ENCWG Working Group 2 Meeting
Genoa, Italy (20 - 22 March 2017)

Draft Minutes

Chair: Thomas Mellor (UKHO)
Vice Chair: Mikko Hovi (Finland)
Secretary: Anthony Pharaoh (IHO Secretariat)

Annexes:
Annex A – Actions
Annex B – Agenda
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WG Member abbreviations:

AM - Arno Meurink (NL)
CdM - César Reinert Bulhões de Morais (BR)
CM - Christian Mouden (FR)
CT - Cristina Tirone (IT)
DG - Darja Günter (EE)
EK - Ed Kuwalek (IIC)
FM - Flávia Mandarino (BR)
FMK - Friedhelm Moggert-Kaegeler (SevenCs)
HT – Hilary Thompson (AU)
HB - Holger Bothien (SevenCs)
HP - Hannu Peiponen (Furuno)
JL - Junshik Lee (RoK – KHOA)
JP - Jonathon Pritchard (UK)
JW - Jeff Wootton (IHO Sec.)
KI - Konstantin Ivanov (Transas)
LS - Ludovico Sturla (IT)
MB - Megan Bartlett (US)
MH - Mikko Hovi (FI)
MS - Mikan Stamenkovich (US – SPAWAR)
NL - Nick Lemon (AU – AMSA)
OF - Odd Aage Føre (NO)
PP - Patti Parkhouse (CA)
RF - Richard Fowle (DK)
SG - Stefan Gramman (DE)
SO - Sewoong Oh (RoK – KRISO)
SS - Svein Skjaeveland (PRIMAR)
TP - Tony Pharaoh (IHO Sec.)
YB - Yong Baek (RoK – KHOA)

1. Opening and Administrative Arrangements

The Chairman Thomas Mellor opened the 2nd meeting of the ENC Working Group meeting and invited the director of the Italian Hydrographic Institute to address the meeting. Director Sinapi welcomed members to the meeting and wished the WG every success with their work.

2. Approval of Agenda

The meeting approved that agenda without comment.

3. Matters Arising

Minutes of ENCWG1 (Tokyo, Japan – 2016) were approved and the list of actions (paper 3B) from ENCWG1 (Tokyo) meeting reviewed. Norway commented that the action item recorded in section 6.5 (Change S-52 LIGHTS06 CSP text to make provision the selectable display of sector light

descriptions) had not been completed. The meeting agreed that this would be discussed during the proposed breakout group meeting to revise the minor clarifications that had been proposed for the minor new "clarification" editions of S-52 and S-64.

ENCWG1 Action items:

(1). The encoding bulleting action (concerning omni directional lights, "house over water" and navigational purpose) – status **completed**.
(2). IHO Check dataset - write guidance paper for OEMs to add to user guides - status **ongoing**. (**Action 01**).
(3). S-52 Presentation Library 4.0.2. HP reported that this had been **completed**.
(4). Limit of ENC Coverage; for Edition 4.1 – status **ongoing**. (**Action 02**).
(5). S-64 3.0.2 -Boundary display for unofficial data issue – status **completed**.
(6). Isolated danger symbol in un-surveyed areas (UDWHAZ05). Add LNDARE and UNSARE into UDWHAZ05. It was agreed that this is for Edition 4.1 of the PL – status **ongoing**. (**Action 03**).
(7). Add Screen shot of current UDWHAZ in PresLib 4.0 – status **completed**.
(8). Fix MAGVAR Line to use point SY(MAGVAR01) which does not have an offset – For Edition 4.1 of the PL – status **ongoing**. (**Action 04**).
(9). Create screen shots of 15NM and 10NM in different geographic regions send to ENCWG for approval – status **completed**.
(10). UML edits for LIGHTS06 CSP – For Edition 4.1 of the PL – status **ongoing**. (**Action 05**).
(11). Produce new screen shots for all tests that have omni-directional lights – status **ongoing**. (**Action 06**).
(12). Update UDWHAZ05 CSP to compare the feature VALSOU with the "largest value of either the 'Safety Contour' and the 'Safety Depth'" - UML edits Safety Depth – For Edition 4.1 of the PL – status **ongoing**. (**Action 07**).
(13). OEMs to test display based on new rules in UDWHAZ05 CSP – status **ongoing**. (**Action 08**).
(14). Create new test in Chapter 7. Detection and Notification of the Safety Contour – status **completed**.
(15). Extended use of NEWOBJ for V-AIS (Wind Farms) – status **ongoing**. (**Action 09**).
(16). Object names. Change LUTs to add OBJNAM for LNDMRK category of landmark Wind Turbine and OSPARE. BSH to investigate with an OEM the best fit for the text label alteration for text instructions HJUST, VJUST, XOFFS, YOFFS in the LUTs– result to be circulated to the ENCWG (NOTE: The solution should not overly clutter the ECDIS screen) - For Edition 4.1 of the PL – status **ongoing**. (**Action 10**).
(17). Modify ENC test dataset to add LNDMRK – Wind Turbine with two LIGHTS features – status **ongoing**.
(18). UOC – Make provision for Above Water Buildings – status **completed**.
(19). S-58 – Make provision for Above Water Buildings – status **completed**.

4. Matters Arising from HSSC-8 (Monaco)

4A HSSC Actions for ENCWG

The following actions from HSSC8 were discussed:

Action HSSC8/05 requiring the ENCWG to monitor any possible impact of the work on the agreed e-navigation outputs on ECDIS related standards and S-100 related standards respectively is ongoing.

Action HSSC8/21 requiring the ENCWG to take over the S-57 related part of the DPSWG responsibilities and make provision in the ENCWG TORs and Work Plan. Action is ongoing.

Action HSSC8/23 concerning the revision of S-65 and S-66. The Chair reported that S-65 had been completed and is out for IHO Member State vote. He encouraged members to ensure that their State votes. Some issues were identified with the S-66 document, and this will be discussed later in the meeting (refer to Agenda 5.8).

Action HSSC8/26 concerning the revision of IHO Website pages has been completed. Closed.

ActionHSSC8/27. The Chair reported that the ENCWG had been tasked to discuss the paper on the development of an additional bathymetry layer in ECDIS for high density bathymetry (bENC) submitted to the last HSSC meeting. He noted that several papers had been submitted and the item would be discussed later in the meeting (refer to Agenda 6.2 and associated action).

Action HSSC8/28. The Chair proposed that guidance for mariners explaining how to use ECDIS Chart 1 in order to check that their systems are displaying symbols correctly needs to be compiled. [Post Meeting Note: This guidance has subsequently been included in a letter "**Checking the IHO S-52 Presentation Library Edition Number in the ECDIS**" that can be found on the IHO web site at http://iho.int/mtg_docs/com_wg/ENCWG/MISC/IHOPreslibChart1final.pdf.]

Action HSSC8/56. The Chair reported that this would be discussed later in the meeting, under the Port State Control agenda item (refer to Agenda 7.4).

4B ENCWG Revised ToRs

No discussion.

5. Review of ENCWG Documents and Work Activities

5.1 S-52 - Specifications for Chart Content and Display Aspects of ECDIS

The Chair reported that the WG had held a sub-WG meeting in Feb 2016 to review comments provided by stakeholders for S-52 and S-64. This resulted in the production of a consolidated list of revisions, and these were endorsed at the Tokyo meeting. He noted that ECDIS manufacturers had been invited to review the changes to the respective documents and reported that no comments had been received to date. He proposed that OEMs must have sufficient time to report back and once this has been completed the new editions will be published.

Furuno reported that for S-52 Ed 4.0.2, they had no comments, however they did have a few minor comments for S-64. It was proposed to have a breakout session during the meeting to address these outstanding issues. It was agreed to also discuss the Norway comment - Lights Section – LS (DASH, 1, CHBLK). The Chair confirmed that this will also be discussed during the breakout group.

It was concluded that the Chair should invite CIRM members to review the documents.

The Breakout Group report back to the meeting on their outcomes regarding S-52. It was agreed to include a note concerning the issue of a space between the light characteristic and the light colour in a displayed light description. This will allow for both presentation styles. It was decided to also include a note on how to reduce clutter. It was agreed that the new edition should be published on 1 June 17. (**Action 12**).

5.1C MAGVAR Linetype - Appropriate Symbol

HP noted that Furuno had identified some issues while testing their implementation of PresLib Edition 4, which relate to what is appropriate for presentation of MAGVAR. The current and previous editions of PresLib use the symbol MAGVAR01 for point geometry and symbol MAGVAR51 for line and area geometry. He noted that the presentation of point type MAGVAR object is clear but the presentation of a line is very confusing due to the offset applied to SY(MAGVAR51). There are two possible fixes; change symbol instruction SY(MAGVAR51) to SY(MAGVAR01) for lines or use the original shape of MAGVAR51, but move the pivot point to the centre of the symbol.

The Chair reminded the meeting that the issue of MAGVAR had been considered at the February 2016 meeting. It had not been included, as it would have resulted in a correction (and not a clarification) to the document.

It was agreed that no action to be taken for the clarification version of the S-52 PresLib in preparation but the change should be made at the same time as S-101 portrayal will be made available for the majority of on-board end users (refer to Action 04).

5.2 S-57 - IHO Transfer Standard for Digital Hydrographic Data

JW reported on the draft Revision of the UOC. He summarised the changes and invited members to comment. Revisions include incorporation of extant ENC Encoding Bulletins and FAQs; changes to take account of the revised IHO Convention; strengthened wording for "(T) and (P)" NtMs; and radar conspicuous features. Several clarifications were also included. The WG approved the changes, and its submission to the IHO Council via the HSSC for endorsement. (**Action 13**).

France proposed a new S-58 check for consistency of populated temporal attributes on the components of an aid to navigation (master/slave relationships) in conformance with one of the changes in the revised UOC. This was not agreed for the current new Edition of S-58 in preparation.

5.3 S-58 - Recommended ENC Validation Checks

RF reported that many inconsistencies had been found in S-58 Edition 5.0.0 and this had resulted in the development of a new Edition 6.0.0 of the document. The new document was sent to MS via CL 21/2017 for approval. The New Edition includes checks classified as "Critical", which will constitute a mandatory "minimum requirement" that all official ENCs must satisfy.

The Chair noted that he had a discussion with IIC about the production of test datasets that contained the Critical checks that could be used as a check mechanism for software developers and HOs to test conformance with S-58 Edition 6.0.0. RF proposed that validation software should be accredited and questioned whether the IHO should be doing this. The Chair suggested that the test datasets could be used as part of the validation mechanism. CM stressed that ideally, the datasets

should include tests for all of the checks, but conceded that it would be difficult to achieve, however the Critical errors must be covered to start with.

The Chair confirmed that the WG has an obligation to produce the datasets, and they may have to be produced under contract. In view of potentially high costs, he agreed that the test datasets should be confined to the Critical checks only, but the full set of checks should be a long term goal. (It was estimated that there are about 140 Critical checks). It was decided to investigate if the development of the datasets can be funded by the IHO project funds. (**Action 14**).

SevenCs noted that the issue relating to attribute "value" does not appear to have been taken into account on Edition 6.0.0. This was discussed within the S-58 Sub-WG, which held a breakout meeting during the week, which continued after the conclusion of the NCWG2 meeting.

Report back from the breakout group: The late comments submitted by ESRI, Caris and SevenCs were discussed and a revised Edition 6.0.0 of S-58 prepared by the Sub-WG. Denmark will submit the comments and the revised draft as part of their response to CL21; and other MS attending the meeting that had not yet responded to CL21 were encouraged to support the revised document and comments submitted by Denmark. These will be taken into account when compiling the final version for publication. (**Actions 15**, **16**).

5.4 S-62 - List of Data Producer Codes

TP reported that the S-62 List of Data Producer Codes, which was generated from the old Registry application, was not transferred as a Register to the new IHO Registry application developed by KHOA, and has been moved to an interim standalone application. The S-100WG had discussed a new model for the Producer Codes database. The new model is intended to cater for new S-10X Producer Codes, but will also maintain compatibility for S-57 requirements. He noted that the S-100WG had agreed an action to develop the Producer Code application that will cater for S-100 and S-57 ENC requirements. The new application will be integrated into the IHO Registry application. (**Action 17**).

5.5 S-63 - IHO Data Protection Scheme

The Chair reported on the status of the S-63 publication and stated that one of the most significant improvements is the ECDIS update status report, which is located at Annex C of the document. It allows the mariner to easily demonstrate that they have all of the necessary ENCs and associated Updates. Given that the ENCWG is now responsible for the maintenance of S-63, the Chair invited WG members to review the new section of the document (Edition 1.2) and report any issues/comments to him as soon as possible. (**Action 18**).

HP noted that any ECDIS approved in conformance with the new Edition 4 of IEC 61174 must have this new function included.

5.6 S-64 - IHO Test Data Sets for ECDIS

A new Clarification version (3.0.2) of S-64 has been prepared to fix issues that had been identified in both the document and in the datasets. The documents and datasets have been included on a Github site in order to facilitate future maintenance. JP encouraged members to access the site and

review or update the datasets. Once all of the corrections/changes to the datasets have been accepted, they will be committed onto the master version on Github. He requested that ECDIS manufacturers should return any comments on the document and data sets to him by 01 May 2017. (**Action 19**).

HP reported that CIRM are developing a set of ECDIS Tests that will need to be performed annually as an Annual Performance Test (APT) regime. It is anticipated that the ECDIS APT will ensure that in-service ECDIS are capable of satisfying all the requirements for ECDIS as laid down in SOLAS regulations V/19.2 and V/27.

5.6B Issues in screen samples of S-64 Ed 3.0.1 - Centred symbols visible

HP reported that some centred symbols in the test charts AA5STNDR.000 and AA5OTHER.000 are not visible when ENCs are drawn at their compilation scales. He proposed that an explanatory note should be included for tests 3.1.2 (pictures 1 & 2), 3.1.3 (picture 1), 3.1.4 (picture 3), 3.1.5 (pictures 2 & 4) and 3.1.6 (pictures 2, 3, 4, 5, 6 & 7). It was agreed to draft an appropriate note for inclusion in the document during the Sub-WG meeting. The note was subsequently drafted and accepted for inclusion.

5.6C IHO Check Dataset Issues

HP reported that the check data set has been a valuable tool which has helped guide the creation and publishing of the new edition 4.0 of the S-52 PresLib and the related S-64 test instructions. He stated that, if the Check Data Set is used in an ECDIS that has been upgrade to PresLib Ed 4.0, then the resultant output will be different to what is described in the accompanying documentation.

In order to cater for this, HP proposed two ways to proceed; either withdraw the existing Check Data Set or create a new Edition of the Check Data Set. If a new Edition is produced, it should be compliant with the new Edition 4.0 of the S-52 PresLib.

The Chair noted that with the improved tests for ECDIS, the systems should be much more robust and he was of the opinion that issuing a new check dataset would send a negative message leading users to believe that there are still issues to be checked. The meeting decided that after the 31st August 2017 the PresLib Edition 3.4 Check Data Set will be removed from the IHO website and will no longer be distributed by VARs. ECDIS Chart 1 will be used for ECDIS checks with ECDIS compliant with PresLib Edition 4.0 (refer to action HSSC8/28 and notes for Agenda item 4A above). (**Action 20**).

5.7 S-65 - ENCs: Production, Maintenance and Distribution Guidance

The Chair reported that the new Revision 2.1.0 of S-65 had been completed and sent out for MS approval, via CL 16/2017 on the 10th February 2017. The closing date for MS votes is 15 April 2017, after which the new Revision will be posted on the IHO web site. The Chair encouraged WG members to check with their home offices and to provide their vote before April 15, if they had not yet done so. (**Action 21**).

5.8 S-66 - Facts about Electronic Charts and Carriage Requirements

JW informed the meeting that HSSC5 had established a special Project Team to produce a revised edition of S-66. This task group was not able to complete the work due to resourcing issues, and the

task was moved under the responsibility of the ENCWG after the reorganization of the HSSC WGs (HSSC7). In 2016 a draft document was prepared by the ENCWG, but this work did not take into account the work done by the initial Project Team. JW prosed that the IHO Secretariat integrate the proposals made by the Project Team and produce a consolidated Edition 1.1.0 for consideration by the IHO Council in October 2017 subject to prior endorsement by the HSSC by correspondence. This was agreed by the meeting. (**Action 22**).

5.9 Updates to the IHO webpage *ENCs, ECDIS and S-100*

The Chair reported that, with the reorganisation of the WG under HSSC, some of the content relating to the ENCWG had become disjointed and needed to be restructured. HP requested that the S-100 content on the *ENCs, ECDIS and S-100* page of the IHO website should be separated from the S-57 content, as the currently (mixed) structure is confusing.

The Chair reported that as of 31 August, the Check Data Set will be removed and the guidance on using ECDIS Chart 1 to check their ECDIS should be promoted (see Agenda 5.6C above).

HP requested that the list of ECDIS stakeholders should not be available as an open list on the IHO web site, and proposed that it should be for internal IHO use only. KI supported this, and noted that he receives numerous queries that should not be directed to him as a result of the information on the list. He proposed that the contact information should be the service contact and not his contact details. The IHO Secretariat reminded the meeting that the list is referenced in other documents, and therefore cannot be removed at this stage. It was agreed to remove the contact email address and to only provide the URL link to the stakeholder's home page (where the relevant contact information would probably be included). (**Action 23**).

HP suggested that the information on the *ENCs, ECDIS and S-100* section is too confusing and all S-57 / ECDIS guidance needs to be separated from the S-100 content. This was agreed. (**Action 24**).

The Chair reported on the new portrayal contained in ECDIS Chart 1 – which will be used to replace the PresLib Ed 3.4 Check Data Set from 31 August 2017. He noted that the IHO will need to communicate this to Port State Inspectors. (**Action 25**).

The Chair reminded the meeting that HSSC7 action 38 required the WG to consider the impact of the implementation of the new Editions of S-52 Presentation Library and S-64, on the ECDIS Check Data Set and associated instructions. This was discussed at the first ENCWG meeting in Tokyo and resulted in the production of the document '*Checking the IHO S-52 Presentation Library edition 4.0 in ECDIS*'.

6. ENCWG Proposals

6.1 Presentation of Light Description String

The Chair noted that Navtor had reported that there are some inconsistencies between IHO standards with regard to how a displayed light description (string) should be structured. These relate to the use of full stops and insertion of brackets and spaces.

HP reported (see paper 6.1B) that there are inconsistencies between S-4 and S-52. S-52 is not clear enough on how the light description string should be structured and this is introducing

inconsistencies between systems. He reminded the WG that it had been decided at a previous meeting that a signal group of "(1)" should not be displayed, but was still included in some of the S-64 graphics.

After further discussion in the breakout group, it was decided that the S-64 graphics required amendment to remove any displayed signal groups "()" or "(1)" in light description as required. Further, it was agreed to amend clause 10.6.3 of the S-52 PreLib to clarify that a displayed light description can be shown with or without a space between the light characteristic and the light colour. (**Actions 26**, **27**).

6.2 High density contour in ENCs (bENC) [Action HSSC8/27]

SG reported on the paper presented to HSSC8 and proposed that there should be a global standard for bathymetric ENCs. He proposed that the 5Mb limit restricts the inclusion of high density contours in standard S-57 ENCs and there is a need for a new bENC Product Specification that allows the data to be updated frequency. Another advantage of creating a separate product specification is that bENC data can be switched on/off as an overlay.

He proposed that there is a demand for a bENC product, and if the IHO does not produce a specification, others will. He noted that there should be very little impact for the WG as Germany is willing to lead the work. Germany sees the bENC as a complimentary dataset to the ENC, and proposed that it should only be used with an official ENC. Furthermore the inland ECDIS community have adopted the specification, and it would be beneficial for mariners to be able to use a common bathymetry specification. He stressed that it would be voluntary for OEMs to add the required bENC extension to their ECDIS functionality. He reminded the meeting of the HSSC action to initiate some work regarding bENCs, to discuss the issue and to explore various existing options, possibly under a new ENCWG Project Team.

Australia reported that they are also producing higher resolution bathy ENCs, but they include high resolution contours in their Nav Purpose 5 Navigational Purpose. The underlying bathymetry must however satisfy CATZOC A1. AHO divide their cells into smaller geographic areas where required to get around the 5MB limit.

UKHO reported that they also produce high density bathy cells. They have followed the same approach as the Australia. They work with the harbour authorities to produce decimetre level contours and have been able to reduce their production cycle to one day for updating the high resolution bathy content. The advantages are: data is official S-57 data; there is no need for a new product specification; and no need to make changes to ECDIS software to accommodate for the new product data. They are also reducing the size of their geographic cell limits in order to get within the 5MB limit. UK questioned whether there is a need for a new Product Specification for bENCs.

France reported that they supported the German proposal noting that there is a need for high density bathymetry for navigation, and also for other needs as well.

KI reported that, as an ECDIS manufacturer, Transas will need to have an IHO Specification before they implement the new bENC layer in their systems. Germany responded that there will be no obligation for OEMs to implement the bENC data. Furthermore, adopting the UK / Australian

approach will mean that it will no longer be possible to use dredged areas. US reported that NOAA supported the development of the specification and the German and French papers.

France stated that they were in support of the bENC specification, and proposed that a Sub-WG should be formed.

The Chair noted that in view of the lack of consensus on how to precede, the WG should report back to the HSSC on the outcomes of the discussion. (**Action 28**).

6.3 Equivalent T&Ps for ENCs [Action HSSC8/28]

The Chair noted that the issue of the inclusion of the equivalent of paper chart T&P notices in ENCs had been discussed during the HSSC8 meeting. This resulted in an HSSC action for the ENCWG to compile a guidance document providing advice on the promulgation of T&Ps in ENCs. He invited members to review the draft guidance document that had been produced, and proposed that what was still missing was some guidance for ECDIS users (mariners) on how to view the equivalent of T&P notice information in their systems. The meeting agreed to form an "ENC Best Practices" Sub-Working Group to complete the proposed document. (**Action 29**)

RF stated that the concept of temporary ENC Updates is a misconception and proposed that they are just regular Updates, and the guidance provided in the UOC and S-4 is comprehensive enough.

MH reminded the meeting that the guidance on T&P notices in S-4 is located in three different places. He proposed that the guidance document must specify what a "Temporary" ENC Update is and what a "Preliminary" ENC Update is in the introduction section. RF stated that guidance must be provided indicating that it is not necessary for there to be an absolute correlation between T&P update content for ENCs and paper chart.

It was agreed that guidance for the mariner and Port State Control authorities must be included. It was also proposed that the Chair write an ENCWG letter to ENC production system manufactures to ensure that they can produce database Updates for ENC without impacting on the corresponding paper charts. (**Actions 30-32**).

6.4 ENC Update Limitations [PRIMAR]

PRIMAR reported that paper 6.4 had been submitted to the S-100WG2 meeting and a number of issues were raised during subsequent discussions. This had prompted them to withdraw the paper from the ENCWG meeting discussions.

6.5 ECDIS Annual Performance Checks

The chair reported that CIRM had proposed the introduction of Annual Performance Test (APT) for ECDIS. He noted that the APTs were intended to ensure that in-service ECDIS are capable of satisfying all the requirements for ECDIS as laid down in SOLAS regulations V/19.2 and V/27, MSC.232 (82) and MSC.1/Circ.1503.

The Chair reported that there are a number of factors that have necessitated the introduction of the ECDIS APT. In response to the increased use of ECDIS (for primary means of navigation), ECDIS software should to be kept up-to-date with the current standards. The Chair reported that a draft

document describing the APT has been sent to CIRM with comments from MS, and encouraged all WG members to inform their home offices of the guidelines and support endorsement when presented by CIRM. (**Action 33**).

6.6 Presentation of High Resolution Bathymetry

The Chair noted that this had been discussed under agenda item 6.2.

6.7 CATZOC value 6: Zone of Confidence U

The Chair informed the meeting that mariners had reported that M_QUAL with attribute CATZOC = 6 (i.e. "U"nassessed) provides no useful information for computing a meaningful Under Keel Clearance (UKC) allowance. This lack of quality data is forcing mariners to adopt a worst case scenario when entering and exiting port areas and is resulting in some ports being unnecessarily out of bounds for some vessels. Furthermore, Port State Control officers are requiring evidence that navigating officers have taken the value of CATZOC into account when planning routes. In many cases when the CATZOC value encoded within the ENC is "U", the corresponding paper chart source diagram from the same charting authority carries more information.

The Chair proposed that all HOs should be encouraged to review their current ENC production processes and make changes where necessary to encode meaningful values of CATZOC.

CM noted that France fully supported the proposal, and proposed that further guidance should be included in the UOC. Germany and Denmark also supported that proposal.

JW proposed this this could be included in the "ENC Best Practices" document discussed under Agenda item 6.3; and further proposed that in order to emphasise the importance of this issue, consideration should be given to producing an IHO Circular Letter stressing the importance of populating meaningful values of CATZOC in ENCs. (**Action 34**).

7. General Topics

7.1 Input into the next IHO Strategic Plan

There was no paper submitted and no discussion on this item.

7.2 HSSC Work Programme

The Chair reported that S-66 had been added to the ENCWG activities and he invited WG members to review the list of ENCWG activities.

7.3 Outcomes from IMO - NCSR

The IHO Secretariat (TP) reported that the 4th session of the IMO NCSR meeting had taken place at the IMO Headquarters in London from 06 to 10 March 2017.

He reported that the IHO Secretariat (D-Tech) had provided a report on the monitoring of ECDIS issues and ENCs, and had confirmed the cut-off date of 31 August 2017 for earlier versions of the IHO standards for ECDIS. No comment or feedback was provided by the WG on this issue.

TP highlighted that it was reported that some items of MSC.1/Circ.1503 (ECDIS – Guidance for Good Practice) that related to operating anomalies in ECDIS should no longer be relevant for ECDIS updated for the latest versions of the ECDIS-related Standards. The Sub-Committee were invited to consider the merit of revising the Circular in connection with the possible development of Port State Control (PSC) guidelines on ECDIS.

TP reported that the IHO Secretariat will continue to monitor the Data Presentation and Performance Check and will provide a reminder of the deadline for implementing the revised set of IHO Standards related to ECDIS. The Chair noted that the UKHO will be issuing a press report providing more information for mariners on the subject.

7.4A Port State Control Feedback on ECDIS

The Chair reported that Action HSSC8/56 tasked the ENCWG to consider the possible concerns about the carriage and operation of ECDIS, raised by Port State Control (PSC) authorities. Feedback from Member States on their survey of PSC procedures has been collated and a preliminary analysis of their responses carried out. The main objective of this work is to compile guidance for HOs, maritime safety agencies, PSC authorities and mariners, in a single document. He noted that PSC inspectors should follow the guidelines that are available in their respective MoUs. They should check if ENCs are updated (including for Notices to the Mariners (ENC Update) information) and they should check if appropriate charts are available for intended voyages. Checks on ECDIS software to ensure that they are updated according to the latest IHO Standards must also be carried out. Although a few MS indicated that their PSC inspectors consider that the current generic procedures are sufficient, there was general agreement that further guidance should be developed. The meeting noted the report and the Chair proposed to provide feedback to the next HSSC meeting in the ENCWG report. (**Action 35**).

7.4B AUS Port State Control Issues regarding ECDIS & ENC (AMSA - AHS)

HT reported that many Port State Authorities are requiring that mariners are able to use their ECDIS properly and they must be able to demonstrate that their ECDIS are maintained and have updated ENCs. She highlighted some concerns that have been provided by the Australian Maritime Safety Authority (AMSA). These included issues that relate to ECDIS updates and permits, AIS data inconsistencies, ENC Update failures and ECDIS Hardware and Software failures (including hard disk failures). The meeting noted the report, which will be included with the responses to IHO CL 67/2017.

7.4C AUS Examples of ECDIS-ENC Unofficial Data Warnings

HT noted that there were reports on inconsistencies relating to how “unofficial data” warnings are being reported in ECDIS. She proposed that all ECDIS software should display an “Unofficial Data” warning when non-official data is being shown within the current display window. She noted that inconsistencies occur when the user does not have the full range of cells and this often causes problems at certain zoom levels. This also sometimes occurs when unofficial data is loaded. HP proposed that the ECDIS world background chart should also trigger the same warnings.

The meeting noted the report and agreed that the issues identified should be considered during the preparation of the next edition of the S-52 Presentation Library.

7.4D NZ Response to CL67-16 Deficiencies related to the carriage of ECDIS

The Chair invited the meeting to review the spreadsheet provided by New Zealand (i.e. their response to CL67/2016) and agree that they should be taken into account as part of item 7.4A. This was agreed by the meeting.

7.4E Improvement of ENCs display on ECDIS

CM reported that the paper had been presented to the S-100WG as paper S-100WG2-11.7 during the previous week. It had been produced as a result of complaints from the French navy about ENC portrayal in ECDIS. He proposed that many of the issues were due to ENCs having been derived from the paper chart, i.e. they include the same content as the paper chart not taking into account the different ways from the paper chart that ECDIS is used for navigation. He noted that the S-100WG2 members had agreed that the issues described in the paper needed to be considered by the NCWG, ENCWG and the S-100WG collectively. He recommended that these three WGs form a joint Sub-WG to address the shortcomings that had been highlighted in the paper. He reported that the S-100WG2 meeting had agreed to the formation of the Sub-WG and the following WG members agreed to participate: France (lead), Australia, UK, Norway, Denmark, Estonia, Italy, Brazil, PRIMAR, Furuno, IIC, Transas, IALA, IC-ENC(?), US (NOAA), Canada (t.b.c), 7Cs, IHO Sec. (JW).

CM proposed that the sub-WG should commence by making an assessment of the current situation regarding the display of ENCs on ECDIS. The assessment should contain an exhaustive list of issues that need to be resolved. A study should be carried out to determine how to improve the standards in order to solve the issues reported. SevensCs questioned whether this proposal will influence the accuracy of the data? JW noted that ENCs should be encoded from higher resolution source data (when available) and not from paper charts. IIC agreed with the paper and proposed that finding a solution to the problem must take account of the S-52 PresLib and how ECDIS manufacturers are implementing it.

The Chair proposed that the study should be based on the latest edition of the PresLib and it must use real world ENCs. It was agreed that a preliminary breakout group meeting should be convened to discuss the scope of tasks required, and should also consider the production of an "Encoding Guidance" document for ENC producers. This could be an annex to the ENC portrayal issues roadmap document being prepared by the ENCWG Correspondence Group. IIC proposed the inclusion of a diagram to illustrate how to improve data rendering without having to make changes the PL. This should also address the issues of ENC clutter. Final proposal(s) to be completed by February 2018 for consideration by ENCWG meetings (refer to Roadmap at Annex D). (**Action 36**).

8. Any Other Business

8.1 Omnidirectional Lights

KI reported on the ENCWG1 action for Transas to investigate the impact of the S-52 changes for major omnidirectional lights. He reported on the test to use VALNMR greater than 10NM and VALNMR greater 15NM in order to determine if the clutter of the surrounding the light circle symbols can be reduced. It was clear from the screenshots from various scales and different areas that further work needs to be done to encourage HO to adopt consistent way of encoding VALNMR. He proposed that it would be beneficial to adopt the proposed change to VALNMR, i.e. to change

the value to greater than 15NM for the next revision of the PresLib. The meeting agreed in principal and noted the report.

9. Review of Meeting Actions

A review of the draft list of meeting actions was carried out and included as annex B to the minutes.

10. Date and Venue of Next Meeting

The next meeting was tentatively agreed to take place in Australia (Sydney or Wollongong) during the week starting 16 April 2018 (to be confirmed).

11. Close of Meeting

The Chairman thanked the WG members for their active contribution and also thanked the Italian Hydrographic Institute for hosting the meeting and for their excellent support and warm hospitality.

Annex A

ENCWG2 – Genoa, Italy (20-22 March 2017)				
Action Items				
No	**Item**	**Action**	**Who**	**Status**
01	3	[Action ENCWG1/02] IHO Check Dataset – Instructions check ECDIS legend for edition number. Write guidance paper for OEMs to add to user guides.	Chair	Ongoing
02	3	[Action ENCWG1/04] S-52 PL 10.1.7 Limit of ENC Coverage: Non-IHO data on the display – Reword to always display over non-ENC data. Draft new section – for PL Ed 4.1.	Chair	On Hold
03	3	[Action ENCWG1/06] S-52 PL UDWHAZ05 Isolated danger symbol in unsurveyed areas – Add LNDARE and UNSARE into UDWHAZ05 – For Edition 4.1 of the PL.	EM(?)	On Hold
04	3	[Action ENCWG1/08] S-52 PL Appendix D – Look-up Table Listing for Object of Type 'L' – Fix MAGVAR Line to use point SY(MAGVAR01) which does not have an offset – For Edition 4.1 of the PL.	Chair	On Hold
05	3	[Action ENCWG1/10] S-52 PL LIGHTS06 CSP – Depending on outcome of testing of new rules for displaying omnidirectional lights, update CSP – For Edition 4.1 of the PL.	EM(?)	On Hold
06	3	[Action ENCWG1/11] S-64 – Depending on outcome of testing of new rules for displaying omnidirectional lights, new screen shots for all tests that have omnidirectional lights – For Edition 3.1 of the S-64.	HP	On Hold
07	3	[Action ENCWG1/12] S-52 PL UDWHAZ05 CSP – Update UDWHAZ05 CSP to compare the feature VALSOU with the "largest value of either the 'Safety Contour' and the 'Safety Depth'" - UML edits Safety Depth – For Edition 4.1 of the PL.	EM(?)	On Hold
08	3	[Action ENCWG1/13] Test display based on new rules in UDWHAZ05 CSP.	OEMs	Ongoing
09	3	[Action ENCWG1/15] Extended use of NEWOBJ for V-AIS (Wind Farms) – BSH to work with NCWG on encoding.	BSH	Ongoing
10	3	[Action ENCWG1/16] Object names. Change LUTs to add OBJNAM for LNDMRK category of landmark Wind Turbine and OSPARE. BSH to investigate with an OEM the best fit for the text label alteration for text instructions HJUST, VJUST, XOFFS, YOFFS in the LUTs– result to be circulated to the ENCWG (NOTE: The solution should not overly clutter the ECDIS screen) - For Edition 4.1 of the PL.	Chair/BSH	On Hold
11	3	[Action ENCWG1/17] S-64 – Modify ENC test dataset to add LNDMRK – Wind Turbine with two LIGHTS features.	HP	Ongoing
12	5.1	Invite CIRM to review the S-52 and S-64 clarifications and provide any comments to the Chair by 30 May. Compile a consolidated list of new changes to the PL. Draft an IHO letter to OEMs requesting comments by 31 April. (Document publish date is to be 1 June 17).	Chair	In Progress
13	5.2	Request HSSC chair to obtain HSSC endorsement of UOC Revision 4.1.0 by correspondence – for submission to the IHO Council.	Chair/ IHO Sec.	Completed

14	5.3	Investigate what funds could be made available for the development of test data sets for S-58 critical errors. If funds available, seek approval and place contract for their development.	Chair/IHO Sec.	In Progress
15	5.3	Ensure that the items identified during the S-58 breakout group work are included in MS responses to CL21 (requesting approval of S-58), so that they can be taken into account before the final document is released.	DK and other MS	Completed
16	5.3	Prepare final version of S-58 Edition 6.0.0 based on MS responses to CL 21/2017 for publication.	IHO Sec.	Completed
17	5.4	Redesign the S-62 Producer Code database to cater for S-100 requirements, and integrate it into the new IHO Registry server application. (NOTE: Also S-100WG action.)	IHO Sec./ KHOA	
18	5.5	Review the new version of S-63 (Edition 1.2), in particular Annex C, and report any issues or comments to the ENCWG Chair.	All	
19	5.6	Review new Clarification version (3.0.2) of S-64 and associated test datasets and provide any comments to JP before 01 May 2017.	All/OEMs	Time Expired
20	5.6	Remove the PlesLib Edition 3.4 Check Data Set from the IHO Website after 31 August 2017.	IHO Sec.	Pending
21	5.7	ENCWG members to ensure that their home offices return their CL voting papers for the approval of the new Revision 2.1.0 of S-65.	All	Time Expired
22	5.8	Complete the S-66 document to include the ENCWG consolidated comments and the work of the S-66 Project Team, and produce an Edition 1.1.0 for consideration by the 1st IHO Council meeting in October 2017 (subject to prior endorsement by the HSSC by correspondence).	IHO Sec.	Completed
23	5.9	Amend the *Information on ECDIS Software* page of the IHO web site to remove manufacture contact information.	IHO Sec.	
24	5.9	Restructure the IHO web pages to separate the content for the current ENC standards and resources, and the S-100 standards and resources development work. (NOTE: Also an S-100WG action).	Chair/ IHO Sec.	
25	5.9	Produce text to advise Port State Inspectors (and others) on what will happen on the 31 August, when the PresLib 3.4 Check Data Set will be removed from the IHO web site, and informing on the ECDIS Chart 1 check that may be used to check compliance to S-52 Edition 4.0.	S-52 Sub-WG	Completed (?)
26	6.1	Amend S-64 graphics to remove any displayed "()" or "(1)" values for signal group.	HP	
27	6.1	Amend S-52 PresLib clause 10.6.3 to clarify that a displayed light description can be shown with or without a space between the light characteristic and the light colour	Chair/ IHO Sec.	Completed
28	6.2	Report to the next HSSC meeting on the outcome of the bENC discussion.	Chair	
29	6.3	Call for WG volunteers to (a) lead, and (b) participate in, the "ENC Best Practices" Sub-WG.	Chair	

30	6.3	Develop guidance for MS on including T&P information on ENCs.	Chair/ NCWG/ Sub-WG	
31	6.3	Report on the outcome of the T&P sub group to the NCWG (see also Action HSSC8/28).	MH	
32	6.3	Request feedback from ENC production system manufacturers on whether it is possible to produce database ENC Updates (for T&Ps) without having an impact on the corresponding paper charts.	Chair	
33	6.5	ENCWG members are requested to inform their offices of the ECDIS APT guidelines and consider endorsing them when presented by CIRM.	All	
34	6.7	Issue a CL advising MS on the importance of populating meaningful values for CATZOC and requesting them to especially review those areas that are designated as "unassessed". Sub-WG to include this advice in guidance document.	Chair/ IHO Sec./ Sub-WG	
35	7.4A	Provide feedback on issues raised by Port State Control (Action HSSC8/56) to the HSSC9 meeting, as part of the ENCWG report.	Chair	
36	7.4E	Correspondence Sub-WG to carry out study on how to improvement of ENCs display on ECDIS. For consideration at 2018 ENCWG meeting.	Sub-WG (CM Lead)	

Annex B

Agenda			
Document Number Prefix	**Agenda Item**	**Agenda Item / Document Title**	
1. Opening and Administrative Arrangements			[Mellor]
ENCWG02	1A	List of Documents	
ENCWG02	1B	List of Members and Meeting Participants	
2. Approval of Agenda			
ENCWG02	2	Agenda	
3. Matters Arising			
ENCWG02	3A	Minutes of ENCWG1 (Tokyo)	
ENCWG02	3B	Actions from ENCWG1 (Tokyo)	
4. Matters Arising from HSSC-8 (Monaco)			
ENCWG02	4A	HSSC Actions for ENCWG	[Mellor]
ENCWG02	4B	ENCWG – Revised ToRs (revised for inclusion of S-63)	[Mellor]
5. Review of the ENCWG Documents and Work Activities			
ENCWG02	5.1	S-52 - Specifications for Chart Content and Display Aspects of ECDIS (including its components).	
ENCWG02	5.2	S-57 - IHO Transfer Standard for Digital Hydrographic Data (including is components); (See docs 5.2A, 5.2B and 5.2C).	[Mellor/Wootton]
ENCWG02	5.3	S-58 - Recommended ENC Validation Checks;	[]
ENCWG02	5.4	S-62 - List of Data Producer Codes	[]
ENCWG02	5.5	S-63 - IHO Data Protection Scheme	[]
ENCWG02	5.6	S-64 - IHO Test Data Sets for ECDIS.	[]
ENCWG02	5.7	S-65 - ENCs: Production, Maintenance and Distribution Guidance	
ENCWG02	5.8	S-66 - Facts about Electronic Charts and Carriage Requirements	
ENCWG02	5.9	Updates to the IHO webpage ENCs, ECDIS and S-100	[Mellor]
6. ENCWG Proposals			
ENCWG02	6.1	Presentation of Light Description String	[Navtor]
ENCWG02	6.2	High density contour in ENCs (bENC) [HSSC8/27]	[Germany??]
ENCWG02	6.3	Equivalent T&Ps for ENCs [HSSC8/28]	[]
ENCWG02	6.4	ENC Update Limitations	[PRIMAR]
ENCWG02	6.5	ECDIS Annual Performance Checks	[Mellor]
ENCWG02	6.6	Presentation of High Resolution Bathymetry in S-57 ENCs [Mellor]	
ENCWG02	6.7	CATZOC value 6: zone of confidence U	
7. General Topics			[Mellor]
ENCWG02	7.1	Input into the next IHO Strategic Plan	[]

ENCWG02	7.2	HSSC Work Programme	[]
ENCWG02	7.3	Outcomes from IMO - NCSR	[]
ENCWG02	7.4A	Port State Control Feedback on ECDIS	
ENCWG02	7.4B	AUS Port State Control Issues regarding ECDIS & ENC (AMSA - AHS)	
ENCWG02	7.4C	AUS Examples of ECDIS-ENC Unofficial Data Warnings	
ENCWG02	7.4D	NZ Response to CL67-16 Deficiencies related to the carriage of ECDIS	
ENCWG02	7.4E	Improvement of ENCs display on ECDIS	
8. Any Other Business			[Mellor]
9. Review of Meeting Actions			[Mellor]
10. Date and Venue of Next Meeting			[Mellor]
11. Close of Meeting			[Mellor]

Annex C

ENCWG2 Participants			
Member State	**Surname (Family Name)**	**First Name**	**E-mail**
Australia	Thompson	Hilary	hilary.thompson@defence.gov.au
Belgium	Roesbeke	Marc	marc.roesbeke@mow.vlaanderen.be
Brazil	Mandarino	Flávia	flavia@chm.mar.mil.br
Canada	Parkhouse	Patti	patti.parkhouse@dfo-mpo.gc.ca
Denmark	Cardoso	Bruno	bruca@gst.dk
Denmark	Riise-Jensen	Carsten	cr@gst.dk
Denmark	Fowle	Richard	riafo@gst.dk
Estonia	Kuznetsova	Dana	dana.kuznetsova@vta.ee
Estonia	Günter	Darja	Darja.Gynter@vta.ee
Finland	**Hovi (Vice Chair)**	**Mikko**	mikko.hovi@fta.fi
Finland	Engstrom	Stegan	stefan.engstrom@fta.fi
France	Mouden	Christian	christian.mouden@shom.fr
Germany	Ritterbusch	Jochen	jochen.ritterbusch@bsh.de
Germany	Gramman	Stefan	stefan.grammann@bsh.de
Italy	Izzo	Antonietta	
Italy	Marchi	Carlo	carlo.marchi@marina.difesa.it
Italy	Tirone	Cristina	cristina_tirone@marina.difesa.it
Netherlands	Meurink	Arno	aw.meurink@mindef.nl
Norway	Føre	Odd Aage	odd-aage.fore@kartverket.no
Norway	Guttorm	Tomren	guttorm.tomren@kystverket.no
Portugal	Fortes	Isabel	isabel.fortes@hidrografico.pt
Korea (Rep or)	BAEK	Yong	ybaek@korea.kr
Korea (Rep of) KHOA	LEE	Junshik	ljs7979@korea.kr
Korea (Rep of) KHRA	SHIN	Ms Arum	mangoqueen@khra.kr
Portugal	Fortes	Isabel	isabel.fortes@hidrografico.pt
Sweden	Engberg	Hans	hans.engberg@sjofartsverket.se
Sweden	Per-olof	Seiron	per-olof.seiron@sjofartsverket.se
Turkey	Esref	Gunsay	egunsay@shodb.gov.tr
United Kingdom	**Mellor (Chair)**	**Tom**	thomas.mellor@ukho.gov.uk
United States NGA	Li	Eric	Eric.P.Li@nga.mil
United States	Haumann	John	john.j.haumann@nga.mil
Expert Contributor	**Surname (Family Name)**	**First Name**	**E-mail**
C-Map	D'Aquino	David	david.daquino@c-map.com
ESRI	De Puyt	Tom	tdepuyt@esri.com
Furuno	Peiponen	Hannu	hannu.peiponen@furuno.fi
IC-ENC	Hahessy	Elizabeth (Liz)	liz.hahessy@ic-enc.org
IIC	Kuwalek	Edward	edward.kuwalek@iictechnologies.com

Primar	Skjaeveland	Svein	svein.skjaeveland@ecc.no
SevenCs GmbH	Friedhelm	Moggert-Kägeler	mo@sevencs.com
IHB	**Surname (Family Name)**	**First Name**	**E-mail**
IHO Secretariat	Pharaoh (**Secretary**)	Anthony	addt@iho.int
IHO Secretariat	Wootton	Jeff	tsso@iho.int

Annex D

ENCWG Correspondence Group on ENC Portrayal Issues Roadmap
See paper 7.4E

France, Australia, UK, Norway, Denmark, Estonia, Italy, Brazil, Primar, Furuno, IIC, Transas, IALA, IC-ENC(?), US (NOAA), Canada (tbc), 7Cs, IHO Sec.

- Work to be done by correspondence.
- Collect use cases – different Usage Band ENCs, different areas (or routes), different vessels, different holdings/cargo, different ECDIS systems, different distribution/ENC supply methods. Using new version of S-52 PL (4.0.2).
    - All members of the group to examine all use cases at first – possibly divide out tasks later on.
- Develop list of ECDIS display issues; classify according to the issue.
- Analysis.
- Encoding practices for ENC (e.g. ENC first – paper chart as derivative).
- S-101 portrayal.
- Does every member of the group have an ECDIS? (BR and CA do not).
    - Share the workload.

        E.g. Furuno – ECDIS screen shots from 4.0.2 PL ECDIS.
- Set up R&D licenses for ECDIS Manufacturers (Tom).
- Proposals:
    - Encoding practices;
    - ECDIS portrayal.
- Actions to be disseminated between WGs.

Timeline:

- March 2017: Begin.
- March 2017: Develop reporting template (France).
- April 2017: ECDIS upgrades.
- April 2017: Collection of use cases.
- End of June 2017: MS to report findings back to the group.
- October 2017: Draft proposals to take forward to each of the relevant WGs.
- February 2018: Final proposal(s) to take to WG meetings.