the update information is received. In the latter case the base cell and the new update will be issued simultaneously.</p> <p>The ISDT of the new base cell must be equal or greater than the ISDT of the last update of the previous edition.</p> <p>UK</p>	<p>Yes</p> <p>AU CA DK FR IT JP KR LV NL NO PT ZA ES UK PRIMA R US</p>	<p>No</p> <p>FI</p>

	<p>The example provided in the S-57 Product Specification where UADT < ISDT indicates that this is a re-issue of an ENC. In which case this could cause problems with some ECDIS who use a rule based ENC management utility.</p> <p>Conclusion: It seems impossible to state that the data must be applied before it has been issued. Following this principle, UADT should normally be greater or equal to ISDT. As ISDT of a new edition is greater than the ISDT of the last update, in consequence, UADT of a new edition should be greater than the ISDT of the last update. The only exception to “UADT greater or equal to ISDT” should be for re-issue (see example in S-57 Appendix B1 § 5.7, table 5.1) where the UADT should be the UADT of the last ER. Note that UK reports this could cause problems with some ECDIS who use a rule based ENC management utility (UK comment). UK also reports problems with some ECDIS when the ISDT had been set for a week in the future.</p> <p>It will be also strange if UADT (application date) is greater the ISDT.</p> <p>This item is under discussion in RENC to RENC (IC-ENC and PRIMAR) harmonization WG and within RENCs Experts WG.</p> <p>S-57 Appendix B1 needs clarification on rules for encoding UADT and ISDT.</p> <p>These rules could be simple :</p> <ul style="list-style-type: none"> - UADT is equal to ISDT, except for re-issue - UADT for re-issue is the UADT of the last update - ISDT should not be in the future when the data are available for end-users - EN/ER has greater ISDT than previous EN/ER. <p>A clarification is needed in S-57.</p>		
		Yes	No
New question 6.1	Do you agree with this conclusion and with the rules for encoding UADT and ISDT? Comment:		
New question 6.2	From the proposed rules, for re-issue the UADT should be the UADT of the last ER but UK reports this could cause problems with some ECDIS who use a rule based ENC management utility (UK comment).		

	<p>Do you have had problems reported with UADT smaller than ISDT? Comment:</p>		
10.	<p>Incorrect update <i>PRIMAR : If it is reported from a user that it is not possible to load an update properly (ER file) into an ECDIS system due to errors in the file, it is then recommended that the HO creates a new edition of the cell(not a new update). The reason for producing a new edition is suggested, is that if an error(in update 001) is fixed in a new update (in update 002) it might be a problem to load the new update because of the original problem in update 001.</i> <i>UK : We have come across instances in our AVCS service where countries have issued updates with no update information contained in the file. This is probably the result of their production software failing. Instead of creating a blank update (no add/modify/remove info) producers should be encouraged to create a re-issue or new edition. Blank update can cause some ECDIS problems as they are expecting some form of command in the 8211 file</i></p>		
10.1	<p>Do you agree that the producer should check updates to avoid “blank updates” (except for updates cancelling a cell or announcing a new edition of a cell (see question 7.1 above))?</p> <p>Conclusion: HOs should check updates to avoid “blank updates” except for updates cancelling a cell or announcing a new edition of a cell. A clarification is needed in S-57.</p>	<p>Yes AU CA DK FI FR IT JP KR LV NL NO PT ZA ES UK PRIMA R US</p>	No
10.2	<p>If it is reported that it is not possible to load an update properly, do you agree that the producer should create a re-issue or new edition? AU Are there any other options? FI Such cases should be caught before they reach the user – either by the HO or RENC. IT Only when it is strictly necessary.. Conclusion: If it is reported that it is not possible to load an update properly, the producer should create new edition. A re-issue doesn’t work because: - a re-issue must not be used for incorporating a change to</p>	<p>Yes AU CA DK FI FR IT JP KR LV NL NO PT ZA (a new edition) ES UK PRIMA R US</p>	No PT

	<p>the data that has not previously been incorporated by ER, - ECDIS with SENC already loaded with the ENC and its subsequent ER will not load the re-issue.</p> <p>Advices to included in S-65</p>		
11.	<p>As suggested by PRIMAR, do you agree that after a cancel cell update is issued, the name of the cancelled cell should not be re used?</p> <p><i>PRIMAR: The main reason for this is that the cancellation update that are released can be applied to newer editions as well.</i></p> <p>NO</p> <p>We at NHS would like to be able to re-use cell names after a cancellation, but if appropriate the name could be put into quarantine for a period of time, for instance 1 year before it is re-used?</p> <p>UK</p> <p>Some ECDIS equipment allows users to retain ENCs in the SENC even though it has been cancelled. For this reason alone it would be dangerous to reuse cell names as it could cause all types of conflicts, e.g. sequential updating would be compromised.</p> <p>Conclusion: Some ECDIS equipment allows users to retain ENCs in the SENC even though it has been cancelled. Due the potential for serious issues in the ECDIS by re-use of a cancelled cell name, the name of the cancelled cell should not be re used.</p> <p>A clarification is needed in S-57.</p>	<p>Yes</p> <p>AU CA DK FI FR IT JP KR LV NL PT ZA ES UK PRIMA R US</p>	<p>No</p> <p>NO</p>
		Yes	No
New question 7	<p>The paper “Barriers to the use of ENC remote updating services” (Annex B) makes the following considerations:</p> <p>« To promote the use of remote updating services ENC producers need to ensure that only necessary data is included in the ENC or its updates. The UK has identified a number of issues that can affect these sizes and which ENC producers have control over. These include:</p> <ul style="list-style-type: none"> • Generation of a New Edition where an update would be sufficient – this is a known constraint on some HOs whose production systems force this. • Inclusion of picture files that appear unnecessary (eg the same picture of a can buoy linked to every occurrence of the object) • The resolution of picture files. There is currently no guidance on resolution or compression within encoding guidelines and there is a wide range of file sizes (eg > 30 Mb for a single image in one case) 		

- Excessive and unnecessary points encoded on lines. This is often an issue caused by automated capture methods. Many ENC's contain point position vertices that are in excess of that need in the encoding guidance; this 'inflates' the size of ENC's and updates considerably

There is considerable variance in approach by ENC producers to these issues and it seems that in some cases additional guidance is required. These matters will be taken forward through the relevant IHO Working Groups.»

Do you agree with these considerations and with their integration in S-65 for the first one and in UOC for the others?

Comment:

Other comments received following EUWG 02/2010:

JP

Regarding the question 4, we feel the second paragraph of S-57 Encoding Bulletin No31 should be deleted because the paragraph might be misleading information. The paragraph describes:

“New tests introduced in Edition 3 (2008) of International Electrotechnical Commission document IEC 61174 - Marine Navigation and Radiocommunication Equipment and Systems – Electronic Chart Display and Information Systems (ECDIS) – Operational Performance Requirements, Methods of Testing and Required Test Results, include instruction that an update must be rejected if its extent goes beyond the base cell limit.”

The above paragraph deals with only the cell limit and it doesn't seem to prohibit from changing the data coverage within the cell limit. So we had incorrectly taken EB No 31 as a rule intending to prohibit from changing cell limit, not data coverage, until we saw UKHO's answer to this questionnaire.

Conclusion included at point 4.

PT

From the perspective of IHPT, this issue of updates, ER files, size and number of ER files, is not as simple as appears. There are lots of other factors that can influence the behaviour of the systems. It is important that we supply the end users with all the updated information about EN and ER files, in order to simplify their work in the data management on board.

NSHC 29th Conference
Brest
September 2010

Explanatory Note
Item **B2**
United Kingdom

B STRATEGIC ASPECTS OF THE WORK OF HOs – TECHNICAL ISSUES

B2 Use of remote updating services for ENC's

Barriers to the use of ENC remote updating services

Background:

With the wider fitting of ECDIS and use of satellite communications on board ship it has been anticipated that the use of remote updating services would expand quickly. The use of such services is desirable as it can ensure that mariners receive important updating information quickly and without the need for physical media to be sent to the vessel.

A range of services from different suppliers have been available for several years including from the UKHO. The UK experience is that the number of users and the frequency of downloads continues to grow very slowly; at present less than 5% of vessels using UKHO ENC services use the remote updating services.

A major reason for the slow growth in use is the cost of data transmission by satellite combined with what can be the relatively large file sizes needed to transfer the update information. Many remote update services provide means to minimise cost by allowing downloading of updates for selected cells only rather than for the full ENC outfit carried.

ENC service providers that have SENC services have an advantage over those providing S57 based services as the SENC format is normally much more compact and the amount of data needing to be transferred is therefore considerably reduced. If S57 based services are to be able to 'compete' then the amount of data to be transferred needs to be minimised and potentially other mechanisms for S57 transfer (eg the use of differencing techniques) employed.

At present it is clear that many more vessels, even those that are ECDIS fitted, are using remote updating services for paper charts than for electronic charts. This is largely due to the lower and more certain costs of such services. A potential confusion may be created; ships have and use both paper charts and ENC's and the updating is not synchronised. Where there is potential for this confusion vessels should have a procedure to ensure any inconsistencies are noted. This can be an issue during Port State Control checks.

It should be noted that vessel 'broadband' speeds are markedly lower than land based ones. A typical speed (outside spot beams) available for most vessels (excepting Cruise vessels) is more likely to be in the order of 400Kbit rather than the 2Mbyte speeds available to land based users.

Considerations

To promote the use of remote updating services ENC producers need to ensure that only necessary data is included in the ENC or its updates. The UK has identified a number of issues that can affect these sizes and which ENC producers have control over. These include:

- Generation of a New Edition where an update would be sufficient – this is a known constraint on some HOs whose production systems force this.
- Inclusion of picture files that appear unnecessary (eg the same picture of a can buoy linked to every occurrence of the object)
- The resolution of picture files. There is currently no guidance on resolution or compression within encoding guidelines and there is a wide range of file sizes (eg > 30 Mb for a single image in one case)
- Excessive and unnecessary points encoded on lines. This is often an issue caused by automated capture methods. Many ENCs contain point position vertices that are in excess of that need in the encoding guidance; this 'inflates' the size of ENCs and updates considerably

There is considerable variance in approach by ENC producers to these issues and it seems that in some cases additional guidance is required. These matters will be taken forward through the relevant IHO Working Groups.

Recommendations

The NSHC Conference is invited to note the issues affecting ENC file sizes and, as appropriate, consider national encoding policies in order to promote the use of remote updating services