

SUB-COMMITTEE ON NAVIGATION,  
COMMUNICATIONS AND SEARCH AND  
RESCUE  
2nd session  
Agenda item 22

NCSR 2/22/2  
22 December 2014  
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## ANY OTHER BUSINESS

### Report on monitoring of ECDIS issues by IHO

#### Submitted by the International Hydrographic Organization (IHO)

#### SUMMARY

<i>Executive summary:</i>	This document reports on the outcome of the continuing monitoring by IHO of ECDIS issues related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 and V/19.2.11
<i>Strategic direction:</i>	5.2
<i>High-level action:</i>	5.2.5
<i>Planned output:</i>	5.2.5.1
<i>Action to be taken:</i>	Paragraph 19
<i>Related documents:</i>	NCSR 1/4, NCSR 1/4/1 and NCSR 1/28

#### Background

1 In accordance with the directive agreed by the 18th International Hydrographic Conference (23 to 27 April 2012), the International Hydrographic Organization (IHO) continues to monitor the implementation of the Electronic Chart Display Information System (ECDIS) to ensure that issues identified in regard to the anomalous operation of some ECDIS are collated, analysed, communicated and resolved as speedily as possible to maintain the safety of navigation and to assist the smooth transition from paper to digital navigation.

2 The IHO Secretariat reported on this item at NAV 59 and NCSR 1. At its first session, NCSR agreed that progress in resolving the outstanding issues with ECDIS operating anomalies, as well as other matters related to the implementation of ECDIS, could be reported to the Sub-Committee under "Any other business" (NCSR 1/28, paragraph 4.5).

3 This document reports on new developments since NCSR 1.

## ENC/ECDIS data presentation and performance check for ships

4 As of 1 December 2014, 74 additional reports have been received since the previous analysis reported at NCSR 1. Although this number remains small, the outcome seems to indicate a continuing improvement in the updating of ECDIS software, as shown in table 1. No new issue has been identified.

*Table 1  
Outcome of ENC/ECDIS data presentation and performance checks for ships*

Period	1 August 2011 15 April 2013	15 April 2013 15 April 2014	15 April 2014 1 December 2014
Number of reports	1042	76	74
% of reports indicating no problem	22%	43%	55%
% of reports indicating no anomaly in the display of "new objects"	60%	91%	95%

## Maintenance of IHO Standards for ECDIS

5 As reported to NAV 59, the relevant IHO working groups began a review in 2012 of the IHO standards related to ECDIS. This was as a consequence of the investigations into the anomalous operation of some ECDIS. As reported at NCSR 1, the following new editions of IHO Publications related to ECDIS were published in 2014:

- .1 Edition 6.1.0 of S-52 – *Specifications for Chart Content and Display Aspects of ECDIS*;
- .2 Edition 4.0.0 of S-52 – Annex A – *IHO Presentation Library for ECDIS*; and
- .3 Edition 3.0.0 of S-64 – *IHO Test Data Sets for ECDIS*.

6 In relation to the revision of IEC Standard 61174 – *Maritime navigation and radiocommunication equipment and systems – Electronic chart display and information system (ECDIS) – Operational and performance requirements, methods of testing and required test results*, the production of a normative reference that supports the requirement for an "ENC Update Status Report" showing the status of ENC data to the end-user (for operational planning) and to the relevant authorities (for such purposes as Port State inspection) appeared necessary. Further consideration led to acknowledging the need to enhance IHO Publication S-63 – *IHO Data Protection Scheme* with a new Annex C describing the functionality required to provide an ENC Update Status Report. Subject to its approval by IHO Member States, a draft revised Edition 1.2.0 of S-63 incorporating the new Annex C should be published in February 2015.

7 In accordance with the schedule presented at NCSR 1, the date of entry into force of the new editions of S-52 and S-64 will be aligned with the date of publication of the new edition of IEC 61174. From that date, the new editions will be the normative references for the type approval of new ECDIS. The current editions will remain in force for 12 months beyond the date of entry into force of the new editions. This means that if the date of entry into force of the new edition of IEC-61174 is 1 September 2015, then the current editions of S-52 and S-64 will remain valid until 31 August 2016. This transition interval is intended to provide manufacturers and national authorities with an appropriate interval in which to type

approve new ECDIS products in accordance with the revised standards, and to enable shipowners and operators to update existing systems to conform with IMO circular SN.1/Circ.266, as amended, concerning the maintenance of ECDIS software.

8 Compliance with the new annex to S-63 will apply only to those ECDIS systems that will be type-approved in accordance with the new edition of IEC 61174. There will be no retrospective impact on existing ECDIS systems.

9 The revision of IHO Publication S-66 – *Facts about Electronic Charts and Carriage Requirements* was initiated in 2014. The draft new edition, reflecting the changes that have occurred since the first edition (January 2010), is expected to be available for review by mid-2015.

10 A new structure of the IHO working groups (WG) responsible for the maintenance of IHO standards governing the provision of hydrographic services has been adopted in order to reflect the changing focus from paper to digital data based products and services, the best use of limited resources, improvements in their efficiency and to facilitate inputs from industry and other stakeholders. The maintenance of IHO standards for ECDIS, which was shared between the Transfer Standard Maintenance and Applications Development WG (TSMAD) and the Digital Information Portrayal WG, is now regrouped under the ENC Standards Maintenance Working Group (ENCWG). A separate WG, the S-100WG, will lead the development of IHO standards for IHO e-navigation-based services.

### ENC Coverage

11 In parallel, IHO continues to monitor the status of ENC coverage. Table 2 summarizes the global availability of ENCs by comparing the availability of paper charts intended for international voyages with the availability of corresponding ENCs. The figures are based on data available as of 1 December 2014.

*Table 2*  
*Comparison of ENC coverage with corresponding paper chart coverage*

	May 2009	May 2011	May 2013	April 2014	December 2014
Small-scale ENCs (planning charts)	~100%	~100%	~100%	~100%	~100%
Medium-scale ENCs (coastal charts)	77%	88%	90%	90%	91%
Large-scale ENCs (top 800 ports)	84%	94%	96%	97%	97%

12 The relevant Regional Hydrographic Commissions have been invited to report on their analysis of any remaining gaps in ENC coverage and to identify possible actions to the next meeting of the IHO Working Group on the World-wide ENC Database (WEND), which will take place in March 2015. It is worth noting that so far, the IHO Secretariat has received no input from shipping operators which identifies specific areas where there are shortfalls in ENC coverage.

13 A working group led by Singapore has been formed to carry out a pilot project to explore technical solutions to resolve the unpredictable performance of ECDIS caused by overlapping ENC coverage, notably in areas where the limits of waters of national jurisdiction between two neighbouring countries are not established. ECDIS manufacturers have been invited to take part in the project via the ECDIS Committee of the Comité International Radio-Maritime (CIRM).

14 The 5th Extraordinary International Hydrographic Conference (EIHC-5), which met in Monaco from 6 to 10 October 2014, reviewed progress in the global implementation of the IHO worldwide ENC database concept (WEND) and instructed the IHO Inter-Regional Coordination Committee to assess further the situation and perspective in relation to availability, consistency, coverage and quality of ENCs. It was noted that most, but not all States that produce ENCs include their ENCs in the WEND system.

15 EIHC-5 supported the development of IHO guidelines for an IHO-led crowd-sourced bathymetry programme. This will provide the opportunity for the world's shipping to contribute directly to obtaining depth data, using mainly existing ship's equipment while on passage to improve our knowledge of the world's seas, oceans and navigable waters and thus the improvement of nautical charts.

### **Overview and Perspective**

16 Resolving the known issues with ECDIS operating anomalies is progressing normally with the active involvement of all key stakeholders. No major new issue has been identified since NAV 58.

17 With the uptake of ECDIS use associated with the entry into force of carriage requirements since 1 July 2012, vigilance and attentiveness are still relevant. The IHO Secretariat will continue to monitor the evolution of ECDIS and the associated standards, actively pursuing ways to resolve any future issues whenever they arise.

18 The IHO Secretariat welcomes further feedback from all stakeholders concerning ECDIS operation and maintenance. The IHO Secretariat also welcomes feedback from stakeholders about ENC coverage and in particular the identification of specific areas where ENC coverage is still considered to be lacking.

### **Action requested of the Sub-Committee**

19 The Sub-Committee is invited to consider this report and take any action it considers appropriate.