

**IHO Colours & Symbols Maintenance Working Group (C&SMWG)  
15th Meeting, BSH, Rostock, Germany, 2-4 May 2005**

**Minutes of IHO C&SMWG/14  
CHS, Ottawa, Canada, 18-20 May 2003  
(version 2.1 – Aug 2003)**

**1. Open and welcome**

Mathias Jonas (Chair) opened the meeting and welcomed the participants (see Participants List – Appendix A). He expressed appreciation to CHS for hosting the meeting, particularly during a holiday weekend. MJ mentioned that a CD containing all input papers is available. He received apologies from some manufacturers. Arve Lepsoe from DnV, Olaf Wenzel from SevenCs and Hannu Peiponen from Navintra. Business cards were collected and copies will be supplied to members in two TIFF files.

Members initials in Appendix A are used throughout these minutes.

**2. Approval of the Agenda**

doc: C&S/14/2A -Draft Agenda

Agenda revision 3.5 was accepted (see Appendix B). No additional issues were raised. (Appendix C is the list of documents for C&SMWG/14).

**3. Approval of the minutes of C&S/13**

doc: C&S/14/3A - final draft Minutes of IHO C&SMWG/13

Minutes were approved without further amendments.

**4. Vice-chairman and Secretary**

Lee Alexander will work as rapporteur at this meeting.  
There were no nominations for either position of Vice-Chairman nor Secretary.

***Outcomes: no action***

**5. Review of action items resulting from the decisions made at C&S13 Hamburg, May 2002:**

- 5.1 Update C&S membership list:  
Doc: Annex C of draft Minutes of IHO C&SMWG/13 (C&S/14/3A)

CR reported that some of the previous members had asked to be removed from the list (updated list is Annex D to these minutes). Chairman of CSPCWG will be added to list (see item 9.1 below).

- 5.2 Incorporate agreed amendments to **C&S Specs 4.2 and PresLib Ed. 3.3.**

MH stated that due to unforeseen delays at IHB, and there still remains work to finalise these two documents. It is hoped that they can be completed by July 2003. Most changes have now been applied. The aim is to have both documents published in October 2003 and incorporate some minor refinements and any other approvals from this meeting. MH mentioned that completion of these documents would help to alleviate the confusion that exists on the status of these specifications.

***Outcomes: timeframes will be built into the road map for the future work of this WG.  
IHB to publish S-52 App2 C&SS Edition 4.2 & PresLib Edition 3.3 in October 2003.***

5.2.a) **Edition 3.3 of PresLib and Edition 4.2 of C&S Specs:** General progress made and proposed issue procedure and date. (Eaton)

**Outcomes: as above**

5.2.b) **Test data set plots.**

MJ showed the plots based on Mickelfirth TDS via projector as implemented by Hannu Peiponen. The main work has been done with some minor text to be amended. ME will review this task but it is available from MJ. it is expected that these digital plots will become part of the IEC Test Dataset maintained by the IHB. Since the UK HO will be producing a new version of the ENC Test Dataset, it may be necessary to revise and harmonise this work. As the digital PresLib is supplementary, it will not be included in S-52 App2 edition 3.3.

**Outcomes: be reviewed by ME and GS and then will be forwarded to IHB (MH) for inclusion in the new S-52 Appendix 4. MJ will organise this task with HP and MH.**

5.2.c) Amendments to May '02 draft version of PresLib edition 3.3 in general - - Doc: C&S/14/5A

ME briefly reviewed the Status of Deferred Amendments – 06' (a 27-page compilation). MJ stated that there might be some additional modifications to this document. MH mentioned that many of these amendments have already been incorporated into C&S 4.2, and PresLib 3.3.

Deferred amendment 06, co.10 (Safety Contour from edges) to be revisited at this meeting (see item 5.3.a) below).

Deferred amendment 06, co 14 (Safe clearance depth for deep wrecks) also to be discussed at this meeting. Draft of tankers has increased to 35 metres. (see item 5.3.b) below)

Deferred amendment 06, co 23: SF has a number of complaints about the text issue (OBJNAM etc on collection objects). There is a need for names of buoys for example. Orientation of text for OBJNAM on C\_ATTR would be useful for OEMs to apply. E.g. north-south channels are problem. Complicated with other text for FOGSIG, etc. Issue for collection objects (to be addressed at a future meeting).

Deferred amendment 06, co 26 (new 3-table colour set) must be decided at this meeting (Agenda item 5.9)

Deferred amendment 06, co 28 (Nav. symbols, including AIS) hand over to IEC (LA) based on draft from WG13.

Deferred amendment 06, cl 29 (New ed. of PresLib). The 12 month implementation period could cause confusion at sea.

**Outcomes: minor changes will be made from this meeting before publication of C&SS 4.2 & PresLib 3.3. The issue of handling OBJNAM for collection objects will be discussed at a future meeting.**

5.2.d) Revision of PresLib Part 2 "**Mariners' Objects**" - Docs: revised "Introduction" to Part 2" (C&S/14/5B) (Jonas), d6.co.28. (C&S/14/5A)

MJ Briefly went through the introduction for Part II of PresLib edition 3.3 pointing out the major changes.

PL includes the mariners objects as a convenient place holder, but IEC is responsible for them.

**Outcomes: accepted as drafted, no further action, ready for inclusion into C&SS E4.2.**

5.3 **Revised CSPs** agreed for C&S Specs 4.2 and PresLib Ed. 3.3

5.3.a) Review briefly all of 15 revised CSPs (item 8 of C&S/13 minutes refers). - Docs: C&S/14/5C "CSP for SAFCON", C&S/14/5D "changes to CSPs" and C&S/14/5K (French paper) on DEPARE02 (see also 8.8 below). (Le Bihan introduction)

Discussion on paper C&S/14/5K

Item 1.1 linear depth areas will no longer be required. Sent to STN Atlas, OSL, Furuno (HP).

Item 1.2 DEPARE02 issue:

Item 1.3 object coincident with cell boundaries: S-57 encoding FSPT/USAG to exterior. ME advised it would be a very unlikely case to have a depth / dredged area boundary coinciding exactly with a cell boundary.

CR advised that this is a minor issue and that depth alarms will be activated by DRGARE anyway.

PB asked if the BSH tests for such situations. MJ responded that it is impossible to test every situation and that it was a very unlikely situation. Currently tests look at the area, not line safety contour. It was asked if line testing was likely by OEMs. Currently this is not done but it was pointed out that you cannot construct safety lines without using the areas. The alarm is triggered on all currently known ECDIS by areas.

ME advised that this situation could be fairly readily corrected but occasionally an extra safety contour may be displayed.

GS stated that OSL has already implemented a procedure to overcome this issue.

SF suggested that this is a training issue and we need a mechanism to communicate these issues, exceptions, etc. The situation can look much worse than e.g. 4. DB stated this would develop with experience of encoders and users. It is difficult to eliminate all examples through coding.

DT asked what happens when approximate lines are involved. PB: prefers his second example.

LA suggested the problem but not enormous, HOs should check for it, don't micro-manage.

An ENC Bulletin could explain what could happen in such an example.

***Outcomes: C&SMWG accepts the possibility of a break or gap in the safety contour in this situation and will remove loop in CSP DEPARE02.***

***CR to advise TSMAD of possible problem resulting from item 1.3 and draft an ENC encoding bulletin.***

5.3.b) Symbolising **WRECKS** –

Docs: C&S/14/5A "Amendment d6'.co.14", C&S/14/5D "changes to CSPs" and C&S/14/5L and C&S/14/5M "non-dangerous wrecks". (Jonas)

ME explained that these wrecks do not display if 'other' is turned off.

MJ advised that few wrecks have known depths and are encoded as depth unknown but non-dangerous. M-4 provides some guidance with these situations.

What about shallower waters <20 m. Is 20m a reasonable default?

DB suggested that encoding agencies have not done their work. This is a default to overcome this.

ME advised that this would require a tricky CSP and really better encoding should be put back on data encoders.

SF suggested this could be a training issue for route planning.

MJ summarised that there are four options: ignore all 'non-dangerous' wrecks (implies >20m) (CR agreed), or allow 20m (M-4) default, or calculate VALSOU using M-4 formula, or put responsibility back on data encoders.

DB suggested that if encoders don't like calculating VALSOU using M-4 formula, they will encode it better.

***Outcomes: accept the WRECKS CSP which calculates VALSOU using M-4 formula, rather than accepting data producers "non-dangerous" attribute value.***

***CR to advise TSMAD of action adopted by C&SMWG and draft an ENC Bulletin.***

5.4 Generate final DAI for **C&S Specs 4.2 and PresLib Ed. 3.3**

Review of current status (Jonas)

MJ advised that there could be minor changes if this group has any issues. Few OEMs use the .DAI files directly, but OSL do and GS raised 3 minor problems to get them to run correctly. (Black adjust01 symbol (digits 39 added at end), PIPSOL06, overscale01 area pattern width).

HP advised that there are already problems in .DAI files but he was prepared to incorporate any issues as no cost.

***Outcomes: MJ will coordinate the minor amendments with PB, SF, GS, ME and HP and sent to the IHB for distribution with the new edition. All amendments are to be placed on the IHO bulletin board (MH).***

5.5 Generate and check **TDS plots** for C&S Specs 4.2 and PresLib Ed. 3.3  
Review of current status was covered in 5.2.b) above.

5.6 **TSMAD issues**  
See item 8 below.

5.7 Prepare **results of workshop** for OEF see Annex G Workshop results of draft minutes of C&S13 (paper C&S/14/3A and see 5.12 below for paper based description) (Jonas)

MJ advised that the outcomes of the workshop were included in minutes of C&SMWG/13 and will be covered in item 6 below.

LA suggested that these outcomes should be added to the IHO web-site? (see also Item 6.5 below).

***Outcomes: no action***

5.8 Review draft **LCD colour calibration amendments**  
Doc: D6.co.27 (C&S/14/5A refers), C&S/14/5E (Eaton)

ME advised the draft was available for review. C&S/14/5E shows what's in C&S spec and what has been changed from the original.

MJ reported that 5 manufacturers have made use of these for LCDs up to 23" with 1024 x 1280 and 1600 x 1200 resolution. For commercial ships 19"-20" is most common, larger is too expensive for these ships. These have been purpose built with back lighting control to lower levels handled remotely, special front plates, amber or grey mirror free but more expensive. One company refused to purchase this special front plate. Contrast for ENC's not suitable for ARCS. Result is very convincing and cost about US\$5000 –6000 each for 20".

MH asked what is TFT? Stands for thin film transistor.

SF asked if C&SMWG is chasing technology for these screens? MJ responded that it is not, but BSH as a test house required a colour calibration procedure.

***Outcomes: MH will add TFT to the acronym list for S-52 document.***

5.9 Continue testing of 3 **new colour tables**  
Evaluation and testing of 3-table colour scheme (Herberg) - Doc: C&S/14/5F

ME advised that Sharon McFadden (Perception Institute in Toronto) produced the 3 colour tables that have been tested. Sharon's review of these tests showed few minor shortcomings but only two charts were used in testing.

SH gave a Power Point presentation on the test results: Bright day (day), high black (dusk) and low black (night). Tests were carried out on two charts on calibrated Transas Navisailor 2400. See document for details. Look at other results for possible consideration by C&SMWG but note it is not S-52 PL. Conclusion: is useful for 95% of those tested.

MJ initiated discussion on what to do next – replace the existing 5 colour tables?

SF suggested it was a subtle change and suggests we adopt simpler approach using 3 choices.

LA suggested that reduced maintenance of the 5 tables makes more sense.

MJ suggested we adopt amendment 26 to include the 3 colour option, supported by GS as the OEM representative.

LA noted that there were no significant changes to night tables.

MJ responded that trials showed that improvements made to night tables have provided better perceptions. Suggested we discuss agenda 5.10 before we make a decision on this issue.

LA advised that AIS symbols on a black background cause problems. Supports 5 to 3 simplification.

MJ asked what if something else was added next year, we won't redo all the tests again.

ME: having 3 (optional) and the existing 5 colour tables is not really a simplification.

MJ: Proposed and C&SMWG agreed that we only support 3 colour tables.

***Outcomes: the 3 colour tables will now replace the previous 5 colour tables as a simplification and will be included in the PresLib E3.3. Minor changes to C&S specs will be made by ME.***

#### 5.10 Initiate **testing of AIS symbols**

Testing of colours for AIS symbols in Singapore (Jonas)

MJ: Florian Motz has written a paper which includes the results of trials conducted in Singapore. Blue targets were found with the most frequency, colour token 'RESBL' was also the best perceptible colour.

LA: Black or white (depending on background) and blue and green AIS symbols are also being tested in Canada. Tested with different background colours and different display types (base, etc). There were objections to the intensity of magenta and white features on day black for example. Used day bright, dusk and night. Suggests all colour changes be decided in conjunction with additional information that may be added over ECDIS.

ME AIS symbol doesn't show up well in shallow water blue, but differentiated AIS from radar.

MJ: this is a compromise solution. Full revision of colours cannot be undertaken at this time.

LA: referred to survey from Australian paper.

***Outcomes: MJ will make formal offer of three colour tokens for use with AIS to IEC, but will also be reviewed at C&SMWG/15.***

#### 5.11 Complete Minutes of C&S 13<sup>th</sup> Meeting Hamburg, May 2002

see draft minutes plus annexes of C&S13 - Doc: C&S/14/3A (Jonas)

***Outcomes: no action***

#### 5.12 **Complete PresLib with paper** description of Symbol Offsets

Draft paper based description of S-52 symbology (Herberg) - Doc: C&S/14/5H

MJ advised that up until now there was this missing component to S-52 PresLib. About 500 pages of descriptions have already been produced but the task is not yet fully complete (SH). It is hoped to complete this task by September for Edition 3.3 if possible.

Where should this document be included: Appendix to PresLib? Consider as new part IV?

GS: will this document be free or cost. Suggested that it be at least at a reduced cost to members who contribute to C&SMWG.

RC advised that the UKHO is preparing a HTML doc linked to S-57 and INT 1 as a powerful cross-reference doc. It could become part of S-57 E3.1 or 4.0?

MJ suggested that C&SMWG would prefer at least some contribution for this document, even if purchased through S-57.

CR suggested that CSPCWG may consider a similar specification for M-4 paper chart symbols, ie include all the dimensions for each symbol, lines, etc.

***Outcomes: to be included as a new part of PresLib 3.3. (SH, MH, ME to be followed up by CR). Consider possible costing and mechanism to obtain funds (MH) before being considered as part of the S-57 annex D 'INT1/S-57/S-52'.***

5.13 Adding text attribute VERCSA to existing list  
Item No. CS04.1.d6'.co.25 – See C&S/14/5A (Eaton)  
ME advised that this was already in the new C&SS.

**Outcomes: no further action**

5.14 **Revise Chart 1 and symbol diagrams** for PresLib edition 3.3 - NDI contract (Eaton)

ME advised that this is an update of the previous version for C&S spec edition 4.2 but as TIFF file. HP has continued to maintain the digital version and it will be available from the IHB in digital form.

SF: finds this a very useful document and uses it all the time for training purposes. Currently it is an addendum to the C&S Spec but should really be part of the PresLib but consideration needs to be given to where it will be held as Chart 1 will go out of date.

**Outcomes: MH, ME to include TIFF file on CD for S-52 Presentation Library and make available from IHO web site.**

5.14.a) Review results of **OEF discussion** - Doc: C&S/14/5J (Jonas)

Discussion was concluded and a TIFF based Chart 1 was considered. No other issues of importance were discussed.

**Outcomes: agreed on OEF not to maintain digital version of Chart 1 and transfer to TIFF (see 5.14 outcomes above).**

5.14.b) Review digital and paper version of symbol diagrams for Ed. 3.3 - Doc: C&S/14/5J.

Update of the hard-copy symbol diagrams is ready to go, together with an alphabetical listing of symbol meanings for these symbol diagrams and a numerical listing of symbol meanings for Chart 1

**Outcomes: will be incorporated into revised PresLib Ed 3.3**

5.15 Lost own-ship problem (reference C&S14/3A "Minutes C&S13 5.27")  
(See also 10 below. Liaison matters with IEC(Jonas).

MJ: dealt with on a number of earlier meetings and agreed to advise IEC to allow a more distinguishable true-to-scale outline of the ship. Could be two forms for small and larger scales. The real problem in narrow channels as there are many parallel lines. Make vessel pattern more than a pointy box. OSL already does this.  
It was suggested that a semi transparent colour such as red would be nice.

**Outcomes: C chairman to raise the issue at WG 13**

## **6. Remaining C&S issues from C&S13**

6.1 **Access to INFORM and TXTDSC** on collection objects - Doc: C&S/14/5A  
d6'.cl.4.(relating to PresLib 8.6.1 for Edition 3.3) and C&S/14/5A d6.co.23.(relating to PresLib 8.6.2) (Eaton)

MJ: There are 2 amendments in draft d6' (cl.4 and co.23) but the solution is not really satisfactory.

CR: S-57 Edition 4 will have to handle collection objects (or relationships) in a different way.

**Outcomes: no further action, appropriate solution is left for the manufacturer.**

**6.2** Symbolisation of **Tunny Nets** (Roberts) - Doc: C&S/14/6C (Jonas/Roberts)

CR: suggested that there needs to be some guidance added to ENC encoding bulletins and S-57 UOC for E4.

**Outcome: TSMAD issue. Sec to propose wording for ENC Encoding Bulletin and UOC for S-57 E4.**

**6.3** Rocks, wrecks and obstructions covered by group 1 object other than DEPARE (C&S/14/3A) and C&S/14/8A)

**Outcome: TSMAD issue. Sec to propose wording for ENC Encoding Bulletin and UOC for S-57 E4.**

**6.4** PICREP edition control (Jonas/ Peiponen)  
(See also item 8.7 below).

MJ: PICREPs are small images attached to objects. S-57 doesn't apply a date of issue, etc. Finns proposed a method to manage this and forwarded to TSMAD but it was rejected it for technical reasons.

GS: if the OSL system is installed with the base cell, it would override if same file name.

DB: Question to Updating OEF but doesn't appear to have been activated. Update by sending out another file but what happens to original file? New file in update, does it override the old one?

RC: Primar holds them in cell directory

BE: HTMLs use same file name, referred to ENC PS.

SF: suggested a new attribute for PICREP

MJ: S-57 change required, more than attribute, version control.

RC: text files in UKHO have date and time stamps for PICREP.

**Outcome: TSMAD issue, no further action for C&SMWG. Sec will raise at next TSMAD.**

**6.5** Use of the C&S OEF and IHO sites – further discussion - Doc: C&S/14/6A - See also 12.3 below. (Jonas/Roberts).

MJ: the OEF should have a container for discussion during the year. Six items from the last meeting were to be placed on OEF for discussion but the Chairman explained that some issues are difficult to discuss on the OEF, while others are general in nature.

LA: opening large topics on OEF may not be useful. Will IHO deal with the issues on display.

MH: gave an overview of the changes made to the new IHO site. A C&SMWG membership list will be added. Minutes, etc, letters to committees on technical issues. Will all be added to this site.

CR: C&SMWG papers were not all added to the site (CHRIS direction) before this meeting as requested. TSMAD includes discussion on OEF, while papers are stored on the IHO web-site, and there is the option of a closed section to members only, if required.

**Outcomes: Sec to follow up how c&s obtains access to the archives for this site. Sec to ensure all papers from C&SMWG/14 are on the IHO site (Tony Pharaoh).**

**6.6** Display priorities with dual-fuelled ECDIS (Roberts).

No action between meeting.

SF: different colour palettes effect on RNCs. Issue if same scale ENC RNC have update capability for RNC, what if RNC was updated but not ENC (does happen because of resources).

MJ: free choice by machine, not C&S issue. But the more current/detailed should be the better.



MH: RNC at large scale over ENC at smaller scale? Discussed at CHRIS (Rob Ward paper), rejected by CHRIS.

**Outcome: no action (continue to monitor if anything relevant for C&SMWG).**

#### 6.7 Funding for S-52 App2 (including PresLib) maintenance.

Doc: C&S/14/6B extract from CHRIS/14 draft minutes (Jonas). **See also 7.2 below.**

MH: discussed at CHRIS last year. Agreed to maintain PL as a core IHO responsibility. Recognised that appropriate funding should be available to C&SMWG for maintenance work on a case by case basis. Directing committee IHB on side.

MJ: Aims: C&S Spec Ed 4.2, paper based description of symbols, DAI files and CSPs and plots Sep-Oct 2003. Issued by IHB Oct 03.

Costs of editions proposed, 1500 Euro for new comers, 500Euroas upda te, free to non HO C&SMWG attendees (Chair to make list for IHB).

Grace period 1 year after issue before mandatory application except for new OEMs which must comply to PL from date of issue.

MH: advise proposed NE on web-site and advise all companies who have already purchased PL.

CR raised the problem with immediate amendments e.g. boundary of non-HO data. What time frames would be given for implementation of such amendments?

MH: new ECDIS have to conform to PL 3.3, what about older ECDIS. Grace period which Type Approval authorities may provide? Which version of PL: 3.2 or 3.3. BSH does not provide any grace period, told to use the latest PL.

ME: no mention of times, dates in procedures about implementation. Encourage manufacturers to take on changes.

MJ: write to all purchases of S-52 encouraging them to upgrade on ships in particular, to new editions. Issue 3.3 will be stopped Oct 2003 till 2004. From end 2005 encoding of linear DEPARE should be handled by ECDIS. Could be extended to 2006 depending on how OEMs react to this. Then advise TSMAD. C&S cannot mandate anything.

BE: advise **TSMAD in Oct 2003, if responses positive.**

MH: why C&S concerned with an encoding issue.

MJ: CSP (NE 3.3) **DEPARE02** for safety contour no longer requires linear DEPAR Es.

GS: type approval (TA) issue - valid for how long?

MJ: BSH do not limit TA, but push by EU to limit TA to 3 years.

CR: after 2005 or 2006, CSP will ignore linear DEPAREs and will be treated as redundant.

LA: potentially this could be done in conjunction with S-57 Edition 4.

MJ: Yes this is the case.

CR: Immediate amendments: to be installed at the next convenient port call. Raise for discussion item on OEF

**Outcomes: Chair to submit a budget request to the IHB based on the work program. Chair to make list for IHB of non-IHO members of the C&SMWG for to help in changing for S-52 C&S Spec and PresLib.**

**IHB to update web-site with information about the proposed new edition of C&S Spec and PL (Chair and ME will draft the letter for purchasers of proposed new editions, outlining the changes, advise about any new pricing, as well as the proposed date for linear DEPARE no longer being required – Chair to monitor the feedback, CR then report to TSMAD in Oct.**

## 7. CHRIS – reports and directions

7.1 C&S13 report to CHRIS/14 and CHRIS decisions about proposed changes to the **IMO Performance Specifications for ECDIS** for buoys and beacons to be removed from display base and suggestions relating to Ferry route (FERYRT) (Jonas)

Docs: C&S/14/6B, C&S/14/7A, C&S/14/7B

MJ: there is inconsistency between the IMO Performance Standards regarding aids to navigation. Letter was sent by C&S to CHRIS highlighting the issue. CHRIS confirmed our concerns and forwarded to IMO.



MH: Jan 03 IHO sent to IMO after their deadline. Accordingly, it was not accepted and the IHO will have to re-submit the issue in Jan 04. IMO would like to address more than one issue. IHO may add WG13 issues to the proposal to IMO. Some objections by France, comments were sent to CHRIS members. No responses received by France.

MJ: Joint IHO-IEC paper to IMO for June 2004 meeting.

PB: explained the issue in paper 7A and attempted a balanced view in this paper. His conclusions were: don't show obstructions under beacons or buoys. Display base alone is not suitable for navigation.

MJ: Operational issue for IMO PS rather than S-52.

ME: came about 9 -10 years ago when C&S followed IMO PS to the letter. Display base required CSP to determine if in deep water and then no longer had consistent display of nav aids. Mariners complained about continuity. Case is based on conflict between various display types, which could easily be solved by a minor 'editorial' change putting us back to being forced to follow IMO PS to the letter.

LA: logic in letter to IMO is still valid. Removes an inconsistency and removes dangers from aids to navigation. Can remove temporarily from display to allow him to see more clearly what dangers may be on base display.

Currently beacons and buoys cannot be removed from display.

MJ: 2 solutions, make clarification that beacons and buoys remain in base display or, follow IMO proposal.

MJ: no new arguments, discussed in Hamburg as well, and C&S was in favour of IMO proposal. Propose that there are no additional issues for CHRIS.

LA: could be discussed at CHRIS/15. Both chart and operational information involved here. Distinctions between ECDIS and INS are not clear at this stage. Seeking cooperation rather than diversion.

***Outcomes: no further action for this group. Will be discussed at WG13 this week in Florida by Chairman for joint IHO-IEC letter to IMO. Chairman will include issue in CHRIS/15 report from C&SMWG.***

**7.2** CHRIS directions to C&S for revision of operational aspects of ECDIS as part of S-52 (Jonas) - Doc: CHRIS/14/7C

MJ: Operational aspects are currently included in S -52 because of the history of its development. An outcome from CHRIS is that all CHRIS technical to IEC TC80 WG7 or WG13. We must look for operational requirements in S-52 main doc, then App2.

MJ advised that in the S-52 main doc, there are a few operational aspects not covered by IMO PS nor IEC 61174. App1 (Updating guidance): symbology for updating is described and many operational things are also described. Mixture of data and operational aspects. Some not applicable today (e.g. keep updates for how long?). Assume if new base cell, all preceding updates can be deleted. App2: mariners symbols have already been forwarded to WG 13 and there are no operational aspects left. App 3 (Glossary of ECDIS terms): not specifically ENCs, S-57. Also targets navigational devices.

Proposes updating issues to WG7 (if reactivated); Glossary to IMO. What remains is small part of App1 and very little from main doc (S-52). Concentrate all S -52 within App2 as the new S-52 and will include PresLib, etc. Becomes the core doc on presentation of Hydrographic features. Cannot be done instantly, but IMO must be willing to take over their tasks. Re-define updating.

MH: defn of 'operational' – MJ: everything beyond digital cartography. E.g. ECDIS must provide route planning, at least 2 positions. These are operational.

LA: Hecht (BSH) and Berg (Chair CHRIS) have suggested this for some time.

ME: updating issues such as areas have hydrographic implications and could make separating operational issues more difficult.

MJ: Operational aspects and updating is NOT core business of C&SMWG. S-52 currently reads like a novel. Consider reorganisation of S -52 as a long time project. Put it to CHRIS first.

SF: sub-group of C&S to do the task?

LA: if we don't do it, CHRIS will do it.

RC: unencrypted data issues from updating.

ME: IEC or IMO as target?

MJ: leave to CHRIS to decide.

MH: ENC definitions? Which body IEC? Other IHO WGs are responsible. Special CHRIS task group may be required to look at all the detail.

LA/MJ: terms could go into IEC 61174 as an appendix. There is also an updating section within IEC 61174 directly from S-52 App1. S-52 will be one of many presentations of the future.

***Outcome: Chairman will report findings of investigations to CHRIS/15 and ascertain if part of our approved work program.***

7.3 Manufacturer's liability: report about CHRIS/14 discussion (Jonas, Huet)

MH: provided a brief background on whether IHO could be liable. IHO/LAC has the study prepared by the Australian Solicitors. The determination by LAC was that the IHO could not be held liable.

***Outcome: no further action.***

7.4 Review of C&SMWG work plan submitted by C&SMWG chairman to CHRIS chairman (Jonas) - Doc: C&S/14/7D

MJ: there is now a work plan template that each of the CHRIS WGs submits.

***Outcome: Chairman to review and present the C&SMWG work plan to CHRIS/15.***

## **8. Liaison matters with TSMAD**

8.1 Report on TSMAD/9 meeting (Jonas) - Doc: C&S/14/8A

MJ: matters from C&SMWG are being taken more seriously by TSMAD. Tightening of encoding practises was generally requested. Several issues are still not on the ENC Encoding Bulletins and will be followed up at the next TSMAD.

A good relationship is developing with Mike Brown, the nominated new Chairman of TSMAD. CR mentioned how effective MJs presentations had been at TSMAD9.

***Outcome: Chairman and CR to review and follow up some issues at next TSMAD.***

8.2 Encourage the coding of EXPSON within ENCs - Doc: C&S/14/8B (Jonas/Eaton)

***Outcome: no further action for C&SMWG, covered in 6.3 above.***

8.3 Report (verbal) on S-57 Extensions Sub-group (TSMAD) meeting Ottawa directly before C&S14 Doc C&S/14/12B refers (Jonas, Roberts)

MJ: tentative report on this meeting is available. The main thrust is to align S-57 E4 with the ISO TC211 suite of standards. There are currently nine work items:

WI 2.1 Data dictionary: foundation of S-57. Two registries, hydrographic and supplementary objects. Maintenance shared on OEF and TSMAD.

WI 2.2: ENC PS early stages, waiting for WI 2.1 to be advanced. S-57 E3.1 to be maintained long term. Major ENC inconsistencies raised. Encoding to be much tighter.

WI 2.3: Imagery and gridded data:

WI 2.4: 3D and temporal objects.

WI 2.5: Metadata - PB produced some examples to test mapping from S-57 to ISO. Raises some problems with mapping.

WI 2.6: Base documents for S-57 E4. Being harmonised with DGIWG work on DIGEST.

WI 2.7: Hydrographic Survey Content Spec: beyond ENC – just starting.

WI 2.8: Portrayal: ISO 19117. Similar to S-52 construction. Re-engineering of S-52 would not help anyone at this stage. In future when there is a new ENC PS, C&SMWG may need to reference it.

CHS may support C&S work with Matt Cowen. Moving beyond the expertise of Cartographers. Unclear as to extents of what has to be standardised.  
WI 2.9: Digital paper chart creation for S-57 ENC's.  
MH: IHO has access to all ISO standards. ISO 19117 may be made available to C&SMWG members.

**Outcomes: papers will be available on IHO web site for C&SMWG members to consider (under TSMAD/S-57 Extensions sub-group). PB volunteered to contribute to investigations about how to apply ISO 19117 to the existing clarifications of the PresLib 3.3 for C&SMWG/15.**

**8.4** General discussion about the implications of S-57 Edition 4.0 for Editions of S-52, Appendix 2.

MJ: C&SMWG cannot start before S-57 E4 ENC Product Specification is available which is not expected until about 2006 at earliest. It is too early to know what the displays may look like e.g. Bathymetry. We do not have the expertise today to be very involved with Portrayals in particular.

**Outcome: members of C&SMWG to monitor the work of S-57 WI 2.2 in particular.**

**8.5** S-57 UOC impact on current and future Editions of S-52, Appendix 2 (Roberts)

CR: proposals are currently being sent to the S-57 Extensions sub-group WI 2.2 ENC PS for Edition 4, which Roberts is the coordinator. If there are issues likely to impact on S-52, these proposals will also be sent to the c&s OEF for input from C&SMWG members. Any responses will be added to the discussion on the tsmad OEF site.

SF: what about new objects and attributes.

LA: separate area on tsmad OEF.

**Outcomes: C&SMWG requested by the S-57 Extensions sub-group to investigate the application of ISO 19117 to the S-52 PresLib in general. PB and SH will initiate this until C&SMWG/15. The most likely option for the future application of S-57 E4 is a mixture of S-57/ENC E3.1 with bathymetric displays.**

**MJ will try and allocate capacity to investigate basic components of such displays to be fundamentally standardised.**

**MJ will report to CHRIS15 and raise the following fundamental questions:**

**To what extent such a presentation has to be standardised or belongs to the core work items of the IHO/CHRIS?**

**Which CHRIS WG will do this work (experience has to be gained first and C&SMWG has no experience to date).**

**8.6** Possible adoption of Inland ECDIS Standard as part of S-57 E4 (Roberts)

LA: workshop to consider harmonising 2 Inland ECDIS standards 30 Jun to 3 Jul 03 in The Netherlands. North America (Army Core of Engineers) and European (under the Rhine Commission) versions. Utilise S-57 Object Catalogue as far as possible.

MJ: registry will host various registers. One register will be ENC objects, another for inland ECDIS.

SF: seamless changeover from river to ENC?

MJ: general structure of both will be the same.

LA: the data dictionary will be the 'catch all' object catalogue. Product Specifications will contain a sub-set of the data dictionary.

MJ: read the S-57 Extensions sub-group minutes to get bigger picture.

MH: what will be the impact on C&SMWG?

LA: many of the new objects will not impact back on C&SMWG. No task for this group from CHRIS (yet?)

MJ: to date there has been no request for the IHO to deal with Inland ECDIS C&S issues.

**Outcome: no action.**

8.7 PICREP edition control (Jonas).

*Outcome: see 6.4 above.*

8.8 Possible issues with false safety contours displayed at cell boundaries due to incorrect coding of the FSTP/USAG subfield when using the new DEPARE02 CSP. - Doc: C&S/14/5K (Le Bihan).

*Outcome: discussed in 5.3a) above.*

8.9 Issues with S-57 UOC 12.8 with new S-57 (Edition 4) objects **BCNGEN** and existing object **PILPNT** - doc: C&S/14/8C (Roberts).

CR: long term issue when new ENC PS is more mature. The issue has been raised on the OEF.

ME: new line will be required in the look up table, but not for E3.3.

*Outcome: no action.*

8.10 S-57 Extensions sub-group proposal to add new attributes for Distance Mark (**DISMAR**). – doc: C&S/14/8D (Roberts)

CR reported that this issue is on c&s OEF for comments, but a gain is an issue for S-57 E4 and will not effect S-52 PresLib 3.3.

*Outcomes: members of C&SMWG please review and comment on the OEF if you wish.*

## 9. Liaison matters with Chart Standardization and Paper Chart WG (CSPCWG)

9.1 **Liaison CSPCWG** report on status of this WG and new edition of M-4, ESSAs and PSSAs (Jonas/Roberts) New doc C&S/14/9A

MJ: 5 new items, ESSAs, PSSAs, Coral areas, Sea lanes and adoption of fairway areas. C&S is only aware of ESSAs and PSSAs. C&S is unable to develop new symbology at such short notice. How to code elegantly? Query TSMAD how they will encode these areas. Offer options for display.

ME: adequately covered by **RESARE**.

MH: strong opposition from IHO MS against new symbols for coral areas.

MH: CHRIS approved new CSPCWG (previously CSC) but now under CHRIS umbrella. Peter Jones UKHO is the new Chairman. New symbols for ESSAs and PSSAs promised by IHO to IMO and hence urgency. Specifications have never been approved by IHO member states. Could result in revised specification and then incorporated into M-4, then C&SMWG consider symbolisation in ECDIS.

CR: symbolisation issues have been raised at CHRIS/15 in an Australian paper.

MJ: the Chairman of the C&SMWG may become a member of the CSPCWG.

*Outcomes: SH to investigate possible display options for coral areas, sea lanes, fairway areas and report to MJ.  
CR to add Chairman CSPCWG to C&SMWG contacts list for copies of minutes, etc.  
MJ and CR to write to Chairman of CSPCWG in spirit of cooperation between our groups, explaining existing options for the display of ESSAs, PSSAs, Coral and Fairways.*

## 10. Liaison matters with IEC WG7 & WG13

10.1 **IEC TC80 WG 7 issues/report**

Report on progress (Alexander)

LA: WG 7 is currently inactive but will reconvene after the publication of IEC 62288 (Nav display by WG13). This will not occur until 2004. The task will be the revision of IEC 61174 as necessary, but no timeframe have been set. Dan Mades been reassigned to other work area and may not continue as Chairman WG7. No urgency for 1 -2 years for WG 7 to meet.

**Outcome: no action.**

## **10.2 IEC TC80 / WG13 issues/report**

Report on progress (Jonas) - Doc: C&S/14/10A

MJ: MJ, LA and CR attending WG 13 in Florida.

Radar route planning, ARPA targets look different. Needs to be in one standard as one symbol. Similarly AIS symbol is required for Integrated Navigation Systems (INS). See diagram in paper. E.g. AMLs may be operational. Propose small sub-group (ME, MJ) to review paper C&S/14/10B and report to WG 13. The IHO is responsible for the background chart information, while the IEC is responsible for Classification of displays – voyage planning display, collision avoidance displays, own-ship, radar/ARPA, AIS etc

LA: IEC is submitting 2 info papers to IMO on this topic. Provides the draft Performance Standard for display of navigation information. The appendices will contain all the details. LA has copies if anyone is interested.

MJ: no correspondence has been circulated for forthcoming WG13 meeting- organisation is a real concern.

**Outcome: MJ and ME to review the current consolidated list of harmonised symbols.**

## **11. Liaison matters with HGMIO**

### **11.1 Report on progress (Alexander)**

LA gave a brief update on the status of work of HGMIO. This is a technical liaison WG that reports to IEC TC80 and IHO CHRIS. Marine information Objects (MIOs) consist of supplementary information to be used with ECDIS that currently, are not S-57 ENC objects or specified navigational elements or parameters. Supplementary means non-mandatory information that is in addition to those required by existing ECDIS-related standards and specifications.

At present, there are no actions items that have been assigned by IHO (e.g., TSMAD or C&SMWG) or IEC (e.g., TC80/WG13 or WG7). A one-day meeting will be held in Monaco on 14 June 2003 (between CHRIS 14 and IHO Industry/Stakeholder Days) to review the current scope of MIO-related activities.

**Outcomes: no action for C&SMWG.**

### **11.2 Proposed Ice Pattern symbols - Doc: C&S/14/11A (Eaton)**

ME: this area symbol was devised 5 years ago and illustrates the difficulty in trying to produce new area patterns. It not been used for anything at present but can be used later if required. If C&SMWG need something they want to symbolise, this area pattern could be used.

SF: USCG carries outice patrols to report on ice flows, etc and symbology for the current ice state would be useful. He likes the choice made. Currently no one in the US is providing ice data in S-57 format.

LA: demonstrated some of the presentation work from the Ice Object Catalogue (Version 3 – March 2001) that includes proposed symbology. The Ice Objects may be included in the S-57 data dictionary.

ME: example presented looks cluttered.

MH: The Ice Catalogue could go to HGMIO and if approved, could be sent to TSMAD as a possible register for S-57 E4. It is not under the responsibility of the IHO. An organisation

needs to take responsibility to maintain this catalogue. Ultimately ice information will be displayed on top of ECDIS like AMLs.

MJ: Michel's suggestions could be raised at the next HGMIO meeting.

LA: there is a dilemma as MGMIO has no task at present.

MH: HGMIO could report to CHRIS and try and get TSMAD to handle the Ice Catalogue via a new S-57 registry. The CHRIS chairman has asked each group to prepare a work plan and HGMIO could propose this task.

MJ: agrees with MH suggestion for HGMIO.

LA: displayed Terms of Reference for HGMIO and agreed to be proactive and say these are issues they could handle. This approach was taken over last two years on HGMIO and CHRIS agendas and there was no task assigned.

MJ: CHRIS Chairman working differently from past practices and the time could be right to introduce this. Timely suggestion and work could flow down to C&SMWG eventually if approved by CHRIS.

MH: Ice could be the first type of MIO to be run through the registry process to see how the process works. HGMIO could review the proposed Ice Pattern symbols and provide recommendations to C&SMWG.

***Outcomes: no action for C&SMWG at present, hold the area symbol in reserve for possible future use. LA encouraged as Chairman of HGMIO, to forward Ice Objects for formal adoption by TSMAD as an additional part of S-57 via CHRIS. If TSMAD was to adopt Ice Objects officially, C&SMWG/15 could possibly discuss ICE presentation based on the findings by ME and the ECDIS workshop from 2000.***

## 12. New C&S issues

### 12.1 Unified loading strategies in relation to SCAMIN settings and reintroduction of navigational purposes (usage bands) (Jonas) - Docs: C&S/14/12A and new paper C&S/14/12G.

MJ: attended the last TSMAD meeting and encoding problems were discussed. Different ECDIS display in different ways and there are many reasons why. Implementation of PresLib is partly to blame but the flexibility in encoding of ENC data also contributes. A brief PP presentation was provided on this topic. Dedicated scale bands would help overcome the inconsistencies between various ECDIS systems displaying the same ENC data differently. Ideally, there should be common rules on the use of SCAMIN. Currently, some HOs use different methods for SCAMIN. This results in some symbology being suppressed by various ECDIS manufacturers at different scales of presentation. One approach is to simplify the "over-scale" pattern that is shown for areas where the ENC compilation scale is smaller than the scale of the display. This matter is greatly influenced by the lack of ENC coverage.

MJ: Referring to paper 12G, PRIMAR and IC-ENC met 2 weeks ago to come up with proposed display scale ranges.

CR: is 10-11 sets of scale ranges a problem for OEMs?

GS: it is only simple matter to add extra ranges. Deciding which cell to load is the problem.

MJ: ECDIS looks for compilation scale or usage band. HOs do it very differently. OEMs use different strategies, some use combinations of compilation scales and navigational purpose. This is a complex issue. What is the compilation scale in an ENC compiled from data base source data?

MJ: The S-57 ENC Product Specification currently has 6 Navigational purposes without any scale ranges specified.

MJ: propose common rules for the use of SCAMIN. HOs have different approaches, some use semi-automated processes.

MJ: we need to simplify overscale. The overscale pattern is acceptable but there are complex rules when it appears. We could connect overscale to display scale ranges if they were to be re-introduced. He appeals to HOs not to encode multiple M\_CSCL (not too many).

PB: hasn't read in S-52 where overscale pattern should disappear.

MJ: When the display is greater than 2 times compilation scale, the display overscale symbol should be displayed.

LA: can the mariner turn off this overscale pattern? ME: yes.

GS: OSL would like to be able to remove this pattern when overscale is in one cell.



MJ: mariners are confused by the pattern disappearing when panning from larger scale to smaller scale ENC's. At this stage, it is not clear what is the best way forward in terms PresLib Ed. 3.3, but it will be left as it is for now.

CR: as coordinator for ENC PS for S-57 E4, I could discuss all these issues in full via the tsmad OEF to try and agree to hard and fast rules for E4. It is expected that the flow on for S-57 Edition 3.1 ENC's will be ENC Encoding Bulletins.

MJ: initiate OEF discussion.

MJ: loading strategies for ENC's. 5 principles: (see section 8.5 within paper C&S/14/12A) for consideration by at least new ECDIS manufacturers. C&SMWG is not in a position to rule on this as each manufacturer does it differently for good reasons. Could be future bulletin board topic.

GS: The 6 NM restriction could cause issues. Very interested in testing and participating in this discussion.

SF: what about dual-fuelled ECDIS. Needs to be considered in these principles.

MJ: in reality, dual-fuelled ECDIS is more than 100 times more complex.

GS: an important issue is how to make the automatic override component remaining compliant with SOLAS.

MJ: proposes to put topics on OEF for discussion.

***Outcomes: possibly no action for PresLib 3.3, depending whether TSMAD and HOs decide to re-introduce set scale ranges for navigational purposes. MJ to initiate OEF discussion with aim to possibly add results to IHO web site.***

**12.2** General discussion about **introduction of maintenance bulletin board** on IHB homepage for S-52 amendments similar to TSMAD for S -57. (Roberts)

CR: explained how tsmad frequently asked questions (FAQ), the ENC Bulletin Board and the process for Proposed Procedures work.

MJ: supports an 'S-52 Specifications FAQ' section similar to S -57. Questions could be sent to the Chairman initially who then forwards them to the experts concerned. The Secretary would collect all the responses, summarise the conclusions and then forwards to the IHB for entry on the C&S website. 'S-52 C&S Bulletins approved by the C&SMWG can be discussed outside meetings, but must be approved by members before going onto the Bulletin Board (by Sec).

MH: what information and guidelines will be issued as C&S Bulletins? To whom will they be directed?

MJ: deferred and immediate amendments could go into bulletins. They could be directed to users and or be for manufacturers (software developers). Could also include technical bulletins and de -facto recommendations, however we don't want to flood the site. Could include the latest news on what to do. It would have official status, direction and or guidance and may include more precise explanations. This is a more modern way to publish amendments and potentially in a more timely manner. It could also include results of OEF discussion and agreed amendments or it could be restricted to precise and serious issues. If the C&SMWG decides that something is a serious amendment, it could be published as bulletin. For matters of urgency, decisions reached by correspondence may be sufficient and in this case, the Chairman would have the final word.

The meeting agreed to these procedures and that this is the place for approved and future amendments for promulgation.

***Outcomes: Chair and CR to organise S-52 C&S FAQ and Bulletins on IHO web-site. Chair will report this proposed action to CHRIS.***

**12.3** Hazards omitted by safety contour default - Doc: C&S/14/12D (Eaton for Eidsforth)

**Safe water issue:**

BE: the issue is whether the isolated danger symbols should be shown if located outside the safety contour. The default safety contour goes to the next deeper encoded contour and if the mariner navigates outside 'safe water', the isolated dangers do not get symbolised except under "Other" info.

LA: isolated dangers within dangerous water based on safety depth (say 12 m), are not indicated as isolated dangers when safety area goes to 20 DEPCNT.



MJ: provided a short power point presentation  
CR: when not symbolised, will they be detected and alarmed?  
ME: Design spec should be independent of alarms.  
MJ: training doesn't allow for this anomaly. Safety depth (highlighted soundings) are NOT clearly visible on an ECDIS display. Could lead to many implications we have not seen yet.  
GS: No indication of a wreck on Std display in this situation.  
LA: assuming mariners will operate only in Std Display that is true (not the case).  
MJ: switch to 10m safety depth to check isolated dangers. Reluctant to make this change. If proposed for 3.3 we would have to prepare a CSP for this situation and there may be many implications. Suggest the issue be discussed on the OEF with 4 a week cut off deadline. Who would do the CSP, if required?  
ME: easy CSP change.  
GS: we could move the symbol to base display  
MJ: this option would be a major change.  
ME: Definition of an isolated danger is within safe water and less depth than safety contour.

**Outcome: Chair to initiate OEF discussion on this issue with 4 week cut off deadline. Results will initiate action for CSP to change or not.**

#### **12.4 Directional lights symbology - Doc: C&S/14/12D (Eaton)**

ME: navigational line is confusing as it is displayed differently on ECDIS, being generated as a directional line from the ENC encoding of the light, not from a separate S-57 object NAVLNE.  
GS: OSI considering adding colour to sectors within the rings of the sector.  
RC: S-58 check should pick this up (no encoding of navigation line line).  
ME: to be safe, leave the line symbol as part of the CSP.

**Outcome: co action for C&SMWG.**

#### **12.5 Issue for older ECDIS when linear depth areas are no longer encoded (Roberts). - Doc: C&S/14/12E.**

**Outcome: no action, covered in 6.7 above.**

#### **12.6 Issue with the way the PresLib handles the S-57 attribute VERCSA when VERCLR is also encoded – doc C&S/14/12F (Eaton)**

ME: small typo.

**Outcomes: look up table will be corrected in PL 3.3**

### **13. Any other business:**

#### **13.1 IC-ENC proposals for RIVERS and DOCARE New doc C&S/14/13A.**

##### **Rivers issue:**

MJ: this issue needs to be seriously considered as IC-ENC and PRIMAR are trying to enforce better encoding of ENCs.  
RC: rivers and dock areas look like a serious problem with ENCs, but this is a display issue. If 'other' is turned off, it creates the displays shown in the paper. RIVERS are currently not skin of the earth.  
LA: suggested its an encoding problem and displays when attribute values are not provided.  
BE: Canals are in Standard display but rivers are not – this is an inconsistency. If navigable water, it must be encoded as skin of the earth. If we do something with rivers, we should do the same for canals. They are used in the same way.  
MJ: substantial changes would be required to the look up tables, consider for future edition of C&S Spec/PL. What about lakes?

GS: It is not difficult for OEMs to move rivers into base display.  
MJ: the situation applies in small scale non-navigable areas.  
DB: a mariner shouldn't be navigating in these areas  
MJ: We don't want to bastardise data for display, but works same in the other direction.  
ME: data encoding problem.  
LA: ECDIS will advise that better scale data is available anyway.  
MJ: suggested that area could be made navigable.  
PB: referred to an example and when you change scale, rivers are in group 1.  
GS: CTNARE is also encoded referring to larger scale ENC's.  
MJ: Suggested that PB prepares a brief description of SHOM encoding practise for these situations and provide it to TEWG.  
MJ: Deficiency in encoding practise and there are appropriate methods available to prevent this display issue.  
MH: Could result in guidelines for data producers.

***Outcomes: PB and RC to prepare brief description of SHOM encoding practise for these situations and provide to the TEWG. PB and RC to initiate discussion on the c&s OEF for one month. ME is to then investigate appropriate work. (could be a 3.3 issue). Depending on the outcome of the OEF discussion, MJ may write to TEWG, CR to review.***

**Meta M\_SREL data issue:**

GS: can only be interrogated by picking object for information.  
RC: CATZOC too hard to quantify (too much work).  
CR: this is a work around for HOs and is an encoding issue. M\_QUAL is mandatory, not M\_SREL.  
MJ: Avoid area patterns, they are hated and switched off intentionally.  
ME: add M\_SREL attributes to CATZOC in display?  
MJ: no new area symbology. What happens if both attributes are set?  
BE: CHS encodes M\_SREL to advise where surveys came from, dates.  
RC: consistency issue. Some HOs estimating CATZOCs, others going back to source.  
MJ: M\_SREL is accessible by interrogation.  
GS: M\_SREL allows overlapping areas. ECDIS could produce Reliability Diagram on ECDIS?  
MH: add PICREP to **M\_SREL**, as an option to the suggestion by MJ.  
DB: Could be M\_NPUB object  
LA: accuracy for bathymetry is subjective for determining CATZOC values.  
MJ: too complex to handle overlapping areas on ECDIS. Suggested he could attend TEWG meetings to explain the issues in person as well as formal response by letter.

***Outcome: Chair will advise TEWG to concentrate on M\_QUAL. No area patterns will be introduced at this stage.***

**13.2** Action list review (roadmap of new edition of S-52 Annex 2, publication dates, date comes into effect, etc) (Jonas)

***Outcomes: were reviewed and agreed by the meeting (see Annex E)***

**14. Next meeting** (venue, dates)

Provisionally Europe May 04 in Rostock or Hamburg.  
May not require meeting next year?  
Chairman thanked members for attending and CHS for hosting meeting, with special thanks to Mike Eaton's for his life work on C&S.

## Appendix A of the C&SMWG/14 minutes

In attendance at the meeting were :

Dr Mathias JONAS (MJ - Chairman)	
Chris ROBERTS (CR - Act. secretary – Australia)	David TURNBULL (DT - NIMA)
Dr Lee ALEXANDER (LA – University of New Hampshire)	Richard COOMBES (RC - UKHO)
Doug BRUNT (BD - CHS - Ottawa)	Odd BREIVIK (OB - Norway - NMA)
Bernie EIDSFORTH (BE - CHS - Burlington)	Greg SUTTON (GS - Offshore Systems Ltd)
Pol LeBihan (PB - EPSHOM)	Sven HERBERG (SH - University of Technology, Germany)
Mike EATON (ME - CHS retired)	Shawn FREEMAN (SF - USCG)
Michel HUET (MH - IHB)	

The attached .tif files are copies of the business cards of each of the attendees.

**Appendix B to Minutes**  
(C&S/14/2A (Rev 3.5))

**IHO C&SMWG 14**  
**CHS – Ottawa 18-20 May 2003**

**DRAFT AGENDA**  
(as at 16 May 03 additions in red)

1. **Open and welcome**  
docs: C&S/14/1A - Document list  
C&S/14/1B – participants (to be completed **at the meeting**)  
Apologies
  
2. **Approval of the Agenda**  
doc: C&S/14/2A -Draft Agenda
  
3. **Approval of the minutes of C&S/13**  
doc: C&S/14/3A - final draft Minutes of IHO C&SMWG/13
  
4. **Vice-chairman and Secretary**  
(Roberts will act as Secretary for this meeting).
  
5. **Review of action items resulting from the decisions made at C&S13 Hamburg, May 2002:**
  - 5.1 Update C&S members list:  
Doc: Annex C of draft Minutes of IHO C&SMWG/13 (C&S/14/3A)
  
  - 5.2 Incorporate agreed amendments to C&S Specs 4.2 and PresLib Ed. 3.3.  
(Eaton/Jonas)
    - 5.2.a) Edition 3.3 of PresLib and Edition 4.2 of C&S Specs: General progress made and proposed issue procedure and date. (Eaton)
  
    - 5.2.b) Test data set plots (Huet/Jonas) – see 5.5 below
  
    - 5.2.c) Amendments to May '02 draft version of PresLib edition 3.3 in general - - Doc: C&S/14/5A
  
    - 5.2.d) Revision of PresLib Part 2 "Mariners' Objects" - Docs: revised "Introduction" to Part 2" (C&S/14/5B) (Jonas), d6.co.28. (C&S/14/5A)
  
  - 5.4 Revised CSPs agreed for C&S Specs 4.2 and PresLib Ed. 3.3
    - 5.3.a) Review briefly all of 15 revised CSPs (item 8 of C&S/13 minutes refers). - Docs: C&S/14/5C "CSP for SAFCON", C&S/14/5D "changes to CSPs" **and C&S/14/5K (French paper) on DEPARE02 (see also 8.8 below). (Le Bihan introduction)**
  
    - 5.3.b) Symbolising WRECKS –  
Docs: C&S14/5A "Amendment d6'.co.14", C&S/14/5D "changes to CSPs" **and C&S/14/5L and C&S/14/5M "non-dangerous wrecks". (Jonas)**
  
  - 5.5 Generate final DAI for C&S Specs 4.2 and PresLib Ed. 3.3  
Review of current status (Jonas)

- 5.7 Generate and check TDS plots for C&S Specs 4.2 and PresLib Ed. 3.3  
Review of current status (**Covered in 5.2.b) above**)
- 5.6 Ask TSMAD and reply again details see under **item 8 below**. Liaison matter with TSMAD
- 5.7 Prepare results of workshop for OEF see Annex G Workshop results of draft minutes of C&S13 (paper C&S/14/3A **and see 5.12 below for paper based description**) (Jonas)
- 5.9 Review draft LCD colour calibration amendments  
Doc: D6.co.27 (C&S/14/5A refers), C&S/14/5E (Eaton)
- 5.9 Continue testing of 3 new colour tables  
Evaluation and testing of 3 -table colour scheme (Herberg) - Doc: C&S/14/5F
- 5.11 Initiate testing of AIS symbols  
Testing of colours for AIS symbols **in Singapore** (Jonas) --
- 5.11 Complete Minutes of C&S 13<sup>th</sup> Meeting Hamburg, May 2002  
see draft minutes plus annexes of C&S13 - Doc: C&S/14/3A (Jonas)
- 5.12 Complete PresLib with paper description of Symbol Offsets  
Draft paper based description of S-52 symbology (Herberg) - Doc: **C&S/14/5H**
- 5.15 Adding text attribute VERCSA to existing list  
Item No. CS04.1.d6'.co.25 – See C&S/14/5A (Eaton)
- 5.14 Revise Chart 1 and symbol diagrams for ed 3.3 - NDI contract (Eaton)
- 5.14.a) Review results of OEF discussion - Doc: C&S/14/5J
- 5.14.b) Review digital and paper version of symbol diagrams for Ed. 3.3 - **Doc: C&S/14/5J.**
- 5.15 Lost own-ship problem (reference C&S14/3A "Minutes C&S13 5.27")**  
(See also 10 below. Liaison matters with IEC(Jonas)).

## 6. Remaining C&S issues from C&S13

- 6.4 Access to INFORM and TXTDSC on collection objects - Doc: C&S/14/5A  
d6'.cl.4.(relating to PresLib 8.6.1 for Edition 3.3) and C&S/14/5A  
d6.co.23.(relating to PresLib 8.6.2)
- 6.5 Symbolisation of Tunny Nets (Roberts) - **Doc: C&S/14/6C**
- 6.6 Rocks, wrecks and obstructions covered by group 1 object other than DEPARE
- 6.4 PICREP edition control (Jonas/ Peiponen)
- 6.5 Use of the C&S OEF **and IHO** sites – further discussion - Doc: C&S/14/6A - See also 12.3 below.
- 6.8 Display priorities with dual-fuelled ECDIS
- 6.9 Funding for S -52 App2 (including PresLib) maintenance.  
Doc: C&S/14/6B extract from CHRIS/14 draft minutes (Jonas). **See 7.2 below.**

**Discuss CSPs age nda item 5.3a) here.**

## 7. CHRIS – reports and directions

- 7.3 C&S13 report to CHRIS/14 and CHRIS decisions about proposed changes to the **IMO Performance Specifications for ECDIS** for buoys and beacons to be removed from display base and suggestions relating to Ferry route (FERYRT) (Jonas)  
Docs: C&S/14/6B, C&S/14/7A, C&S/14/7B
- 7.2 CHRIS directions to C&S for revision of operational aspects of ECDIS as part of S-52 (Jonas) - Doc: **CHRIS/14/7C**
- 7.5 Manufacturer's liability: report about CHRIS/14 discussion (Jonas, H uet)
- 7.4 Review of C&SMWG work plan submitted by C&SMWG chairman to CHRIS chairman (Jonas) - Doc: C&S/14/7D

## 8. Liaison matters with TSMAD

- 8.1 Report on TSMAD/9 meeting (Jonas) - Doc: C&S/14/8A
- 8.2 Encourage the coding of EXPSON within ENCs - Doc: C&S/14/8B (Jonas/Eaton)
- 8.3 Report (verbal) on S-57 Extensions Sub-group (TSMAD) meeting Ottawa directly before C&S14 **Doc C&S/14/12B refers** (Jonas, Roberts)
- 8.4 General discussion about the implications of S-57 Edition 4.0 for Editions of S-52, Appendix 2.
- 8.5 S-57 UOC impact on current and future Editions of S-52, Appendix 2 (Roberts)
- 8.6 Possible adoption of Inland ECDIS Standard as part of S-57 E4 (Roberts)
- 8.7 **PICREP edition control (Jonas).**
- 8.8 **Possible issues with false safety contours displayed at cell boundaries due to incorrect coding of the FSTP/USAG subfield when using the new DEPARE02 CSP. - Doc: C&S/14/5K (Le Bihan).**
- 8.9 **Issues with UOC 12.8 with new S-57 (Edition 4) objects BCNGEN and existing object PILPNT - doc: C&S/14/8C (Roberts).**
- 8.10 **S-57 Extensions sub-group proposal to add new attributes for Distance Mark (DISMAR). – doc: C&S/14/8D (Roberts)**

## 9. Liaison matters with Chart Standardization and Paper Chart WG (CSPCWG)

- 9.1 **Liaison CSPCWG** report on status of WG and new edition of M-4, ESSAs and PSSAs (Jonas/Roberts) **New doc C&S/14/9A**

## 10. Liaison matters with IEC WG7 & WG13

- 10.1 **IEC TC80 WG 7 issues/report**  
Report on progress (Alexander)
- 10.2 **IEC TC80 / WG13 issues/report**  
Report on progress (Jonas) - Doc: C&S/14/10A

11. **Liaison matters with HGMIO**
  - 11.1 Report on progress (Alexander)
  - 11.2 Proposed Ice Pattern symbols - Doc: C&S/14/11A (Eaton)
  
12. **New C&S issues**
  - 12.1 Unified loading strategies in relation to SCAMIN settings and reintroduction of navigational purposes (usage bands) (Jonas) - Doc: C&S/14/12A, **new paper C&S/14/12G**
  - 12.2 General discussion about introduction of maintenance bulletin board on IHB homepage for S-52 amendments similar to TSMAD for S-57. (Roberts)
  - 12.3 Hazards omitted by safety contour default - Doc: C&S/14/12D (Eaton)
  - 12.4 Directional lights symbology - Doc: C&S/14/12D (Eaton)
  - 12.5 Issue for older ECDIS when linear depth areas are no longer encoded (Roberts). -Doc: C&S/14/12E.
  - 12.6 **Issue with the way the PresLib handles the S-57 attribute VERCSA when VERCLR is also encoded – doc C&S/14/12F (Eaton)**
  
13. **Any other business:**
  - 13.1 IC-ENC proposals for C&SMWG. New doc C&S/14/13A.
  - 13.2 Action list review (roadmap of new edition of S-52 Annex 2, publication dates, date comes into effect, etc) (Jonas)
  
14. **Next meeting** (venue, dates) **Provisionally Europe May 04 in Rostok or Hamburg**
  
15. **Close**

## Appendix C to Minutes

C&S/14/1A (Rev 3.4)

**IHO C&SMWG/14  
CHS Ottawa 18-20 May 2003**

### DOCUMENT LIST

*(as at 16 May 03 new additions or revisions in red)*

C&S/14/1A	Document list
C&S/14/1B	List of participants at C&S/14 (to be completed)
C&S/14/1C	List of members and contacts for C&SMWG
C&S/14/2A	Draft agenda
C&S/14/3A	Final Minutes of C&SMWG/13
C&S/14/5A	Draft Deferred Amendment 6 for S-52 App2
C&S/14/5B	Proposed changes to the PresLib Edition 3.3 Part II 'Mariners' Navigational Objects'.
C&S/14/5C	Proposal for CSP for SAFCON



- C&S/14/5D New and revised CSP for PresLib 3.3  
 C&S/14/5E Changes to C&S Specs Sec 4 to align S-52 App2 with IEC 61174.  
 C&S/14/5F Testing of 3 new colour tables  
 C&S/14/5G Results of colour tests for AIS symbols  
 C&S/14/5H Paper based description of S-52 symbology – (draft paper commenced)  
 C&S/14/5J CHART 1 Revision– Summary of OEF discussion  
 C&S/14/5K French report on new CSP for DEPARE02  
 C&S/14/5L French report on non-dangerous wrecks.  
 C&S/14/5M French report in more detail with graphics on non-dangerous wrecks.
- C&S/14/6A OEF Discussion Guidelines  
 C&S/14/6B Extract from CHRIS/14 draft minutes – discussion on C&SMWG report.  
 C&S/14/6C Suggestion for encoding Tunny Nets
- C&S/14/7A French comments regarding display base issues  
 C&S/14/7B Background to IMO letter re Display base by Eaton  
 C&S/14/7C CHRIS directions on operational aspects of ECDIS  
 C&S/14/7D CHRIS Draft Work Plan for 2003-2007
- C&S/14/8A Jonas report on TSMAD/9 C&S issues  
 C&S/14/8B S-57 related issues  
 C&S/14/8C WI2.2Prop6 from S-57 Extensions sub-group OEF discussion  
 C&S/14/8D WI2.2Prop2 from S-57 Extensions sub-group OEF discussion
- C&S/14/10A IEC TC80 WG13 issues  
 C&S/14/10B IEC 62288 Annex B harmonized symbols
- C&S/14/11A Ice Pattern proposal by Eaton
- C&S/14/12A Study on ENC loading strategy on different ECDIS in relation to SCAMIN effects and “overscale” indicators.  
 C&S/14/12B ISO TC 211 work implications for S-52 App2  
 C&S/14/12C no paper  
 C&S/14/12D Hazards in default 'Unsafe Water' and line representing direction of light  
 C&S/14/12E Comments on linear depth areas  
 C&S/14/12F Concern for PresLib handling of VERCSA  
 C&S/14/12G Improving ENC consistency.
- C&S/14/13A Proposals for C&S from IC-ENC

**Appendix D to Minutes  
 (C&S/14/1C)  
 MEMBERSHIP OF C&SMWG  
 and C&S contacts (as at June 2003)**

- \*\* = Chairman  
 \* = Secretary (vacant)  
 + = C&SMWG technical coordinator  
 # = C&S representative at IEC  
 % = IHO CHRIS representative  
*italics* = IHO representative

**Names of members who are actively involved in the work of C&SMWG and assigned for reception of all working documents are marked in red.**

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## Appendix E to Minutes

### Action items resulting from the discussions made at the meeting:

No	Minutes Ref	Description	Who?	By when	Completed
1	5.1, 9.1	Update C&SMWG membership List	CR	Jun 03	19 Jun 03
2	5.2.c), 12.7, 13.1, etc	Incorporate agreed amendments to Edition 3.3 PL. Rev to MH by 30 June 03.	ME, MH	Jun-Oct 03	
3	5.2.b)	Obtain and review Test Data Set plots for S-52	HP, ME, GS	5 Jun 03	
4	5.2.b)	Prepare S-52 App 4 or separate pub (TDS).	MJ, HP, MH, RC	Jul 03	
5	5.3.a)	Revise CSP for DEPARE02 and test	GS, PB, ME, MH	Jun 03	
6	5.3.b)	Revise CSP for WRECKS and test	GS, PB, ME, MH	Jun 03	
7	5.4	Generate final .DAI files for PL Edition 3.3	HP, SF, PB, GS, MJ	Sep 03	
8	5.9	Amend and check C&S Spec 4.2 re 3 new colour tables.	ME, MH, SH	Jun 03	
9	5.10	Offer 3 colour tokens to <b>IEC</b> for AIS	MJ	May 03	
10	5.13	Complete paper description of S-52 symbology and publish in PL 3.3.	SH, ME, MH	Sep 03	
11	5.14	TIFF file for Chart 1 to IHO web site	MH	Jun 03	
12	5.15	Own ship symbol – paper for <b>WG 13</b>	MJ	May 03	
13	6.5	Contact OEF admin re history of issues presented	CR, LA	Jul 03	
14	6.5	Send all C&SMWG/14 papers to IHO for web site	CR, MH	Jun 03	
15	6.7	Prepare list for IHB of non-IHO members on C&SMWG (for charging PL).	MJ, MH	Jun 03	
16	6.7	Update web-site with information about the proposed new editions of C&S Spec and PL	MJ, MH	Jun 03	
17	6.7	Proposed date for linear DEPARE no longer being required, to be forwarded to TSMAD (see also 20)	MJ, MH	Oct 03	
18	6.7	Letter to all S-52 App2 purchasers announcing new edition.	MJ, ME, MH	Jun 03	
19	7.1, 7.2, 7.4, etc	CHRIS/15 report from C&SMWG	MJ	May 03	
20	7.1	IMO PS issues to <b>WG 13</b>	MJ, LA	May 03	
21	8.5	Contribute to c&S OEF discussion	members		
22	9.1	Investigate possible display options for coral areas, sea lanes, fairway areas.	SH	Jun 03	
23	9.1	Write to Chairman of CSPCWG in spirit of cooperation between our groups.	CR	Jun 03	
24	12.3	Isolated dangers outside safe water OEF discussion.	MJ, ME	Jun 03	
25	12.3	Consider results of 26 (possibly amend Ed 3.3)	MJ, ME, MH	Jul 03	
26	13.1	Encoding RIVERS on base display – Joint TEWG & c&s OEFs	ME, PB, MJ	Jun 03	
27	12.1	OEF discussion to be initiated on loading strategies, etc	MJ	Jun 03	
28	12.2	Prepare S-52 C&S FAQ and Bulletins on IHO	MH, MJ,	Sep 03	

		web site	CR		
29		Publish S -52 App2 Ed3.3	MH	Oct 2003	
30		Draft Minutes C&SMWG/14	CR	Jun 03	
		<b>TSMAD issues</b>	<b>Who?</b>	<b>By</b>	
31	5.3.a)	Prepare draft ENC encoding bulletin for USAG at cell boundaries.	CR, PB	Jul 03	
32	5.3.b)	Prepare draft ENC encoding bulletin for new CSP for WRECKS	CR, PB	Jul 03	
33	6.2	Prepare draft ENC encoding bulletin for Tunny Nets	CR	Jul 03	
34	6.3	Prepare draft ENC encoding bulletin for Rocks, Wrecks and obstructions	CR, ME	Jul 03	
35	6.4	PICREP version control issue for S-57 E3.1 ENCs	MJ	Oct 03	
36	8.1	ENC Encoding issues for TSMAD	MJ	Oct 03	
37	13.1	M_SREL report to combined <b>TEWG</b>	MJ	Jun 03	