

## Report of the IHO ENC WG

<b>Submitted by:</b>	Chairman
<b>Related Documents:</b>	S-52, S-58, S-64 IEC 61174 edition 4.0 NCSR1 4.1 TSMAD29_DIPWG7 8.1A and 8.2A IHO Press Release June 2015 - New normative references for the type approval of ECDIS
<b>Related Projects:</b>	NA

<b>Chair:</b>	Mr Thomas Mellor [UK]
<b>Vice-Chair:</b>	Vacant
<b>Secretary:</b>	Assistant Director Anthony Pharaoh [IHB]
<b>Member States:</b>	Australia, Brazil, Canada, Denmark, Finland, France, Germany, Japan, Republic of Korea, Netherlands, New Zealand, Norway, Russia, Sweden, United Kingdom, United States of America.
<b>Expert Contributor Organisations:</b>	The International Centre for ENCs (IC-ENC), PRIMAR Stavanger, Caris, ESRI (USA), Furuno (Finland), GEOMOD (France), Hydundai e-Marine (ROK), Jeppesen Marine, IIC Technologies (Canada), NAVTOR AS (Norway), SevenCs (Germany), TKartor (Sweden), and Transas (Russia), Frank Hippmann (Australia)

### Meetings Held During Reporting Period

Joint TSMAD29/DIPWG7 meeting - Ottawa, Canada (2 - 6 February 2015)

### Planned Meeting

ENC WG1 meeting, Tokyo, Japan (14 - 18 March 2016) (adjacent to S-100WG meeting)

### Work Program

#### S-52 and S-64

As reported at HSSC 6 new editions of S-52 and S-64 were published in Oct 2014 to give OEMS a period of time to implement the new presentation library prior to the publication of IEC 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.

Despite the care taken by the working group in preparing these new editions, their effective implementation in ECDIS has revealed a number of imperfections requiring corrections or clarifications, to be considered by the IHO ENC Working Group (ENCWG).

At the last DIPWG meeting in Ottawa (Feb 2015) the OEM Furuno presented two papers (TSMAD29\_DIPWG7 8.1A and 8.2A) which identified a number of clarifications required to the S-52 presentation library and S-64. These

clarifications were all approved by DIPWG during the meeting and the following revised editions were published in June 2015.

- S-52 presentation library edition 4.0.1
- S-64 edition 3.0.1

In order to maintain consistency with IEC 61174, possible successive minor editions of the ECDIS Presentation Library will be identified as Edition 4.0(x) - October 2014 - With clarifications up to (date). Possible successive editions of S-52 will be identified as Edition 6.1(x) - October 2014 - With clarifications up to (date).

To ensure any further clarifications or corrections to the standards are captured, two new reporting forms have been added to the IHO website under the webpage, Current IHO ECDIS and ENC Standards.

- The list of identified clarifications and corrections not yet incorporated in the current edition;
- The change proposal form to report any additional change that may be required.

The ENCWG have received a number of comments from OEMS regarding S-52 and S-64 which are going to be considered at the next ENCWG meeting in March 2016.

On the 19th August 2015, as reported in CL65 Rev1, the International Electrotechnical Commission (IEC) published the 4th Edition of IEC 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.

This formally means that the new IHO standards S-52 and S-64 have become the normative references to be used by Notified Bodies type approving ECDIS from this date forward.

As reported to the IMO at NCSR 1 (Consideration of ECDIS matters related to the implementation of the carriage requirements in SOLAS regulations V/19.2.10 AND V/19.2.11) IHO in conjunction with IEC and CIRM have agreed that the previous edition of S-52 will remain valid until 31 August 2016 for ECDIS which have been type-approved in accordance with a previous edition of IEC 61174. It is expected that these existing ECDIS will be upgraded or replaced within that time period.

### **Press Coverage – IHO Standards New Normative References for the Type Approval of ECDIS**

To keep Mariners informed of these important changes to IHO Standards I have worked very closely with the CIRM ECDIS WG to draft a press release for the IHO. This collaboration has ensured a consistent message is relayed to the user and has given OEMs time to prepare suitable responses for their customers.

The IHO press release 'New normative references for the type approval of ECDIS' was distributed through UKHO Marketing channels on Tues 7<sup>th</sup> July, and was followed up with a UKHO press release reinforcing the message two days later.

Over 20 different Maritime Journals reported on the press releases with a combined reach of over 1 million. This initiative using a combination of social media and more traditional marketing methods has been a great success and has informed the market of the important changes to IHO standards and has raised the key issue of ECDIS updating.

CIRM are actively investigating ways to ensure ECDIS is kept up to date and are currently developing the concept of an ECDIS Annual Performance Check. The ECDIS would be physically inspected on an annual basis to determine if it is up to date with the relevant software version. The scope of this check is still under development

but the intention is to introduce this concept to IMO with the support of Member States. I firmly believe such a physical check would contribute significantly to ensuring installed systems are capable of display all the charted features in our ENC's.

## **S-58**

In June 2014 IHO member states approved the latest edition of S-58 via CL 18/2014, and edition 5.0.0 was officially published.

During the final TSMAD meeting in Canada Feb 2015 an input paper was received from a previous member of TSMAD, Vladimir Sekachev. Through the course of his current role as a technical translator he identified a number of inaccuracies within the published S-58 edition 5.0.0. He provided a comprehensive list of his findings to the IHB.

TSMAD reviewed the comments and agreement was reached that a revised edition of S-58 was required to address the issues raised.

A new draft edition of S-58 was compiled and circulated to the ENC WG for comment on two separate occasions.

Consolidation of these comments is still ongoing as there are a number of outstanding issues still to be resolved. It's expected that the final draft will be submitted to the ENC WG before the March 2106 meeting in Japan with a view to the ENC WG accepting the new edition during the meeting.

S-57 Supplement 3 specifies that ENC data must meet the minimum validation requirements defined in S-58. The intention is that Critical Errors will become mandatory once software conforming to the new edition of S-58 is available and in use by ENC producers.

In order to support this transition a test dataset will need to be developed and a means to certify validation tools as reflecting the standard will be required. It will also be necessary to establish an "in force" date for S-58 once the new edition is published.

## **Progress on HSSC Action Items**

**N/A**

## **Problems Encountered**

The subsequent clarifications that have been necessary for S-52 and S-64 have highlighted the critical need for a robust testing phase to the implementation of IHO standards. This would potentially slow their publication and there would be a cost. This important phase must be given careful attention before S-101 is introduced. IHO should therefore consider ways to fund the testing of future standards before they are published.

## **Any Other Items of Note**

IHO should take leading role in the process of informing Maritime Administrations of the changes to IHO standards and give guidance on keeping ECDIS up to date as required in IMO SN circ1503.

## **Conclusions and Recommended Actions**

IMO circular MSC.1/Circ.1503 (published 2015, revoking SN.1/Circ.266/Rev.1) provides guidance on maintenance of ECDIS software and goes further in identifying the need to keep an ECDIS updated to compliance with the relevant IHO standards.

As per SOLAS regulation V/27, all nautical charts necessary for the intended voyage shall be adequate and up to date. For ships using ECDIS to meet the chart carriage requirement of SOLAS, all ENC's and RNC's must be of the latest available edition and be kept up to date using both the electronic chart updates (e.g. ENC updates) and the

latest available notices to mariners. Additionally, ECDIS software should be kept up to date such that it is capable of displaying up-to-date electronic charts correctly according to the latest version of IHO's chart content and display standards.

Unfortunately it is well recognised that a situation has been allowed to evolve where the ENC charts can be updated weekly within the ECDIS but the ECDIS system may not be using the latest IHO presentation library to display the data. This has serious safety implications and is unsatisfactory situation.

IHO Member States are therefore invited to make their relevant national authorities and stakeholders, including manufacturers and end-users aware of the IHO standards updates and are asked to inform their Administrations that proper ECDIS software maintenance is a safety issue and that adequate measures need to be implemented by shipowners and operators.

### **Justification and Impacts**

Future updates to S-52 and S-64 will require OEM input and testing before publication.

S-58 test data set must be produced and a process for software to be certified by the IHO established.

### **Action Required of HSSC**

The HSSC is invited to:

- a. endorse the IHO ENC WG report
- b. agree to the funding of an S-58 test dataset for establishing compliance with the standard.
- c. note the need to set an "in force" date for S-58.

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## ENCWG Proposed Work Plan - 2016 to 2017

## Tasks

A	Maintain S-52 "Specifications for Chart Content and Display Aspects of ECDIS" and its associated "Presentation Library" (IHO Task 2.3.2)
B	Maintain S-57 "IHO Transfer Standard for Digital Hydrographic Data" (IHO Task 2.2.2)
C	Maintain S-58 "Recommended ENC validation checks" (IHO Task 2.2.2)
D	Maintain S-61 "Product Specification for Raster Navigational Charts" (IHO Task 2.2.2)
E	Maintain S-64 "IHO Test Data Sets for ECDIS" (IHO Task 2.2.2)
F	Maintain S-65 "ENC Production, Maintenance and Distribution Guidance" (IHO Task 2.2.2)
G	Assess the impact of other IHO standards on S-52 display specifications
H	Liaise with the NIPWG (IHO Task 2.3.2)
I	Maintain the ENC production and portrayal sections of the IHO website (IHO Task 2.2.2 & 2.3.2)
J	Conduct the 2015 and 2017 meetings of ENCWG and its sub-group(s) and project team(s) (IHO Task 2.2.1)

## Work items

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A.1	Resolve any problems or errors identified in the current editions of S-52 and its Presentation Library	H		2009	Permanent	O	Thomas Mellor	S-52	

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B.1	Resolve any problems or errors identified in the current edition of S-57	H		2011	Permanent	O	Thomas Mellor	S-57	
B.2	Study the possibility to encode information features as New Objects (see S-57 supplement) to avoid caution area objects (CNTARE) in some cases, e.g. to encode T&Ps”	M		2014	2015	O	Richard Fowle (IC-ENC)		
C.1	Monitor the implementation of the new edition of S-58 and keep the recommended checks up to date	H		2003	Permanent	O	Richard Fowle (UKHO)		
C.2	Resolve any problems or errors identified in the current edition of S-58	H		2003	Permanent	O	Richard Fowle (UKHO)		



Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
C.3	1. Restructure S-58 to provide a more logical means of data validation.  2. Investigate how the new version of S-58 can be used to implement a minimum validation standard for all ENCs.	H	Edition 5.0.0 June 2014	2012	2016	C	Richard Fowle (IC-ENC)		
E.1	Resolve any problems or errors identified in the current edition of S-64	H			2017				
E.2	Investigate expanding S-64 to improve its usefulness for both OEMs and type approval authorities	H	Edition 4.0.0	2012	2017	C	Thomas Mellor (UKHO)		
F.1	Monitor and assess proposals for amending S-65	L			Permanent	O			
H.1	Liaise with the NIPWG	H							
I.1	Maintain the ENC production and portrayal sections of the IHO website, and support FAQ and Encoding Bulletins	H		2003	Permanent	O	Jeff Wooton (AHS)  IHB (ADDT)		Include posting EBs and PBs

**Meetings (Task J)**

<b>Date</b>	<b>Location</b>	<b>Activity</b>
2-6 Feb 2015	Ottawa, Canada	ENCWG-1
14 – 18 March 2016	Tokyo, Japan	ENCWG-2

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