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 Coombes (UKHO)

EUWG Letter 05/2009

Date 26 September 2009

To EUWG Members and
To chairs of CSPCWG, TSMAD and JTEWG

Dear Colleagues,

Subject: guidelines version submitted to the HSSC1

Since the distribution of letter EUWG 04/2009, we have received very helpful advice on the Guidelines version v0.21 from AU, IC-ENC and also from chairs of CSPCWG, TSMAD and JTEWG. Annex A and B show these advices and the following comments from EUWG chairman.
These advices have been addressed and the result is the version v0.3 in annex C, where the main changes are highlighted in yellow. Editorial changes are numerous but they are not shown (thanks to UK and AU).
Guidelines version v0.3 will be submitted to the HSSC for endorsement during its next meeting (Singapore 19-21 October). The EUWG Guidelines could be also included in the publication S-65 *ENC Production Guidance.*
The EUWG's report to HSSC1 is available on the HSSC web pages. I invite you to read it as, due to times constraint, I have not been able to consult the members before addressing it to HSSC secretary. I would be very grateful if you could send me your comments before HSSC1 (which I will attend). In particular, I express in the report some concerns about the second task of our group: "review and revise the updating mechanisms as contained in S-52 Appendix 1". I would like to have your opinions on this topic. Note that some reviewed parts of the S-52 appendix 1 could be also included in the publication S-65.

Yours sincerely,

Yves Le Franc,
Chairman

Annex A: comments from CSPCWG, TSMAD and JTEWG
Annex B: comments from AU and IC-ENC
Annex C: Guidelines – Version 0.3

Guidelines for encoding ENC T&P Notices v0.2 – 23 July 2009

CSPCWG, TSMAD and JETWG comments

DRAFT GUIDELINES for ENCODING TEMPORARY and PRELIMINARY ENC UPDATES

INTRODUCTION

At its 20th meeting held in Brazil in November 2008, the Committee on Hydrographic Requirements for Information Systems (CHRIS) drew attention to inconsistencies in the promulgation and distribution of Temporary (T) and Preliminary (~~T&~~P) Notices to Mariners (NMs) intended for use in ECDIS. It was identified that:

- about half of all ENC Producer States promulgate the equivalent of T and/or P ~~notices~~ NM via ENC updates, whereas the other half invite mariners to refer to Notices to Mariners booklets or websites;
- not all T&P notices intended for ENCs are in English;
- translation of T and P notices intended for paper charts into ENC updates is sometimes difficult and may introduce an additional time delay for the distribution of safety significant information;
- it is very difficult for the ENC users to comprehend the T and P notices network and get rapid and seamless information from one region to the other.

The Committee agreed that the situation has implications for safety of navigation and consistency of ENC services and therefore requires urgent study and resolution. As a result, the Committee decided to form a temporary Working Group (ENC Updating Working Group) tasked with developing contemporary guidance on standardised processes for the delivery and implementation of updates to ENCs. More specifically the EUWG was asked to develop and propose a pragmatic approach to overcome any current shortcomings in the updating mechanisms for T&P notices in ENCs.

The present document is the result of the work of the EUWG. It has been developed through an iterative process of correspondence with all the members. It provides high level guidance for promulgat~~e~~ing the equivalent of T and/or P notices via ENC updates (ER). Through a set of recommendations, it gives keys to perform appropriate ENC updates. The guidance is in accordance with the current standards. It allows for some latitude in its application and is dependant on the assessment of each particular case. It is also down to the judgement of each producer.

Commentaire [j1]: CSPCWG: These terms can be used separately, so better to explain each abbreviation.
Chairman: agree

Commentaire [j2]: CSPCWG: In the context of paper charts, the term 'NM' is better. I am unclear whether the use of the term 'notices' – used extensively below - is deliberate to incorporate ENC updates. If not then I suggest you stay with the specific abbreviation 'NM'.
Chairman: agree

Commentaire [j3]: CSPCWG: In this context, 'navigationally' is a better term.
Chairman: agree

PART A - Temporary Notice to Mariners

GENERAL

1. Temporary Notices to Mariners, (T) NMs, for paper charts are defined in S4, Section B-600, in particular in § ~~B-601.8 and~~ B-633 (under ~~revision~~ development by CSPCWG). A (T) NM promulgates navigationally significant information that will remain valid only for a limited period of time.

   For the paper chart, the convention is for the mariner to insert the update on the chart in pencil, and erase it when the (T) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER[1]). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the notice without additional workload for the mariners.

   HOs should promulgate temporary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC. This service ~~also offered~~ corresponds to the service that (T) NMs offer to the paper chart user.

2. ER encoding for an ENC and (T) NM for the paper chart are two completely different communication processes for promulgating information to the mariners. Since these processes are different, and also the products to which they apply are different, it is recommended that ENC Updates be derived from the source information rather than the paper chart (T) NM as often the (T) NM for paper chart does not provide enough detail to perform the relevant ENC Update.

3. If possible the information should be encoded with the relevant S-57 objects. However, HO should consider the following:

   - An ENC update ~~should~~ must not be initiated if the information will no longer be valid by the time it is received by the mariner; this will depend upon the timescales relating to a producer nation's ENC Updating regime. Shorter time periods may be covered by Radio Navigational Warnings (RNW). If possible, the ENC Update should include an indication of how long the temporary change will remain in force.

   - An ENC update should not be issued if it is unlikely that the hydrographic office will be notified when the temporary nature of the change will revert its original charted state. Without this notification the information issued by the ENC update cannot be cancelled at the appropriate time. If possible, an alternative method should be used, such as a general note or by issuing a permanent ENC update explaining, for example, that the aids to navigation within an area are reported to be unreliable.

   ~~This implies~~It is important that HO should consider constraints of time when identifying the encoding method. Time consuming and unnecessarily complex methods of encoding should be avoided.

4. The overuse of CTNARE objects (especially CTNARE, primitive area) for temporary information should be avoided. The CTNARE object is used when it is relevant for the object and/or when a particular change needs a special warning. CTNARE may be used when the relevant objects cannot be encoded, e.g. information cannot be displayed clearly or cannot be easily charted, due to time constraints, and/or does not imply caution.

5. To correctly encode an ENC update the source information is ~~useful~~ essential in determining which elements of the update are reliable, which are permanent and which are temporary. The STATUS

[1] The ER application profile only applies to ENC update cell files. S-57 Appendix B of the ENC Product Specifications refers

Commentaire [j4]: CSPCWG: Suggest this single reference is sufficient.
Chairman: agree

Commentaire [j5]: CSPCWG: Reword as it is not yet published.
Chairman: agree

Commentaire [YLF6]: Will be updated

Commentaire [j7]: CSPCWG: This may be the current situation but what we should be seeking is to derive both the paper chart T NM and ENC update in the same process when new source information is assessed. As worded, this could imply a parallel and independent process. The danger of this is that a) there is a greater risk of introducing inconsistency in the outputs for paper and ENC and b) potential duplication of effort by assessing data twice.
Chairman:
-text amended to: "Since the paper chart and ENC processes are different (but supposed to be not independent), and also the products to which they apply are different…",
- new point 9 created to highlight "Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper chart NM "

Commentaire [j8]: CSPCWG: This caveat implies it may not be achievable? Should this read 'If known'?
Chairman: agree "If known" B-633.3 should be amended accordingly.

Commentaire [j9]: CSPCWG: Is this correct? That is, CTNARE used where there is no caution' !
Chairman: it is a mistake. Read "implies caution". But It seems preferable to remove these terms to be clearer.
Chairman: agree

Commentaire [j10]: CSPCWG: Comment at para 2 above refers.

attribute value 7 (temporary) should only be used in an update when it is certain that the status of an object is confirmed as temporary.

6. Use of DATSTA - DATEND
   The earliest date on which an object will be present (DATSTA) and the latest date on which an object will be present (DATEND) must only be encoded when known. When theses dates are encoded for navigational aids, DATSTA and DATEND must be populated on each component of the aid (for FOGSIG, RETRFL and TOPMAR, *refer to S-57 Edition 3.1 Supplement No. 2 - June 2009*).

   The ENC update should be issued as close as possible to the earliest date (DATSTA), except if it is appropriate to give the information well in advance. An object no longer present should be removed by issuing a further update as soon as possible after the expiry date (DATEND). The timing of issue will depend upon the timescales relating to a producer nation's ENC Updating regime.

   When an ENC update promulgates information well in advance and uses DATSTA and DATEND, a CTNARE object may be used in order to inform mariners that temporal information exists at some future point in time. For new or amended routeing measures, see encoding bulletin number 25.

   Note that some older legacy systems may not have the functionality to manage temporal information correctly or may have implemented it ~~improperly~~incorrectly. Some ENC producers may wish to include additional encoding to safeguard against this. For example, by use of a CTNARE describing the changes and timings.

7. The INFORM attribute should be used to give supplementary or contextual information when encoding temporary (or preliminary) information. When the text is too long to be encoded with INFORM (the INFORM/NINFOM text should not be over 300 characters - *see S-57 MAINTENANCE DOCUMENT, clarification 8.Cl.1*), the attribute TXTDSC is used. In these cases the INFORM attribute could be used to highlight the existence of the TXTDSC file. Encoders using INFORM/TXTDSC to provide positional information must express the coordinate values in WGS 84 and in accordance with S4 §B-131. If it is deemed necessary a picture file (PICREP) can be attributed. If the relevant object class (e.g. CTNARE) does not have PICREP as an allowable attribute then this can be attributed against a M_NPUB object which shares the same geometry as the relevant object.

8. ENC updates issued for temporary information should be carefully managed and reviewed regularly to consider whether further action is necessary. New information may have been received that necessitates the issuing of a new update to modify or cancel the previous one.

   Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper ~~notice~~NM. HO should make it easy to recover the original chart conditions before the temporary changes came into effect.

GUIDELINES FOR TYPICAL CASES

a. Individual new physical objects (e.g. wreck, buoy) with no associated explicit or implicit area associated (e.g. restricted area)

Encode the relevant S-57 object.
In this instance a CTNARE would not normally be used.

b. Individual new physical objects with an associated explicit area around it

Encode the relevant S-57 area object (e.g. RESARE). The relevant object is created for the new physical object. However, when the area is an "entry prohibited area" or a CTNARE the new physical object may be omitted to simplify encoding except if ~~conspicuous, e.g.~~ navigationally significant, e.g. obstruction, conspicuous.

Commentaire [j11]: CSPCWG: Surely, it is the navigationally significant physical object that is crucial not the attribution?
Chairman: amended text: " or a CTNARE the new physical object may be omitted to simplify encoding unless it is navigationally significant"

c. Individual new physical object with a notification of caution, e.g. "Mariners are advised to navigate with caution…"

Encode the relevant S-57 object. Additional clarification and advice can, if required, be provided in INFORM or TXTDSC. Exceptionally, a CTNARE may be created to highlight the caution if considered necessary.

d. Obstructions (including wrecks) reported to exist within an area

Encode an OBSTRN area or WRECKS area.

e. New simple area object (military practice area, dredged area)

Encode the relevant S-57 area object
Supplementary information is provided in INFORM or TXTDSC.
Normally, a CTNARE is not added.

f. Complex information within an area (e.g. works in progress where the changes are numerous or involve complex changes to the topology)

Encode the area object. It should be encoded with the relevant S-57 object or, if more suitable or by default, a CTNARE. Supplementary or contextual information is provided in INFORM or TXTDSC. When the available information is sufficiently detailed, navigationally significant objects (e.g. navigational aids, obstructions) are created or modified within the area. When the available information does not permit this, a CTNARE defining the area is preferred.

If the information exists and time permits, less navigationally significant objects may be added or modified.

Commentaire [j12]: CSPCWG: An example where the ENC update can include more than the paper chart NM (provided the time / effort justifies it in terms of other work not being done!).
Chairman: sentence removed.

g. Changes to an existing object (e.g. navigational aid)

In these instances it is usually only necessary to change the attributes values. A CNTARE may be used to warn the mariners if it is considered necessary.

h. Buoy temporarily moved

When a buoy is temporarily moved, then it, and any associated objects, is moved to the new position then the STATUS attribute value 7 (temporary) is used. Alternative encodings are possible, for example, if the move is for a fixed period of time. In these cases the object, and any associated components, can be created in the temporary position with DATEND (date of the end of fixed period of time) attributed to it. The currently charted object, and any associated components, can be attributed with DATSTA (date of the end of fixed period of time). A Cautionary Area may,

if considered necessary, be added. Data producers may wish to consider the note in section 6 under the "General" heading.

i. Light temporarily extinguished

The STATUS attribute of a LIGHTS object is encoded with the values 11 (extinguished) and 7 (temporary).

j. Change to a maintained depth in a dredged area

When information is received from an official or recognised survey authority relating to a dredged area where the ~~maintained~~ depth has changed, the attribute value of DRVAL1 for the DRGARE object should be changed to the value provided by the survey.

When a depth within a dredged area is reported shoaler than the stated ~~maintained~~ depth, then a CTNARE is created covering the area concerned. The depth information can be provided in the CTNARE attribute INFORM or by adding a SOUNDG object with the appropriate attributes VALSOU and EXPSOU. VALSOU should be attributed with the sounding value and EXPSOU set to 2 (shoaler than the range of depth of the surrounding depth area).

Commentaire [j13]: CSPCWG: Propose remove 'maintained' to avoid any confusion between 'dredged' and 'maintained' areas (S-4 B414 refers) . Chairman: read the "the dredged depth has changed"

Part B - Preliminary Notice to Mariners

GENERAL

1. Preliminary Notices to Mariners, (P) NMs, for paper chart are defined in S4, Section B-600, in particular in § B-634 (under ~~revision~~ development by CSPCWG). A (P) NM promulgates navigationally significant information early to the mariner ~~generally~~ e.g. when a ~~paper chart updating or a~~ paper chart new edition can not be issued in due time.

   For the paper chart, the convention is for the mariner to insert the update on his chart in pencil, and erase it when the (P) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the notice without additional workload for the mariners.

   HOs should promulgate Preliminary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC. This ~~method of delivery~~service corresponds to the service that (P) NMs offer to the paper chart~~s~~ user.

2. ER encoding for ENC and (P) NM for paper chart are two completely different communication processes for promulgating information to the mariner. For example, there are instances when the paper chart needs updating using a NM block (also known as a chartlet or patch)~~correction~~ or by issuing a new edition. This is normally due to the receipt of extensive new information, e.g. new survey. The lead time for a~~n~~ NM block correction or a new edition can be lengthy, sometimes several months. In these cases a (P) NM may be issued as an interim measure. The ENC updating mechanisms are more flexible and may allow for ENC updates to be issued in quicker time.

   There may be other instances, when new information is received, where it is not be possible to ~~correctly~~ fully update both the ENC and paper chart promptly. In these cases it is still necessary to provide notification of navigationally significant changes to the mariner in a timely manner.

   Since the paper chart and ENC processes are different, and also the products to which they apply are different, it is recommended that ENC updates be derived from the source information rather than from the paper chart (P) NM. It is often the case that the paper chart (P) NM does not provide enough detail to encode the ENC update exactly as it should be.

3. Simple or more complex encoding methods are possible but it is important that HOs should consider carefully which encoding method is appropriate when creating an ENC update with due consideration for time.

4. Often, information received is too complex, extensive and/or imprecise to be encoded with the relevant S-57 objects. In these instances the use of the CTNARE object and its attribute INFORM is preferred to give a précis of the overall changes together with detailed navigationally significant information. For complex or extensive changes the CTNARE should have an associated TXTDSC file containing precise details of the preliminary information. See also Part A, §7. If the information is less precise then the INFORM attribute can be used to inform users of this fact.

   It is noted that the mariner, if it is considered necessary, has the facility in the ECDIS to add "Mariner Objects" and annotate them. These can be saved in the SENC based on information provided in textual form by the TXTDSC or INFORM attributes. It is envisaged that these objects would be created at the "Route Planning" stage and act as a prompt during the "Route Monitoring" phase.

   When information is issued as advance notification for an ENC it is necessary to provide as soon as possible to the mariner the final and full charted information encoded with the relevant S-57

Commentaire [j14]: CSPCWG: Reword as it is not yet published.
Chairman: agree

Commentaire [YLF15]: Will be updated

Commentaire [j16]: CSPCWG: This is not the 'general' case, simply an example (S-4 B634.1 refers). Also, the paper NM is not a sound reason as usually a paper chart NM takes a similar time to prepare as a P NM.
Chairman: agree

Commentaire [j17]: CSPCWG: Repeat the wording used in the T NM section.

Commentaire [YLF18]: TSMAD: Experience has shown that large updates can cause the ECDIS processing issues and in particular inordinately long loading times. It should be made clear that producing a NE may be the better option in some cases.
Chairman: this advice will be inserted

Commentaire [j19]: CSPCWG: This may be the current situation but what we should be seeking is to derive both the paper chart P NM and ENC update in the same process when new source information is assessed. As worded, this could imply a parallel and independent process. The danger of this is that a) there is a greater risk of introducing inconsistency in the outputs for paper and ENC and b) potential duplication of effort by assessing data twice.
Chairman: text amended for clarification and new point 10 added "10. Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper notice."

objects. An ENC update or a new edition of the ENC cell can then be issued at a later date when the HO can carry out full encoding of the changes. The period of time will depend on the following:

- the time needed by HO to undertake the full encoding with relevant objects
- the time needed to obtain confirmation of details
- the date at which the real world situation is stabilized and any forecast changes have been completed.

5. Source Information received may contain some navigationally significant elements that are simple to encode with the relevant objects in a timely manner. In these instances these elements may be encoded with the relevant objects provided that they reflect the 'real world' situation after the ENC update is made available to the user. However, if the changes are subject to continual change these objects should be amended as a consequence and will represent additional work for the HO. In such cases, the ENC update should also warn users that the situation is subject to change. For temporary information, see part A.

6. Use of DATSTA – DATEND: see part A, §6.

7. Use of INFORM: see part A, §7.

8. Diagrams are sometimes very useful to the mariner, e.g. for indicating changes to complex routeing measures or the introduction of new ones. A picture file may be referenced using the attribute PICREP in such cases. As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

9. ENC updates issued for Preliminary information should be managed and reviewed regularly. For example, further source information may have been acquired requiring a further ENC update, ~~this~~ which may add, modify or cancel information previously promulgated.

   Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper ~~notice~~NM.

GUIDELINES FOR TYPICAL CASES

a. Traffic separation schemes

   Encoding bulletin E25 – April 2009 and following versions should be applied. For the use of the attributes DATSTA end DATEND, see also, part A, §6.

b. Complex information within an area of change (e.g. works in progress)

   A CTNARE object is created to cover the area. Information is provided in either INFORM, e.g. under construction, or TXTDSC when it is necessary to give more detailed information. If sufficiently detailed information is available, then navigationally significant information such as navigational aids, fairways, regulated area, etc. can be created or modified within the CTNARE if time permits.

   As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

   Alternatively and if considered appropriate a RESARE – "entry prohibited area" object can be used instead the CTNARE object.

c. Simple information which does not need an additional notification of caution

The relevant object and the appropriate attributes are encoded with any additional contextual information provided in INFORM or TXTDSC. In this case it is not necessary to use a CTNARE object. This could apply, for example, to submarine cables or pipelines being laid (CBLSUB, PIPSOL) or area under reclamation (LNDARE with CONDTN = 3 "under reclamation"). If necessary the encoding should reflect, if appropriate, that positions are approximate.

d. Depths less than those charted within a defined area

If the depths values and their positions are known, a SOUNDG object(s) may be created or modified. Any affected depth contours and depths areas should also be amended as necessary. The source of the information should be encoded using the attribute SORIND. However, HO should carefully consider the time needed to update ENC depth information and the complexity of changes to the topology that may be required. The encoding of amended SOUNDG, DEPARE and associated objects could be inappropriate for promulgating this navigationally significant information within acceptable time scales.

In this case a CNTARE is the preferred option. In such cases, only the most significant amendments to depth information should be provided in the attribute INFORM or TXTDSC. This method should also be used if the depth values and/or the exact positions are unknown, or if the HO only has information relating to a limited number of depths values.

Comments from JETWG

-------- Message original --------
Sujet : RE: news from EUWG to JTEWG
Date : Wed, 26 Aug 2009 17:34:54 +0200
De : Stig Osaland <Stig.Osaland@ecc.no>
Pour : 'Yves Le Franc' <yves.le.franc@shom.fr>
Références : <098340377DE7FE4A9AE3A0DDF43930D482922E@HMAL03.business.ukho.gov.uk><4A706279.7070509@shom.fr><C551269BCDFBF943B7A0712514106F541041EFD1C3@eccmx.ecc.as><4A818FC5.4020108@shom.fr><C551269BCDFBF943B7A0712514106F541041EFD1E2@eccmx.ecc.as><4A953619.2090304@shom.fr>

Dear Yves,

Thank you for the email. I agree with you when you haven't identified a need for the use of the cell header.
The reason I asked is that we sometimes get the question "how can I see that it is a T and P message".

Best regards,

Stig

-----Original Message-----
From: Yves Le Franc [mailto:yves.le.franc@shom.fr]
Sent: 26. august 2009 15:18
To: Stig Osaland
Cc: Coombes, Richard; uguen
Subject: Re: news from EUWG to JTEWG

Dear Stig,

Thanks for you reply. The EUWG hasn't identified a need for the use of

the cell header. ER corresponding to T and P NM should be "normal" ER expect that HOs should manage them internally. For example, in part A, §8 it is stated :

8. ENC updates issued for temporary information should be carefully managed and reviewed regularly to consider whether further action is necessary. New information may have been received that necessitates the issuing of a new update to modify or cancel the previous one.

Do you have a precise idea of a need for use the ER cell header?

Best regards

Yves

Stig Osaland a écrit :
> Dear Yves,
>
> Thanks again for sending me this document. I think this is a good and useful document.
> Just a question, when the ENC update file has T or P notices included, that will not be marked in the cell header?
>
> Have a nice weekend!
>
> Best regards,
>
> Stig
>
>
>
>
> -----Original Message-----
> From: Yves Le Franc [mailto:yves.le.franc@shom.fr]
> Sent: 11. august 2009 17:36
> To: Stig Osaland
> Subject: Re: news from EUWG to JTEWG
>
> Dear Stig,
> I think that it is not necessary to forward the document to PRIMAR member nations. I suggest that we can consider that PRIMAR members are involved in EUWG works through the EUWG membership (attached and available on IHO/EUWG site) and that they have delegated technical aspects to TEWG (or JTEWG). Note that the EUWG guidelines should be submitted later to HSSC for endorsement at its next meeting. Please, let me know if you agree with this view?
>
> Best regards,
>
> Yves
>

AU and IC ENC comments

DRAFT GUIDELINES for ENCODING TEMPORARY and PRELIMINARY ENC UPDATES

INTRODUCTION

At its 20th meeting held in Brazil in November 2008, the Committee on Hydrographic Requirements for Information Systems (CHRIS – replaced by the Hydrographic Services and Standards Committee (HSSC) in January 2009) drew attention to inconsistencies in the promulgation and distribution of Temporary and Preliminary (T&P) Notices to Mariners (NMs) intended for use in ECDIS. It was identified that:

- about half of all ENC Producer States promulgate the equivalent of Temporary and/or Preliminary ~~notices~~ NMs via ENC updates, whereas the other half invite mariners to refer to Notices to Mariners booklets or websites;
- not all T&P ~~notices~~ NMs intended for ENCs are in English;
- translation of T~~and~~&P ~~notices~~ NMs intended for paper charts into ENC updates is sometimes difficult and may introduce an additional time delay for the distribution of safety ~~significant~~ critical information;
- it is very difficult for ~~the~~ ENC users to comprehend the T~~and~~&P ~~notices~~ NM network and get rapid and seamless information from one region to the other.

The ~~Committee~~ CHRIS agreed that the situation has implications for safety of navigation and consistency of ENC services and therefore requires urgent study and resolution. As a result, the ~~Committee~~ CHRIS decided to form a temporary Working Group (ENC Updating Working Group - EUWG) tasked with developing contemporary guidance on standardised processes for the delivery and implementation of updates to ENCs. More specifically the EUWG was asked to develop and propose a pragmatic approach to overcome any current shortcomings in the updating mechanisms for T&P ~~notices~~ NMs in ENCs.

~~The present~~This document is the result of the work of the EUWG. It has been developed through an iterative process of correspondence with all the members. It provides high level guidance for the ~~promulgate~~ promulgation of the equivalent of paper chart Temporary and/or Preliminary ~~notices~~ NMs via ENC updates (ER application profile). Through a set of recommendations, it ~~gives~~ provides keys to ~~perform~~ compile the appropriate ENC updates. The guidance is in accordance with the current IHO standards (S-57 Edition 3.1). It allows for some latitude in its application and is dependant on the assessment of each particular case~~. It~~, and as such is ~~also down to~~reliant on the judgement of each producer.

Mis en forme : Justifié

Commentaire [j20]: A decision is required as to whether we abbreviate T and P separately or together, as has been done in this paragraph. Further AU changes in this section relate to the combined abbreviation.
chairman: see also CSPCWG comment (better to explain each abbreviation). Read "Temporary (T) and Preliminary (P) Notices to Mariners (NMs)".

Mis en forme : Justifié, Avec puces + Niveau : 1 + Alignement : 0.25" + Tabulation après : 0.5" + Retrait : 0.5"

Mis en forme : Justifié

Mis en forme : Justifié

Commentaire [j21]: As an alternative to this proposed amendment, you may wish to move the footnote on the next page to here.
Chairman: agree this amendment. No foot note here as Introduction should summarise without such detail.

PART A - Temporary Notices to Mariners

GENERAL

1. Temporary Notices to Mariners, (T) NMs, for paper chart are defined in S-4, Section B-600, in particular ~~in~~ § B-601.8 and B-633 (under revision by CSPCWG). A (T) NM promulgates navigationally significant information that will remain valid only for a limited period of time.

   For the paper chart, the convention is for the mariner to insert the update on the chart in pencil, and erase it when the (T) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER application profile[2]). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the ~~notice~~ NM without additional workload for the mariner~~s~~.

   Hydrographic Offices (HOs) should promulgate temporary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC in accordance with IMO requirements. This service ~~also offered corresponds~~~~would~~ corresponds to the service that (T) NMs offer to the paper chart user.

2. ER encoding for an ENC and (T) NM for the paper chart are two completely different communication processes for promulgating information to the mariner~~s~~. Since these processes are different, it is recommended that ENC ~~Updates~~ updates be derived from the source information rather than the paper chart (T) NM as often the (T) NM for paper chart does not provide enough detail to perform the relevant ENC ~~Update~~update.

3. If possible the information should be encoded with the relevant S-57 objects. However, HOs should consider the following:

   - An ENC update should not be initiated if the information will no longer be valid by the time it is received by the mariner; this will depend upon the timescales relating to a producer nations ENC ~~Updating~~ updating regime. Shorter time periods may be covered by Radio Navigational Warnings (RNW). If possible, the ENC ~~Update~~ update should include an indication of how long the temporary change will remain in force.

   - ~~An~~ If it is unlikely that the ~~Hydrographic office~~HO will be notified when a temporary change will revert to its original charted state, the ~~Hydrographic office~~HO should consider an alternative method such as a general note or by issuing a permanent ENC update explaining, for example, that the aids to navigation within an area are reported to be unreliable.

   ~~ENC update should not be issued if it is unlikely that the hydrographic office will be notified when the temporary nature of the change will revert its original charted state. Without this notification the information issued by the ENC update cannot be cancelled at the appropriate time. If possible, an alternative method should be used, such as a general note or by issuing a permanent ENC update explaining, for example, that the aids to navigation within an area are reported to be unreliable.~~

   This implies that HOs should consider constraints of time when identifying the encoding method. Time consuming and unnecessarily complex methods of encoding should be avoided.

4. The overuse of CTNARE objects (especially CTNARE ~~, primitive~~of type area) for temporary information should be avoided. The CTNARE object ~~is~~ should only be used when it is relevant for the ~~object~~ situation and/or when a particular change needs a special warning. CTNARE may be used when the relevant objects cannot be encoded, e.g. information cannot be displayed clearly or

[2] The ER application profile only applies to ENC update cell files. S-57 Appendix B.1 of the ENC Product Specifications refers

Commentaire [YLF22]: Will be updated

Commentaire [YLF23]: chairman: I am not sure that we can simply say that IMO requirements implies precisely that "Hydrographic Offices (HOs) should promulgate temporary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC". IMO refers to IHO standards and HOs products and practices. In the case of T and P NMs, they are inappropriate and it is why EUWG is setting up guidelines. This sort of words will be useful later to promote by a CL the guidelines and to highlight the requirement to produce ER corresponding to T and P NM.

Commentaire [j24]: Need to be consistent with the use of upper/lower case for update/Update in the document. Until now it has been "update" (lower case). Further changes in this document comply to lower case.

Commentaire [j25]: While I understand the meaning of this statement, I do not like the use of the word "permanent" in relation to ENC updates. There is no distinction in the standard between any types of updates, they are just updates. I would prefer to see the word deleted in this case. Chairman: agree

Mise en forme : Puces et numéros

cannot be easily ~~charted,~~promulgated due to time constraints, and/or ~~does not imply~~implies caution.

5. To correctly encode an ENC update the source information is useful in determining which elements of the update are reliable, which are permanent and which are temporary. The STATUS attribute value 7 (temporary) should only be used in an update when it is certain that the status of an object is confirmed as temporary.

6. Use of DATSTA ~~–~~ DATEND:

   The earliest date on which an object will be present (DATSTA) and the latest date on which an object will be present (DATEND) must only be encoded when known. When theses dates are encoded for navigational aids, DATSTA and DATEND must be populated on each component of the aid (for FOGSIG, RETRFL and TOPMAR, *refer to S-57 Edition 3.1 Supplement No. 2 - June 2009*).

   The ENC update should be issued as close as possible to the earliest date of the change (DATSTA), ~~except if~~unless it is appropriate to ~~give~~ provide the information well in advance. An object no longer present should be removed by issuing a further update as soon as possible after the return to the original charted state~~expiry date~~ (DATEND).

   When an ENC update promulgates information well in advance and uses DATSTA and DATEND, a CTNARE object may be used in order to inform mariners that temporal information exists at some future point in time. For new or amended routeing measures, see ~~encoding~~ ENC Encoding ~~bulletin~~ Bulletin number 25.

   ~~Note that~~NOTE: some older legacy ECDIS's ~~systems~~ may not have the functionality to manage temporal information correctly or have implemented it improperly. Some ENC producers may wish to include additional encoding to safeguard against this. For example, use a CTNARE describing the changes and timings.

7. The INFORM attribute should be used to ~~give~~ provide supplementary or contextual information when encoding temporary (or preliminary) information. When the text is too long to be encoded with INFORM (the INFORM/NINFOM text should not be over 300 characters - *see S-57 MAINTENANCE DOCUMENT, clarification 8.Cl.1*), the attribute TXTDSC ~~is~~ should be used. In these cases the INFORM attribute could be used to highlight the existence of the TXTDSC file. Encoders using INFORM/TXTDSC to provide positional information must express the coordinate values in WGS 84 and in accordance with S-4 §B-131. If it is deemed necessary a picture file (PICREP) ~~can~~ may be ~~attributed~~added. If the relevant object class (e.g. CTNARE) does not have PICREP as an allowable attribute then this ~~can~~ may be attributed against a M_NPUB object which shares the same geometry as the relevant object.

8. ENC updates issued for temporary information should be carefully managed and reviewed regularly to consider whether further action is necessary. New information may have been received that necessitates the issuing of a new update to modify or cancel the previous one.

   Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper chart ~~notice~~NM. HOs should make it easy to recover the original chart conditions before the temporary changes came into effect.

Commentaire [j26]: Why would you use CTNARE if the update does not imply caution? You would only use CTNARE if the update implied that caution is required.

Commentaire [R A27]: In order to limit the overuse of CTNARE and the splitting of the information over multiple object classes (CTNARE and M_NPUB) due to the restriction of allowable attributes, I think we should consider the creation of a new object class/classes (NEWOBJ as outlined in S57 3.1.1) for the encoding of temporary or preliminary changes which could be symbolised in the same manner as a mariners objects are.
Chaiman : A foot note related to New Object will be added.The main thing is that the situation will unblock even if our Guidelines isn't perfect (but perfection is expensive!). I agree that "New Objects" to replace some CTNARE must be quickly specified to reduce the problem of the too many numerous alarms for users. This should be done without waiting for S101. My feeling is that this subject, already launched within TSMAD, should be quickly adresses. It isn't a problem only related to preliminary and temporary ENC updates ("work in progress" "depth information" exists also on ENC EN). It is why I have introduce this point in the EUWG chair report to HSSC1 (section "Any Other Items of Note").

Commentaire [j28]: AU agrees with UK comment below.
Chairman: agree

Commentaire [R A29]: Should this be in part B as changes new and amended routing measures are usually the subject of a Preliminary N To M

Commentaire [j30]: AU agrees with UK comment below and recommends this sentence be deleted.

Commentaire [R A31]: This is an example of 'double encoding' is this something we want to encourage ?
Chairman : "double encoding" refers to the use of DATSTA and DATEND.

GUIDELINES FOR TYPICAL CASES

a. Individual new physical objects (e.g. wreck, buoy) with no associated explicit or implicit area associated (e.g. restricted area):

Encode the relevant S-57 object.
In this instance a CTNARE would not normally be used.

b. Individual new physical objects with an associated explicit area around it:

Encode the relevant S-57 area object (e.g. RESARE). The relevant object is created for the new physical object. However, when the area is an "entry prohibited area" or a CTNARE the new physical object may be omitted to simplify encoding ~~except if conspicuous, e.g.~~unless it is navigationally significant.

c. Individual new physical object with a notification of caution, e.g. "Mariners are advised to navigate with caution…":

Encode the relevant S-57 object. Additional clarification and advice ~~can~~may, if required, be provided in INFORM or TXTDSC. Exceptionally, a CTNARE may be created to highlight the caution if considered necessary.

d. Obstructions (including wrecks) reported to exist within an area:

Encode an OBSTRN area or WRECKS area.

e. New simple area object (military practice area, dredged area):

Encode the relevant S-57 area object.
Supplementary information is provided in INFORM or TXTDSC.

Normally, a CTNARE is not added.

f. Complex information within an area (e.g. works in progress where the changes are numerous or involve complex changes to the topology):

Encode the area object. It should be encoded with the relevant S-57 object or, if more suitable or by default, a CTNARE. Supplementary or contextual information is provided in INFORM or TXTDSC. When the available information is sufficiently detailed, navigationally significant objects (e.g. navigational aids, obstructions) are created or modified within the area. When the available information does not permit this, a CTNARE defining the area is preferred.

If the information exists and time permits, less navigationally significant objects may be added or modified.

g. Changes to an existing object (e.g. navigational aid):

In these instances it is usually only necessary to change the attributes values. A CNTARE may be used to warn the mariner~~s~~ if it is considered necessary.

h. Buoy temporarily moved:

When a buoy is temporarily moved, then it, and any associated objects, ~~is~~ are "moved" to the new position using the delete and insert update instructions, ~~then~~ and the STATUS attribute value 7 (temporary) is used. Alternative encodings are possible, for example, if the move is for a fixed

Mis en forme : Justifié

Commentaire [YLF32]: Chairman: agree this improvement.

Commentaire [YLF33]: Chairman: an object can be moved by using "modify". This instruction "modify" exists (cf. S-57 – Appendix B.1, §6.4) and can be used to modify the position of an object. I seems that some system (CARIS) doesn't use it but for example at SHOM we use it to move objects.

period of time. In these cases the object, and any associated components, can be created in the temporary position with DATEND attributed to it and populated with the date corresponding to the end of the fixed period of time. The currently charted object, and any associated components, can be attributed with DATSTA, also populated with the date corresponding to the end of the fixed period of time.~~In these cases the object, and any associated components, can be created in the temporary position with DATEND (date of the end of fixed period of time) attributed to it. The currently charted object, and any associated components, can be attributed with DATSTA (date of the end of fixed period of time).~~ A Cautionary Area may, if considered necessary, be added. Data producers may wish to consider the ~~note~~ NOTE in section 6 under the "General" heading above.

i. Light temporarily extinguished:

The STATUS attribute of ~~a~~ the LIGHTS object is encoded with the values 11 (extinguished) and 7 (temporary).

j. Change to a maintained depth in a dredged area:

When information is received from an official or recognised survey authority relating to a dredged area where the maintained depth has changed, the attribute value of DRVAL1 for the DRGARE object should be changed to the value provided by the survey.

When a depth within a dredged area is reported shoaler than the stated maintained depth, then a CTNARE is created covering the area concerned. The depth information can be provided in the CTNARE attribute INFORM or by adding a SOUNDG object with the ~~appropriate~~ attribute~~s~~ ~~VALSOU and~~ EXPSOU~~. VALSOU should be attributed with the sounding value and EXPSOU~~ set to 2 (shoaler than the range of depth of the surrounding depth area).

When a depth within a dredged area is reported shoaler than the stated maintained depth, then a CTNARE should be created covering the area concerned. The depth information is provided in the CTNARE attribute INFORM. Alternatively a SOUNDG object with the attribute EXPSOU set to 2 (shoaler than the range of depth of the surrounding depth area) may be created.

Commentaire [j34]: VALSOU is not an attribute of SOUNDG as the depth is contained in the 3-dimensional array.
Chairman: right.

Commentaire [j35]: If a sounding is created to indicate the reported depth, what is going to go in INFORM/TXTDSC for the CTNARE? Suggest that encoding a SOUNDG be an alternative to encoding a CTNARE, not in addition to. See alternative wording below original paragraph.
Chairman: this text has been adjusted from previous AU and JEP comments (see letter 04/2009 – annex A – Part A - §8.1). I understood that a CTNARE is always needed and SOUNDG is optional. It is also more in accordance with S-4 B-414.5.The text could be amended as :"…then a CTNARE is created covering the shoaler depth area." for clarification.

Part B - Preliminary Notices to Mariners

GENERAL

1. Preliminary Notices to Mariners, (P) NMs, for paper chart are defined in S-4, Section B-600, in particular ~~in~~ § B-634 (under revision by CSPCWG). A (P) NM promulgates navigationally significant information early to the mariner generally when a paper chart-updating NM or a paper chart new edition can not be issued in due time.

   For paper chart, the convention is for the mariner to insert the update on ~~his~~ the chart in pencil, and erase it when the (P) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER application profile). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the ~~notice~~ NM without additional workload for the mariner~~s~~.

   HOs should promulgate ~~Preliminary~~ preliminary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC in accordance with IMO requirements. This method of delivery corresponds to the service that (P) NMs offer to the paper chart~~s~~ user.

2. ER encoding for ENC and (P) NM for paper chart are two completely different communication processes for promulgating information to the mariner. For example, there are instances when the paper chart needs updating using a NM block correction or by issuing a new edition. This is normally due to the receipt of extensive new information, e.g. new survey. The lead time for an NM block correction or a new edition can be lengthy, sometimes several months. In these cases a (P) NM may be issued as an interim measure. The ENC updating mechanisms are more flexible and may allow for ENC updates to be issued in quicker time.

   There may be other instances, when new information is received, where it is not be possible to correctly update both the ENC and paper chart, e.g. not all the information required to produce a chart-updating NM is received by the HO in the first notification, for instance notification of works in progress or projected. In these cases it is still necessary to provide notification of navigationally significant changes to the mariner in a timely manner.

   Since the paper chart and ENC processes are different, it is recommended that ENC updates be derived from the source information rather than from the paper chart (P) NM. It is often the case that the paper chart (P) NM does not provide enough detail to encode the ENC update exactly as it should be.

3. Simple or more complex encoding methods are possible but HOs should consider carefully which encoding method is appropriate when creating an ENC update with due consideration for time.

4. Often, information received is too complex, extensive and/or imprecise to be encoded with the relevant S-57 objects. In these instances the use of the CTNARE object and its attribute INFORM is preferred to give a précis of the overall changes together with detailed navigationally significant information. For complex or extensive changes the CTNARE should have an associated TXTDSC file containing precise details of the preliminary information. See also Part A, § 7 above. If the information is less precise then the INFORM attribute ~~can~~ should be used to inform users of this fact.

   It is noted that the mariner, if it is considered necessary, has the facility in the ECDIS to add "Mariner Objects" and annotate them. These can be saved in the SENC based on information provided in textual form by the TXTDSC or INFORM attributes. It is envisaged that these objects would be created at the "Route Planning" stage and act as a prompt during the "Route Monitoring" phase.

Commentaire [YLF36]: Will be updated

Commentaire [YLF37]: Chairman: see my comment in part A

Commentaire [YLF38]: Chairman: paragraph amended for clarification and to take into account CSPWG comment.

When information is issued as advance notification for an ENC it is necessary to provide as soon as possible to the mariner the final and full charted information encoded with the relevant S-57 objects. An ENC update or a new edition of the ENC cell ~~can then~~should therefore be issued at a later date when the HO can carry out full encoding of the changes. The period of time will depend on the following:

- the time needed by the HO to undertake the full encoding with relevant objects;
- the time needed to obtain confirmation of details; and
- the date at which the real world situation is stabilized and any forecast changes have been completed.
-

5. Source Information received may contain some navigationally significant elements that are simple to encode with the relevant objects in a timely manner. In these instances these elements may be encoded with the relevant objects provided that they reflect the 'real world' situation after the ENC update is made available to the user. However, if the changes are subject to continual change these objects should be amended as a consequence and will represent additional work for the HO. In such cases, the ENC update should also warn users that the situation is subject to change. For temporary information, see part A.

6. Use of DATSTA – DATEND: see part A, § 6.

7. Use of INFORM: see part A, § 7.

8. Diagrams are sometimes very useful to the mariner, e.g. for indicating changes to complex routeing measures or the introduction of new ones. A picture file may be referenced using the attribute PICREP in such cases. As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

9. ENC updates issued for Preliminary information should be managed and reviewed regularly. For example further source information may have been acquired requiring a further ENC update~~, t~~. This may add, modify or cancel information previously promulgated.

   Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper notice.

Commentaire [j39]: In reference to UK and AU comments in part A §6, this would be a good place to insert the sentence relating to advance notification of new/changed routeing measures.
Chairman: agree

GUIDELINES FOR TYPICAL CASES

a. Traffic separation schemes:

Encoding bulletin E25 – April 2009 and following versions should be applied. For the use of the attributes DATSTA end DATEND, see also, part A, § 6.

b. Complex information within an area of change (e.g. works in progress):

A CTNARE object is created to cover the area. Information is provided in either INFORM, e.g. under construction, or TXTDSC when it is necessary to give more detailed information. If sufficiently detailed information is available, then navigationally significant information such as navigational aids, fairways, regulated areas, etc. can be created or modified within the CTNARE if time permits.

As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

Alternatively and if considered appropriate a RESARE – "entry prohibited area" object can be used instead the CTNARE object.

c. Simple information which does not need an additional notification of caution:

The relevant object(s) and the appropriate attributes are encoded with any additional contextual information provided in INFORM or TXTDSC. In this case it is not necessary to use a CTNARE object. This could apply, for example, to submarine cables or pipelines being laid (CBLSUB, PIPSOL) or area under reclamation (LNDARE with CONDTN = 3 "under reclamation"). If necessary the encoding should reflect, if appropriate, that positions are approximate.

d. Depths less than those charted within a defined area:

If the depths values and their positions are known, a SOUNDG object(s) may be created or modified. Any affected depth contours and depths areas should also be amended as necessary. The source of the information should be encoded using the attribute SORIND. However, HOs should carefully consider the time needed to update ENC depth information and the complexity of changes to the topology that may be required. The encoding of amended SOUNDG, DEPARE and associated objects could be inappropriate for promulgating this navigationally significant information within acceptable time scales.

In this case a CNTARE is the preferred option. In such cases, only the most significant amendments to depth information should be provided in the attribute INFORM or TXTDSC. This method should also be used if the depth values and/or the exact positions are unknown, or if the HO only has information relating to a limited number of depths values.

Guidelines for encoding ENC T&P Notices v0.3 – 1st September 2009

DRAFT GUIDELINES for ENCODING TEMPORARY and PRELIMINARY ENC UPDATES

INTRODUCTION

At its 20th meeting held in Brazil in November 2008, the Committee on Hydrographic Requirements for Information Systems (CHRIS – replaced by the Hydrographic Services and Standards Committee (HSSC) in January 2009) drew attention to inconsistencies in the promulgation and distribution of Temporary (T) and Preliminary (P) Notices to Mariners (NMs) intended for use in ECDIS. It was identified that:

Commentaire [YLF40]: Chairman: amended following comments by AU & CSPCWG.

- about half of all ENC Producer States promulgate the equivalent of paper chart (T) and/or (P) NMs via ENC updates, whereas the other half invite mariners to refer to Notices to Mariners booklets or websites;
- not all paper chart (T) and (P) NMs which relate also to ENCs are in English;
- translation of (T) and (P) NMs intended for paper charts into ENC updates is sometimes difficult and may introduce an additional time delay for the distribution of navigationally significant information;
- it is very difficult for ENC users to comprehend the (T) and (P) NM network and get rapid and seamless information from one region to the other.

The CHRIS agreed that the situation has implications for safety of navigation and consistency between ENC services and therefore requires urgent study and resolution. As a result, the CHRIS decided to form a temporary Working Group (ENC Updating Working Group - EUWG) tasked with developing contemporary guidance on standardised processes for the delivery and implementation of updates to ENCs. More specifically the EUWG was asked to develop and propose a pragmatic approach to overcome any current shortcomings in the updating mechanisms for (T) and (P) NMs in ENCs.

This document is the result of the work of the EUWG. It has been developed through an iterative process of correspondence with all the members. It provides high level guidance for the promulgation of the equivalent of paper chart (T) and/or (P) NMs via ENC updates (ER application profile). Through a set of recommendations, it provides keys to compile the appropriate ENC updates. The guidance is in accordance with the current IHO standards (S-57 Edition 3.1). It allows for some latitude in its application and is dependant on the assessment of each particular case, and as such is reliant on the judgement of each producer.

PART A - Temporary Notices to Mariners

GENERAL

1. Temporary Notices to Mariners, (T) NMs, for paper charts are defined in S-4, Section B-600, in particular § B-633 (under development by CSPCWG). A (T) NM promulgates navigationally significant information that will remain valid only for a limited period of time.

   For the paper chart, the convention is for the mariner to insert the update on the chart in pencil, and erase it when the (T) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER application profile[3]). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the NM without additional workload for the mariner.

   Hydrographic Offices (HOs) should promulgate temporary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC. This service corresponds to the service that (T) NMs offer to the paper chart user.

2. ER encoding for an ENC and (T) NM for the paper chart are two completely different communication processes for promulgating information to the mariner. Since these processes are different (but not supposed to be independent), and the products to which they apply are also different, it is recommended that ENC updates be derived from the source information rather than the paper chart (T) NM. Often the (T) NM for paper chart does not provide enough detail to perform the relevant ENC update.

3. If possible the information should be encoded with the relevant S-57 objects. However, HOs should consider the following:

   - An ENC update must not be initiated if the information will no longer be valid by the time it is received by the mariner; this will depend upon the timescales relating to the producer nation's ENC updating regime. Shorter time periods may be covered by Radio Navigational Warnings (RNW). If known, the ENC update should include an indication of how long the temporary change will remain in force.

   - If it is unlikely that the HO will be notified when a temporary change will revert to its original charted state, the HO should consider an alternative method such as a general note or by issuing an ENC update explaining, for example, that the aids to navigation within an area are reported to be unreliable.

   It is important that HOs should consider constraints of time when identifying the encoding method. Time consuming and unnecessarily complex methods of encoding should be avoided.

4. The overuse of CTNARE objects (especially CTNARE of type area) for temporary information should be avoided. The CTNARE object is used when it is relevant for the situation and/or when a particular change needs a special warning. CTNARE[4] may be used when the relevant objects cannot be encoded, e.g. information cannot be displayed clearly or cannot be easily promulgated due to time constraints.

5. To correctly encode an ENC update the source information is essential in determining which elements of the update are reliable, which are permanent and which are temporary. The STATUS attribute value 7 (temporary) should only be used in an update when it is certain that the status of an object is confirmed as temporary.

[3] The ER application profile only applies to ENC update cell files. S-57 Appendix B.1 of the ENC Product Specifications refers

[4] Some "New Object" may be created in the future (see S-57 supplement no. 2 – June 2009). The use of such objects might be more appropriate than the use of CTNARE in this case or in others

Commentaire [YLF41]: Chairman: amended following comments by CSPCWG.

Commentaire [YLF42]: Chairman: amended following comments by CSPCWG.

Commentaire [YLF43]: Chairman: amended following comments by CSPCWG.

Commentaire [YLF44]: Chairman: Foot note added following comments by IC-ENC.

Commentaire [YLF45]: Chairman: amended following comments by CSPCWG.

6. Use of DATSTA – DATEND:

   The earliest date on which an object will be present (DATSTA) and the latest date on which an object will be present (DATEND) must only be encoded when known. When theses dates are encoded for navigational aids, DATSTA and DATEND must be populated on each component of the aid (for FOGSIG, RETRFL and TOPMAR, *refer to S-57 Edition 3.1 Supplement No. 2 - June 2009*).

   The ENC update should be issued as close as possible to the earliest date of the change (DATSTA), unless it is appropriate to provide the information well in advance. An object no longer present should be removed by issuing a further update as soon as possible after the return to the original charted state (DATEND). The timing of its issue will depend upon the timescales relating to the producer nation's ENC Updating regime.

   When an ENC update promulgates information well in advance and uses DATSTA and DATEND, a CTNARE object may be used in order to inform mariners that temporal information exists at some future point in time.

   NOTE: some older legacy ECDIS's may not have the functionality to manage temporal information correctly or may have implemented it incorrectly. Some ENC producers may wish to include additional encoding to safeguard against this. For example, insert a CTNARE describing the changes and timings.

7. The INFORM attribute should be used to provide supplementary or contextual information when encoding temporary (or preliminary) information. When the text is too long to be encoded with INFORM (the INFORM/NINFOM text should not be over 300 characters - *see S-57 MAINTENANCE DOCUMENT, clarification 8.Cl.1*), the attribute TXTDSC should be used. In these cases the INFORM attribute could be used to highlight the existence of the TXTDSC file. Encoders using INFORM/TXTDSC to provide positional information must express the coordinate values in WGS 84 and in accordance with S-4 §B-131. If it is deemed necessary a picture file (PICREP) may be added. If the relevant object class (e.g. CTNARE) does not have PICREP as an allowable attribute then this may be attributed against a M_NPUB object which shares the same geometry as the relevant object.

8. ENC updates issued for temporary information should be carefully managed and reviewed regularly to consider whether further action is necessary. New information may have been received that necessitates the issuing of a new update to modify or cancel the previous one. HOs should make it easy to recover the original chart conditions before the temporary changes came into effect.

9. Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper chart NM.

Commentaire [YLF46]: Chairman: amended following comments by CSPCWG

Commentaire [YLF47]: Following IC-ENC comment, the reference to changes to TSS is moved to Part B.

Commentaire [YLF48]: Chairman: amended following comments by CSPCWG

GUIDELINES FOR TYPICAL CASES

a. Individual new physical objects (e.g. wreck, buoy) with no associated explicit or implicit area associated (e.g. restricted area):

   Encode the relevant S-57 object.
   In this instance a CTNARE would not normally be used.

b. Individual new physical objects with an associated explicit area around it:

   Encode the relevant S-57 area object (e.g. RESARE). The relevant object is created for the new physical object. However, when the area is an "entry prohibited area" or a CTNARE the new physical object may be omitted to simplify encoding unless it is navigationally significant.

Commentaire [YLF49]: Chairman: amended following comments by CSPCWG and TSMAD

c. Individual new physical object with a notification of caution, e.g. "Mariners are advised to navigate with caution…":

   Encode the relevant S-57 object. Additional clarification and advice may, if required, be provided in INFORM or TXTDSC. Exceptionally, a CTNARE may be created to highlight the caution if considered necessary.

d. Obstructions (including wrecks) reported to exist within an area:

   Encode an OBSTRN area or WRECKS area.

e. New simple area object (military practice area, dredged area):

   Encode the relevant S-57 area object.
   Supplementary information is provided in INFORM or TXTDSC.
   Normally, a CTNARE is not added.

f. Complex information within an area (e.g. works in progress where the changes are numerous or involve complex changes to the topology):

   Encode the area object. It should be encoded with the relevant S-57 object or, if more suitable or by default, a CTNARE. Supplementary or contextual information is provided in INFORM or TXTDSC. When the available information is sufficiently detailed, navigationally significant objects (e.g. navigational aids, obstructions) are created or modified within the area. When the available information does not permit this, a CTNARE defining the area is preferred.

g. Changes to an existing object (e.g. navigational aid):

   In these instances it is usually only necessary to change the attributes values. A CNTARE may be used to warn the mariner if it is considered necessary.

h. Buoy temporarily moved:

   When a buoy is temporarily moved, then it, and any associated objects, are "moved" to the new position and the STATUS attribute value 7 (temporary) is used. Alternative encodings are possible, for example, if the move is for a fixed period of time. In these cases the object, and any associated components, can be created in the temporary position with DATEND attributed to it and populated with the date corresponding to the end of the fixed period of time. The currently charted object, and any associated components, can be attributed with DATSTA populated also with the date corresponding to the end of the fixed period of time. A Cautionary Area may, if considered necessary, be added. Data producers may wish to consider the NOTE in section 6 under the "General" heading above.

Commentaire [YLF50]: amended following comments by BHI and AU

i. Light temporarily extinguished:

The STATUS attribute of the LIGHTS object is encoded with the values 11 (extinguished) and 7 (temporary).

j. Change to a maintained depth in a dredged area:

When information is received from an official or recognised survey authority relating to a dredged area where the dredged depth has changed, the attribute value of DRVAL1 for the DRGARE object should be changed to the value provided by the survey.

When a depth within a dredged area is reported shoaler than the stated maintained depth, then a CTNARE is created covering the shoaler depth area concerned. The depth information can be provided in the CTNARE attribute INFORM or by adding a SOUNDG object with the attribute EXPSOU attributed with the value 2 (shoaler than the range of depth of the surrounding depth area). See also S-4, § B-414.5.

Commentaire [YLF51]: Chairman: amended following comments by CSPCWG

Commentaire [YLF52]: Chairman: amended following comments by AU

Commentaire [YLF53]: Chairman: amended following comments by AU

Part B - Preliminary Notices to Mariners

GENERAL

1. Preliminary Notices to Mariners, (P) NMs, for paper chart are defined in S-4, Section B-600, in particular § B-634 (under development by CSPCWG). A (P) NM promulgates navigationally significant information early to the mariner e.g. when a paper chart new edition cannot be issued in due time.

   For the paper chart, the convention is for the mariner to insert the update on the chart in pencil, and erase it when the (P) NM is cancelled.

   S-57 provides mechanisms which allow ENCs to be automatically updated (ER application profile). This allows the affected ENC(s) to be continually updated in a timely manner for the duration of the NM without additional workload for the mariner.

   HOs should promulgate preliminary navigationally significant information by ENC update to provide the ECDIS user with an updated SENC. This method of delivery corresponds to the service that (P) NMs offer to the paper chart user.

2. ER encoding for ENC and (P) NM for paper chart are two completely different communication processes for promulgating information to the mariner.

   For example, there are instances when the paper chart needs updating using a NM block (also known as a chartlet or patch) or by issuing a new edition due to the complexity or volume of changes. This could clutter the paper chart unacceptably if amended by hand and/or overburden the chart corrector. The lead time for a NM block correction or a new edition can be lengthy, sometimes several months. In these cases a (P) NM may be issued as an interim measure. The ENC updating mechanisms are more flexible and may allow for ENC updates to be issued in quicker time. However, experience has shown that large updates can cause the ECDIS processing issues and in particular inordinately long loading times. Producing an ENC new edition may be the better option in some cases.

   There may be other instances, when new information is received, where it is not be possible to fully update both the ENC and paper chart promptly. For example, not all the information required to produce a chart-updating NM is received by the HO in the first notification (for instance notification of works in progress or projected) or extensive new information requires significant compilation work. In these cases it is still necessary to provide notification of navigationally significant changes to the mariner in a timely manner.

   Since the paper chart and ENC processes are different (but not supposed to be independent), and also the products to which they apply are different, it is recommended that ENC updates be derived from the source information rather than from the paper chart (P) NM. It is often the case that the paper chart (P) NM does not provide enough detail to encode the ENC update exactly as it should be.

3. Simple or more complex encoding methods are possible but it is important that HOs should consider carefully which encoding method is appropriate when creating an ENC update with due consideration for time.

4. Often, information received is too complex, extensive and/or imprecise to be encoded with the relevant S-57 objects. In these instances the use of the CTNARE object and its attribute INFORM is preferred to give a précis of the overall changes together with detailed navigationally significant information. For complex or extensive changes the CTNARE should have an associated TXTDSC file containing precise details of the preliminary information. See also Part A, § 7 above. If the information is less precise then the INFORM attribute should be used to inform users of this fact.

Commentaire [YLF54]: Chairman: amended following comments by TSMAD, CSPCWG and AU

Commentaire [YLF55]: Chairman: amended following comments by CSPCWG

It is noted that the mariner, if it is considered necessary, has the facility in the ECDIS to add "Mariner Objects" and annotate them. These can be saved in the SENC based on information provided in textual form by the TXTDSC or INFORM attributes. It is envisaged that these objects would be created at the "Route Planning" stage and act as a prompt during the "Route Monitoring" phase.

When information is issued as advance notification for an ENC it is necessary to provide as soon as possible to the mariner the final and full charted information encoded with the relevant S-57 objects. An ENC update or a new edition of the ENC cell should therefore be issued at a later date when the HO can carry out full encoding of the changes. The period of time will depend on the following:

- the time needed by the HO to undertake the full encoding with relevant objects;
- the time needed to obtain confirmation of details; and
- the date at which the real world situation is stabilized and any forecast changes have been completed.

5. Source Information received may contain some navigationally significant elements that are simple to encode with the relevant objects in a timely manner. In these instances these elements may be encoded with the relevant objects provided that they reflect the 'real world' situation after the ENC update is made available to the user. However, if the changes are subject to continual change these objects should be amended as a consequence and will represent additional work for the HO. In such cases, the ENC update should also warn users that the situation is subject to change. For temporary information, see part A.

6. Use of DATSTA – DATEND: see part A, § 6. For new or amended routeing measures, see ENC Encoding Bulletin number 25.

7. Use of INFORM: see part A, § 7.

8. Diagrams are sometimes very useful to the mariner, e.g. for indicating changes to complex routeing measures or the introduction of new ones. A picture file may be referenced using the attribute PICREP in such cases. As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

9. ENC updates issued for Preliminary information should be managed and reviewed regularly. For example further source information may have been acquired requiring a further ENC update. This may add, modify or cancel information previously promulgated.

10. Further verification is recommended to make sure that the encoded ENC update is consistent with the corresponding paper notice.

Commentaire [YLF56]: Chairman: amended following comments by IC-ENC and AU

GUIDELINES FOR TYPICAL CASES

a. Traffic separation schemes:

   Encoding bulletin E25 – April 2009 and following versions should be applied. For the use of the attributes DATSTA end DATEND, see also, part A, § 6.

b. Complex information within an area of change (e.g. works in progress):

   A CTNARE object is created to cover the area. Information is provided in either INFORM, e.g. under construction, or TXTDSC when it is necessary to give more detailed information. If sufficiently detailed information is available, then navigationally significant information such as navigational aids, fairways, regulated areas, etc. can be created or modified within the CTNARE if time permits.

   As the CTNARE object does not allow PICREP attribution, the picture file may be referenced by a M_NPUB object which shares the same geometry as the CTNARE.

   Alternatively and if considered appropriate a RESARE – "entry prohibited area" object can be used instead the CTNARE object.

c. Simple information which does not need an additional notification of caution:

   The relevant object(s) and the appropriate attributes are encoded with any additional contextual information provided in INFORM or TXTDSC. In this case it is not necessary to use a CTNARE object. This could apply, for example, to submarine cables or pipelines being laid (CBLSUB, PIPSOL) or area under reclamation (LNDARE with CONDTN = 3 "under reclamation"). If necessary the encoding should reflect, if appropriate, that positions are approximate.

d. Depths less than those charted within a defined area:

   If the depth values and their positions are known, SOUNDG objects may be created or modified. Any affected depth contours and depth areas should also be amended as necessary. The source of the information should be encoded using the attribute SORIND. However, HOs should carefully consider the time needed to update ENC depth information and the complexity of changes to the topology that may be required. The encoding of amended SOUNDG, DEPARE and associated objects could be inappropriate for promulgating this navigationally significant information within acceptable time scales. In this case a CNTARE is the preferred option. In such cases, only the most significant amendments to depth information should be provided in the attribute INFORM or TXTDSC. This method should also be used if the depth values and/or the exact positions are unknown, or if the HO only has information relating to a limited number of depth values.