

**INTERNATIONAL HYDROGRAPHIC
ORGANIZATION**



**ORGANISATION HYDROGRAPHIQUE
INTERNATIONALE**

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**CIRCULAR LETTER 33/2007
23 March 2007**

**SUBMISSION TO IMO REGARDING THE REQUIREMENT FOR THE REGULAR
MAINTENANCE OF ECDIS SOFTWARE**

References: a) CL77/2006 dated 24 November
b) CL20/2007 dated 9 February

Dear Hydrographer,

1 The IHB thanks the 12 Member States who replied to Reference B, Algeria, Australia, Ecuador, France, Greece, Japan, Netherlands, Norway, Peru, Portugal, South Africa and the United Kingdom. All replies supported the proposed request to IMO for the issue of an IMO Safety of Navigation Circular (SN/Circ) regarding the need for the regular maintenance of ECDIS software. Six Member States provided comments and these are given at Annex A.

2 The revised text of the submission to IMO NAV 53 is at Annex B.

On behalf of the Directing Committee
Yours sincerely,

Vice Admiral Alexandros MARATOS
President

Annex A: Member States' comments on CL20/2007

Annex B: IMO NAV 53 submission requesting the issue of an SN/Circ.

MEMBER STATES' COMMENTS ON CL20/2007

Australia:

Australia strongly supports the issue re an IMO Safety of Navigation Circular (SN/Circ).

Paragraph 6 of the draft IMO S/N Circ indicates that the relevant standards can be found on the IHO web site. We suggest that it would be clearer if a specific list (like the one in paragraph 5 of the draft S/N Circ) of the relevant ECDIS standards was available in a single place on the web site rather than just directing mariners to the full list of IHO standards. This could be by way of a dedicated web page called "about ECDIS" or "ECDIS Standards" or something similar - noting that there is already a page called "ENC".

If such a page is created on the web site then paragraph 6 of the draft S/N Circ will need to be adjusted accordingly.

IHB Comment: The proposed web page has been created and the draft SN/Circ amended accordingly

Japan:

There are requests for Administrations, ship owners and Masters in paragraph 7, but there is no request for ECDIS equipment manufacturers in this Annex of Draft SN/Circ (Annex B). Therefore we propose the additional script of this Annex Page 2 as follows:

"10. Member States should ask ECDIS equipment manufacturers for keeping the software up-to-date."

IHB Comment: The IHB considers that the intention of this draft SN Circ. is to raise the awareness of Maritime Administrations as to the need to ensure that ECDIS software is up to date. If Administrations and Mariners follow the guidance in the SN Circ. then they should automatically be contacting their ECDIS manufacturer if their ECDIS is not implementing the latest software standards. ECDIS manufacturers should become aware of the latest Standards through other fora such as, for example, the ECDIS Stakeholders' Forum and the Type Approval Process. Consequently this paragraph has not been included.

Norway:

In principle Norway agrees with the preparation of this Circular letter, and support the introduction points, however, from point 7 and onwards we have some comments:

In general, as far as NHS is aware of, IMO does not have system for upgrading the software of equipment which has already been type approved and installed on board a ship. Reference is made to e.g. comment from CIRM at the 10th WEND meeting in Monaco 11 & 14Sept 2006 (Minutes WEND 10/ESF2 page 28):

"CIRM (Rambaut) pointed out that unlike most shipboard navigation equipment, ECDIS is primarily based on software. Making can cause problems. Currently, IMO does not have a mechanism to deal with software changes to required SOLAS equipment."

If such upgrading shall take place, this may require the involvement of the Administration, the type approving authority as well as the ship-owner. In practice it's not possible, nor is it reasonable that the mariner on board shall be responsible for considering or monitoring the software development related to equipment that has been type approved. Generally, the responsibility for the ship always carrying SOLAS-compliant equipment should be put on the company (ship-owner) and be managed according to the ISM-code.

NHS believes that IHO should specifically request IMO to emphasize through the SN Circ that proper maintenance of ECDIS SW is a mandatory issue and apply for adequate measures to be implemented by the Company in accordance with the ISM-code.

This should in due time bring the subject on the agenda of the world fleet and also on various surveyor's checklists around the world.

Norway has also consulted DNV in this matter, and we propose to replace paragraph 7, 8 and 9 in Annex B to CL 20/2007 with the following:

7. Administrations should inform ship-owners that proper maintenance of ECDIS SW is a mandatory issue and that adequate measures are implemented by the shipping company in accordance with the ISM-code.

8. Mariner's should refer to the manufacturer's Users Guide for direction on determining the software configuration version of their ECDIS equipment.

IHB Comment: This proposal has been incorporated into the revised draft with a slightly modified wording for paragraph 7 which has been discussed with Norway.

Portugal:

The Portuguese Hydrographic Office welcomes the IHC initiative outlined in this Circular Letter and fully supports the submission, of Safety of Navigation Circular (SN/Circ) to IMO as proposed.

Bearing in mind that all the efforts to ensure ECDIS software is fully up to date must be made, it should be emphasized at the referred draft SN/Circ that although the current edition of the IHO S52 - Presentation library (Edition 3.3) does not make provision for symbolizing the new edition 3.1.1 object classes in ECDIS, new symbolization is being developed, and will be included in the next edition (3.4) of the S52.

It should also be referred that selected presentation rules designed for the new object classes will be adopted in due course, and will be published as Deferred Amendments to the existing Edition 3.3 of the S52 Presentation Library.

IHB Comment: An appropriate statement has been included in both the submission and the draft SN/Circ.

South Africa:

I fully support the approach to the IMO to issue a Navigational Circular regarding the regular updates of ECDIS software and the content of the draft SN/Circ is supported. I do however feel that more mention should be made of the implementation of S-63 and therefore even more urgent requirement to ensure ECDIS software compliance. This did feature in the discussions of ESF2 and there seems to be a lot of confusion regarding this aspect.

IHB Comment: This matter has been included by the incorporation of the proposal from the UK.

United Kingdom:

UKHO recommends that the following sentence is added to the end of paragraph 4 of Annex B (NAV53/5/X), in recognition of the many S-63 implementation issues which have been identified by the RENCs and DPSWG, and which are hampering service providers:

"Similarly, older ECDIS equipment and ECDIS equipment which is not updated to be fully compliant with S-63 Ed1.1 may fail to decrypt or to properly authenticate certain ENC data from some ENC service providers, leading to their failure to load on that equipment."

IHB Comment: This sentence has been included and has also been added to the end of paragraph 6 of the covering paper. This also addresses the comment made by South Africa.

SUB-COMMITTEE ON SAFETY OF
NAVIGATION AND RESCUE
53rd session
Agenda item 5

NAV 53/5/x
Xx xxxxxx 2007
Original: ENGLISH

EVALUATION OF THE USE OF ECDIS AND ENC DEVELOPMENT

Maintenance of ECDIS Software

Note by the International Hydrographic Organization (IHO)

SUMMARY

<i>Executive summary:</i>	This document requests that consideration be given to the issue of an SN Circular regarding the maintenance of ECDIS software.
<i>Action to be taken:</i>	Paragraph 9
<i>Related documents:</i>	SOLAS V/16, V/18 and V/19; resolution A.817(19) as amended; resolution MSC.232(82).

Introduction

- Resolution A.817(19) as amended introduced a Performance Standard (PS) for the Electronic Chart Display and Information System (ECDIS). The 2000 amendments to the International Convention for the Safety of Life at Sea (SOLAS) at regulation V/19.2.1.4 specifies chart carriage requirements and accepts ECDIS as meeting the chart carriage requirement of this subparagraph.
- SOLAS V/16.1 requires that "The Administration be satisfied that adequate arrangements are in place to ensure that the performance of the equipment required by this chapter is maintained". SOLAS V/18.2 requires that "Systems and equipment, including associated back-up arrangements, where applicable, installed on or after 1 July 2002 to perform the functional requirements of regulations 19 and 20 shall conform to appropriate performance standards not inferior to those adopted by the Organization" and in a footnote refers to the ECDIS PS.
- The ECDIS PS, Resolution A.817(19), as amended, at paragraph 1.4 for ECDIS installed between 1 January 1996 and 1 January 2009, and resolution MSC.232(82) at paragraph 1.3 for ECDIS installed on or after 1 January 2009 require that "ECDIS should be capable of displaying all chart information necessary for safe and efficient navigation".
- ECDIS equipment comprises both hardware and software elements and in order to meet the above requirements the software element should comply with the relevant current editions of the IHO Standards governing the transfer and presentation of electronic chart information.
- The current IHO standards for ECDIS (in 2007) are the Electronic Navigational Chart (ENC) Product Specification (S-57 Ed.3.1, Supplement No.1 (Ed.3.1.1) together with the clarifications within the S-57 Maintenance Document (Cumulative) Number 8), the ECDIS Colours and Symbols Presentation Library (S-52 PresLib Ed.3.3); the IHO Data Protection Scheme (S-63 Ed.1.1); and the Raster Navigational Chart (RNC) Product Specification (S-61 Ed.1.0).
- The IHO ECDIS data standards have been subject to controlled revision since ECDIS was first introduced. The latest revision in January 2007 introduced Supplement No. 1 to the ENC Product Specification S-57 Ed.3.1 (Ed.3.1.1) specifically to include recently introduced IMO requirements for Particularly Sensitive Sea Areas (PSSA) and Archipelagic Sea Lanes (ASL) and to cater for any new and important requirements in the future, such as the IALA Emergency Wreck Marking Buoy.

However, older ECDIS equipment and ECDIS equipment which is not upgraded to read S-57 Ed.3.1.1 data or to present it using the S-52 Presentation Library Ed.3.3 may be unable to display these or other features optimally or at all, and the appropriate alarms and indications may not be activated even though the data has been included in the ENC. Similarly, older ECDIS equipment and ECDIS equipment which is not updated to be fully compliant with S-63 Ed1.1 may fail to decrypt or to properly authenticate certain ENC data from some ENC service providers, leading to their failure to load on that equipment.

7. The S-52 Presentation Library Ed3.4 will be amended to include the new symbology for the new Object Classes included in S-57 Edition 3.1.1. S52 Ed3.4 will enter force on 1 January 2008.

8. At the 2nd meeting of the IHO ECDIS Stakeholders Forum (ESF), a forum intended to bring industry and hydrographic offices together, concern was expressed that ECDIS software in use at sea was not necessarily being updated to reflect the latest editions of the IHO Standards. This view was considered further, and endorsed, by the IHO Committee on Hydrographic Requirements for Information Systems (CHRIS) who considered that the issue of a Safety of Navigation Circular might be appropriate to bring the limitations of not using the latest IHO standards to the attention of Administrations and mariners.

Action requested of the Sub-Committee

9. The Sub-Committee is invited to consider the issue of an SN circular a draft of which is enclosed at the Annex.

ANNEX

SN/Circ.xx
Xx 2007

MAINTENANCE OF ELECTRONIC CHART DISPLAY SYSTEM (ECDIS) SOFTWARE

1. The Sub-committee on Safety of Navigation (NAV), at its [fifty third session (23 - 27 July 2007)], approved the issue of an SN/Circ.

2. Member Governments are invited to bring this information to the attention of all concerned for information and in particular to ensure that mariners always have the latest safety related information available to them.

Annex

1. The 2000 amendments to the International Convention for the Safety of Life at Sea (SOLAS) accepted that ECDIS could meet the chart carriage requirements of SOLAS. ECDIS Performance Standards have been adopted by IMO, resolution A.817(19) as amended and MSC.232(82). The ECDIS Performance Standards also refer to the relevant International Hydrographic Organization (IHO) Standards that govern the transfer and presentation of the chart information used in ECDIS.
2. ECDIS equipment comprises both hardware and software. It is important for the safety of navigation that ECDIS works in accordance with the IMO Performance Standards and is capable of displaying all the relevant digital information contained within the chart database (that is; the Electronic Navigational Charts (ENCs) supplied by Hydrographic Offices).
3. In January 2007, Supplement No. 1 to the IHO ENC Product Specifications (S-57 Ed.3.1.1) was introduced in order to include, within the ENC, the recently introduced IMO requirements for Particularly Sensitive Sea Areas (PSSA), Archipelagic Sea Lanes (ASL) and to cater for any new and important requirements in the future such as the IALA Emergency Wreck Marking Buoy.
4. Older ECDIS equipment and ECDIS equipment which is not upgraded to read S-57 Ed.3.1.1 data or to present it using Edition 3.3 of the S-52 Presentation Library may be unable to display the latest charted features optimally or at all, and the appropriate alarms and indications may not be activated even though the data has been included in the ENC. Similarly, older ECDIS equipment and ECDIS equipment which is not updated to be fully compliant with S-63 Ed1.1 may fail to decrypt or to properly authenticate certain ENC data from some ENC service providers, leading to their failure to load on that equipment.
5. S-52 Presentation Library Ed3.4 will include the new symbology for the Object Classes included in S-57 Edition 3.1.1. S-52 Ed3.4 will enter force on 1 January 2008.
6. The latest editions of the IHO standards (2007) governing ECDIS are:

IHO ECDIS Standards	Current Edition
Electronic Navigational Chart (ENC)	S-57 Edition 3.1, S-57 Edition 3.1.1 and S-57 Maintenance Document (Cumulative) Number 8
Raster Navigational Chart (RNC)	S-61 Edition 1.0
ECDIS Display and Presentation	S-52 PresLib Edition 3.3 (to be replaced by Ed3.4 on 1 Jan 2008)
ENC Data Protection	S-63 Edition 1.1

7. A list of all the current IHO standards is maintained on the IHO web site: www.iho.int. Go to ENC/ECDIS then ECDIS.
8. Administrations should inform ship-owners that proper maintenance of ECDIS software is an important issue and that adequate measures should be implemented by the shipping company in accordance with the ISM-code.
9. Mariner's should refer to the manufacturer's Users' Guide for direction on determining the software configuration version of their ECDIS equipment
