

**12<sup>th</sup> CHRIS MEETING**  
**Valparaiso, Chile, 23-25 October 2000**

**IHO SESSION ON ENC UPDATING**  
**International Hydrographic Bureau, Monaco**  
**29 May 2000**

**SUMMARY OF DISCUSSIONS**

Attached:       Annex A: List of Acronyms  
                   Annex B: List of Documents  
                   Annex C: List of Participants  
                   Annex D: Agenda  
                   Annex E: Actions arising from the Mobile Workshop  
                   Annex F: Actions arising from this meeting

**1.       OPENING AND ADMINISTRATIVE ARRANGEMENTS**

The Session was opened by Rear Admiral Neil GUY (IHB Director), who provided a brief explanation of the purpose of the meeting and gave a summary of some of the issues dealt with at the previous meeting (workshop) on that matter held in Mobile (USA) on 3-4 May 1999. He explained that the 11th CHRIS meeting, held in November 1999, recommended that it was not necessary to form a new Updating Working Group. Updating issues should be dealt with by holding workshops periodically. He stated that this ENC Updating Session was organised by the IHB as a result of a decision of the 11<sup>th</sup> CHRIS Meeting, which is reproduced below:

*"The IHB to organise an ENC Updating Session in conjunction with the May 2000 PRIMAR Technical Experts Group Meeting."*

Mr Anthony PHARAOH (IHB) was appointed as Rapporteur for the Session.

**2.       APPROVAL OF AGENDA**

The agenda (see Annex D) was approved and accepted by the meeting.

**3.       MATTERS ARISING FROM THE MOBILE WORKSHOP SUMMARY OF DISCUSSIONS**  
**(Document ENCUPD2/3A).**

A list of actions resulting from the Mobile Workshop is at Annex E. They were reviewed by the Meeting.

Action Item 7.1 – *Produce a combined list of ENC QC/QA checks to be performed.* **Done.** UK reported that the ENC validation check list was very near completion after which it will be forwarded to the IHB for publication, probably as an annex to the ENC Product Specification (Appendix B.1 to S-57).

Action Item 7.2 – *Clarify S-57/ENC Product Specification in regard to cell cancellation message.* **Done.** The issue had been referred to TSMAD for discussion. Hannu Peiponen (Aspo/Navintra) reported that he had received a satisfactory explanation from the TSMAD chairman. He noted that there were a few S-57 issues that IEC 61174 test procedures did not explicitly cover, and which could result in their exclusion by some ECDIS manufacturers.

There followed a discussion on which additional tests should be included in IEC 61174. Some requirements that were identified at the meeting include:

- tests to ensure that text and picture files can be displayed.
- tests to ensure that the ECDIS system responds to the date start (DATSTA), date end (DATEND), periodical start (PERSTA) and periodical end (PEREND) attributes of the S-57 Object Catalogue.

- tests to ensure that tidal stream panel information can be displayed.
- tests to ensure that cell cancellation can be implemented.

**New Action:** Using the above list as a basis, IHB to solicit comments from ENC and ECDIS producers to ascertain what additional checks/tests should be included as mandatory in IEC 61174.

This list should then be submitted to TSMAD for comments after which it should be made available to the IEC 61174 Maintenance Team for implementation. Additionally, TSMAD would be tasked to produce an expanded IHO Test Data Set that will include the additional tests.

C-Map stated that ECDIS type approval could be carried out more efficiently if the IEC 61174 tests procedures for Software and Hardware were carried out separately. This would enable Software libraries to be approved only once after which they would not require re-approval when used by different OEM's. Hannu Peiponen commented that this would be an issue for the IEC TC80 executive body rather than for the IEC 61174 Maintenance Team.

Action Item 7.3 - *Advise IHO Member States of the pricing structure of other Member States. Develop a "matrix approach" of different means and processes currently used by HOs and RENCs for ENC/update pricing and services.* **Done.** The matter was addressed by the 11<sup>th</sup> CHRIS Meeting, which resulted in pricing information being included in the Meeting's Minutes (distributed to IHO Member States by IHB Circular Letter 3/2000. ENC pricing status, as of November 1999, is summarised below.

- Canada: US\$50 per ENC per year, including updating.
- Japan: US\$950 per CD-ROM containing approximately 30 ENCs at small scales (General and Coastal charts) and US\$450 per CD-ROM with large scale ENCs (Harbour and Approach charts). ENC updating service costs US\$45 per month.
- PRIMAR - It has a three-level pricing structure to cover three different ENC cell sizes: low, medium and high, based on coverage related to size of paper chart. The medium size ENC cells are priced at US\$27.80 and the associated annual updating service at US\$19.20.

PRIMAR stated that this issue would also be dealt with during the PRIMAR Technical Experts Group Meeting on the following day.

Action Item 7.4 – *Consider the re-establishment of an IHO Updating WG, to consider among other issues: a) The structure of an "Updating data base"; and b) Amendments to S-52 Appendix 1. The main driving force for any changes should be user requirements (both NtM producers and NtM users), not the capabilities of S-57.* **Done.** The Chairman explained that it was decided at the 11th CHRIS Meeting, not to re-establish an Updating Working Group, but to progress this work by holding regular workshops. Any proposed changes to S-52 Appendix 1 would be handled directly by the CHRIS Committee. More specifically:

- a. Structure of an "Updating Data Base" – No action could be identified by the Meeting.
- b. Amendments to S-52 Appendix 1 – The Chairman asked whether any changes were required for S-57 Part 3 or S-52 Appendix 1. France noted that some inconsistencies between the table 5.1 of the ENC Product Specification and paragraph 3.2 (m) of S-52 Appendix 1, had been highlighted at the May 1998 TSMAD meeting and this appeared to have not been resolved yet. The matter was further considered at § 5.2 and 5.3 below.

Action Item 7.5 – *Advise Member States to co-ordinate their updating procedures with the paper chart providers.* No action taken. The matter was further considered at § 5.1 and 6.3 below.

Action Item 7.6 – *IHB to advise Member States of the benefits of automatic updates.* No action taken.

The Chairman asked for those Member States present to provide a brief description of how they are synchronising the issue of their paper NtM's and ENC ER corrections.

- Portugal: They produce synchronised updates every fortnight. Validated ER's are sent to PRIMAR.
- Norway: An ER production line has been running for approximately six months. Problems are still being experienced with synchronization.

- Netherlands: They are planning to use a single database for producing synchronized ER and NtM updates.
- Greece: They have not started to produce ENC's yet. They plan to produce synchronised NtM and ER updates.
- Germany: They have been producing ER's for about one year. Updates are produced weekly and are synchronised.
- France: NtM's are sent to PRIMAR who produce the ER updates. They intend to eventually produce the ER updates in-house.
- Denmark: Their ER's have been produced in-house for more than one year and they are synchronised with NtM's.

Action Item 7.7 – *Promote the use of the Open ECDIS Forum (OEF) as a vehicle for Working Group and Committee activities.* **Done** - Ongoing item of the Bureau. The Chairman recommended that Member States make use of the OEF.

#### 4. UPDATE SINCE THE MOBILE WORKSHOP ON ENC UPDATING EXPERIENCE BY COMMERCIAL FIRMS

C-Map reported that they had updated about 1,500 S-57 data cells and stated that any changes to the standard would cause major problems for them. The Chairman stated that although a new edition (3.1) of the standard was due to be released in November 2000, it was intended to keep it as stable as possible. No further editions would be released for at least the next three years.

PRIMAR stated that they presently issue a new CD every week containing updates and new base cells. They presently produce ER's for France, Netherlands, Norway and Finland

#### 5. PRODUCTION OF ENC UPDATES AT HO LEVEL

##### 5.1 HO's Presentation on ER Preparation.

Mr Max FUNCKE (Germany) gave a presentation on the procedure established at the BSH to prepare their ER's (see Appendix 1). He further mentioned that:

- They provide weekly backups for the Baltic region.
- They have produced one general use cell for the North Sea.
- They expect all North Sea cells to be completed within two years.
- They are experiencing some problems with temporary changes. (It was recommended that Germany submit a paper to TSMAD outlining these problems and proposing new attributes for "temporary moved" and "temporary deleted").

**New Action:** Germany to act as recommended above.

The chairman then requested that delegates report on any problems that they may be experiencing with regard to the production and issue of updates.

- UK: They are experiencing problems with temporary and preliminary changes. They also have concerns, shared by Portugal (see below), about the issue of liability as a result of the release of unsynchronised updates.

**New Action:** IHB to contact the IHO Legal Advisory Committee (LAC) on the issue of unsynchronised NtM's and ER's. France commented that this should include digital NtM as well as paper NtM's (see also paragraph 7.3).

They are also experiencing some problems associated with minimal updates, which are related to their internal production software. They anticipate that these problems will be sorted out very soon.

- Sweden: They do not have any significant problems with producing updates.
- Portugal: They do not have any technical problems. They are however worried about the liability issue, as they hold back paper NtM's so that their release can be synchronised with the release of ER's. See also item "UK" above.
- Norway: They have some system problems and are making some changes to their Software systems.
- Netherlands: They do not have any updating experience yet. They have ordered D-Kart inspector and intend producing updates in the future.
- Greece: They have not started producing ENC data yet and therefore do not have any updating experience.
- Germany: They do not have any technical problems. They have experienced some problems creating the catalog file for updates.
- France: They are not encoding ER files.
- Finland: They are not experiencing any technical problems.
- Denmark: They are using the CARIS system and are not experiencing any technical problems.

In summary, the Chairman noted that the HO's represented at this Session had not experienced any significant problems in relation to production of ENC updates.

#### 5.2 How the ENC Product Specification deals with updates at a functional level.

On examination of Table 5.1 on Page 18 of the ENC Product Specification, France reminded that some inconsistencies had been highlighted at the May 1998 TSMAD meeting (see § 5.3).

UK indicated that they would be making a proposal to amend the ENC Product Specification at the next TSMAD meeting.

#### 5.3 Requirements to S-52 Appendix 1 and their current relevance and validity.

Paragraph 3.2 (m) of S-52 Appendix 1 specifies that "a new edition of an ENC should be announced at least 8 weeks, and made available at least 4 weeks prior to its effective release". This is currently not reflected in Table 5.1 of the ENC Product Specification. The meeting agreed that this was sometimes difficult to achieve and recommended that this clause needed amending. It was suggested that the simplest solution might be to delete the above sentence in S-52 Appendix 1. France offered to look at the matter.

**New action:** France to elaborate a proposal to remedy this conflict, to be submitted to TSMAD.

#### 5.4 Production and quality control of update messages.

The question was raised as to what would happen if an update containing an error was issued and how would this be corrected? It was suggested that if the content of the update was incorrect, it may be possible to issue an update correcting the incorrect update. If however the error was caused by bad encoding, it would be necessary to produce a new edition.

#### 5.5 New updating requirements arising from HO's producing ENC's from source data as opposed to paper charts.

No such requirements were identified.

## **6. INTEGRATION AND DISSEMINATION OF ENC UPDATES AT RENC LEVEL**

### **6.1 PRIMAR's presentation on ER integration and distribution.**

Mrs Sølvi Tunge (PRIMAR) gave a presentation on the work done at PRIMAR in regard to ENC updating (see Appendix 2). PRIMAR reported that as of May 2000 they had received 504 ENC cells and 363 updates (ER's). They use D-Kart Inspector for ER validation purposes.

### **6.2 Type of update service to provide, including packaging and distribution media options. RENC's role through all the process of updating.**

No remark was made on this subject.

### **6.3 Coordination of ENC updates and Notices to Mariners.**

UK reported that this was a matter of concern as it was not always possible to synchronise the issue of NtM's and ER's. See also paragraph 5.1, item "UK", in this regard.

PRIMAR stated that this issue would also be dealt with during the PRIMAR Technical Experts Group Meeting on the following day.

### **6.4 Assessment of proposed ways of disseminating updates, their impact on ENC pricing and their relationship to ENC security.**

It was agreed that this item should be dealt with during the PRIMAR Technical Experts Meeting, to follow on 30-31 May 2000.

### **6.5 Mechanism of charging customers of ENC updates.**

It was decided that this item should be dealt with during the PRIMAR Technical Experts Meeting, to follow on 30-31 May 2000.

## **7. IMPLEMENTATION OF ENC UPDATES**

### **7.1 OEM's presentation on ER implementation into ECDIS.**

Mr Hannu PEIPONEN (Aspo/Navintra) gave a presentation on how ENC updates are implemented on their ECDIS (see Appendix 3).

C-Map reported that they were not experiencing technical problems, however they still have to sort out some logistical issues.

### **7.2 Legal status of digital updates from a SOLAS perspective.**

The Chairman explained that the IHB would contact the IHO Legal Advisory Committee requesting advice on this issue.

**New Action:** IHB to contact the LAC seeking advice regarding the legal status of digital ENC updates.

### **7.3 Impact of data encryption on interoperability of the update message compounded by the various types of ECDIS.**

PRIMAR reported that they commenced their data encryption service on the 21 October 1999. Both encrypted and unencrypted EN's and ER's could be made available to the co-operating HO's. The Chairman noted that the proposal to distribute ENC's and updates in a SENC format would have to

consider the need for data encryption. C-Map commented that, although the IHO should take a position regarding data encryption, its implementation should be left to PRIMAR.

## **8. CONCLUSIONS**

A list of new actions items arising from this meeting was agreed, and is at Annex F.

As a final note, the Chairman remarked that the meeting, in regard to ENC updating issues had identified no significant problem. There being no other points to discuss, he closed the meeting at 1530.

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### Appendices (not attached):

- Appendix 1 - BSH procedure to prepare ENC updates files (ER's).
- Appendix 2 - Integration and Dissemination of ENC updates at RENC level: PRIMAR's experience.
- Appendix 3 - Implementation of ENC updates on an ECDIS: ASPO Syst/Navintra Ltd's experience.

ENCUPD2/1A

**ENC UPDATING SESSION  
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**LIST OF DOCUMENTS**

ENCUPD/1A	List of Documents
ENCUPD/1B	List of Participants
ENCUPD/2A	Provisional Agenda
ENCUPD/3A	Summary of Discussions at IHO Workshop on ENC Updating in Mobile, Alabama, USA, 3-4 May 1999

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**ENC UPDATING SESSION**  
**IHB, Monaco, 29 May 2000**

**AGENDA**

1. Opening and administrative arrangements.
  2. Approval of the Agenda.
  3. Consideration of Mobile Workshop Conclusions
  4. Commercial firms invited to briefly update, since the Mobile Workshop, their experiences of ENC updating.
  5. Production of ENC updates at HO Level.
    - 5.1. HO's presentation on ER preparation.
    - 5.2. How the ENC Product Specification deals with updates at a functional level.
    - 5.3. Requirements of S-52 Appendix 1 and their current relevance and validity.
    - 5.4. Production and quality control of update messages.
    - 5.5. New updating requirements arising from HOs producing ENCs from source data as opposed to paper charts.
  6. Integration and Dissemination of ENC updates at RENC Level.
    - 6.1. PRIMAR's presentation on ER integration and distribution.
    - 6.2. Type of update service to provide, including packaging and distribution media options. RENC's role through all the process of updating.
    - 6.3. Coordination of ENC Updates and Notices to Mariners.
    - 6.4. Assessment of proposed ways of dissemination of updates, their impact on ENC pricing and their relationship to ENC security schemes.
    - 6.5. Mechanism of charging customers of ENC updates.
  7. Implementation of ENC updates.
    - 7.1. OEM's presentation on ER implementation into ECDIS.
    - 7.2. Legal status of digital updates from a SOLAS perspective.
    - 7.3. Impact of data encryption on interoperability of the update messages compounded by the various types of ECDIS.
  8. Conclusions.
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**ACTIONS ARISING FROM THE MOBILE WORKSHOP**

**3-4 May 1999**

*(Taken from the Workshop Summary of Discussions)*

**7. CONCLUSIONS**

As a result, the Workshop identified a list of required actions, as follows:

- 7.1 Produce a combined list of ENC QC/QA checks to be performed

*Action: PRIMAR & IHB*

- 7.2 Clarify S-57/ENC Product Specification in regard to cell cancellation message.

*Action: TSMAD*

- 7.3 Advise IHO Member States of the pricing structure of other Member States.  
Develop a "matrix approach" of different means and processes currently used by HOs and RENCs for ENC/update pricing and services.

*Action: IHB*

- 7.4 Consider the re-establishment of an IHO Updating WG, to consider among other issues:

- a. The structure of "Updating data base"
- b. Amendments to S-52 Appendix 1. The main driving force for any changes should be user requirements (both NtM producers and NtM users), not the capabilities of S-57.

*Action: CHRIS and IHB*

- 7.5 Advise Member States to co-ordinate their updating procedures with the paper chart providers.

*Action: IHB*

- 7.6 Advise Member States of the benefits of "automatic updates".

*Action: IHB*

- 7.7 Promote the use of the Open ECDIS Forum (OEF) as a vehicle for Working Group and Committee activities.

*Action: IHB*

**ACTIONS ARISING FROM THE ENC UPDATING SESSION**  
**IHB, Monaco, 29 May 2000**

Action 1: Using the list of requirements below as a basis, IHB to solicit comments from ENC and ECDIS producers to ascertain what additional checks/tests should be included as mandatory in IEC 61174.

- tests to ensure that text and picture files can be displayed.
- tests to ensure that the ECDIS system responds to the date start (DATSTA), date end (DATEND), periodical start (PERSTA) and periodical end (PEREND) attributes of the S-57 Object Catalogue.
- tests to ensure that tidal stream panel information can be displayed.
- tests to ensure that cell cancellation can be implemented.

Action 2: Germany to submit a paper to TSMAD outlining problems they are experiencing with temporary changes and proposing new attributes for “temporary moved” and “temporary deleted”.

Action 3: IHB to contact the IHO Legal Advisory Committee (LAC) on the issue of unsynchronized NtM's and ER's. This should include digital NtM as well as paper NtM's.

Action 4: France to elaborate a proposal, to be submitted to TSMAD, to resolve the conflict between Paragraph 3.2 (m) of S-52 Appendix 1 and Table 5.1 of the ENC Product Specification.

Action 5: IHB to contact the LAC seeking advice regarding the legal status of digital ENC updates.

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