

17th CHRIS MEETING
Rostock, Germany, 5–9. September 2005

REPORT OF THE CHRIS COLOURS & SYMBOLS
 MAINTENANCE WORKING GROUP (C&SMWG)

From June 2004 to June 2005

Submitted by:	Mathias Jonas, Germany
Executive summary:	Report on the work undertaken and progress made by the Colours and Symbols Maintenance Working Group, since CHRIS16, and future plans.
Actions to be taken:	CHRIS to note the report, and endorse the future plans.
Related documents:	CHRIS letter No. 1/2005 (call for reports)
Related Projects:	Not applicable

1. **Chairman:** Dr. Mathias JONAS (Germany)
 - Tech. Co-ordinator:** vacant
 - Secretary:** Mr. Chris ROBERTS (Australia)

2. **Membership:**
 - IHO ***Australia***, Canada, Finland, ***France***, ***Germany***, ***Norway***, ***UK***, ***USA***
 - Non-IHO ***SevenCs*** P&H Marine Associates, ICAN, Q-Mar, NDI, C-Map, CARIS, Offshore Systems Inc., Canadian Coast Guard, CANStar Navigation Ltd., Canadian Navy, DCIEM (Canada), Navintra Ltd. (ASPO), ***Transas Group***, Raytheon Marine, C-Map, Kelvin Hughes, HSA, DERA, USCG, SAM Marine Electronics, CIRM, IEC TC80, DnV Type Approval, ***Wismar University***

3. **Meetings:** CSMWG15 Meeting 2.–4. May 2005 in Rostock at BSH (Attendees of CSMWG15 marked in bold/italics)

4. **Activities**
 - Actions resulted from the consolidated CHRIS Work plan (see section A)
 - Actions resulting from CHRIS15 minutes (see Section B)
 - Actions resulting from CSMWG15 (see Section C)
 - Discussion about future development of S-52 Presentation Library at CSMWG15 (see Section D)

Section A: Actions resulting from the consolidated CHRIS Work plan CHRIS 15-5A, rev 1 (see numbers)

Work item	Remarks
Set Ed. 4.2 of S -52 App.2 in force with one year grace period	Chair C&SMWG drafted a letter informing all subscribers to the IHO Presentation Library (PL) for ECDIS, IMO, IEC/TC80 and other interested authorities of the new PL E3.3 and the changes resulting thereof; IHB informed PL subscribers by letter IHB File N° S3/8151/CSMWG, September 2003 and CL25/2004 April 2004
Set Ed. 3.3 of ECDIS PL (S-52 App.2, Annex A) in force with one year grace period	
Examination of S-52 main documents and annexes for redundant operational aspects of ECDIS	<p>Revised S-52 (main document), as in Doc. CHRIS16-5.2B, was approved by CHRIS16.</p> <p>Chair C&SMWG drafted a letter to inform IMO about IHO's intended revision of the S-52 package, to be considered within the planned revision of ECDIS Performance Standards</p> <p>The revised S-52 was carefully reviewed at the IHB and tentative changes to the ECDIS Performance Standards were made accordingly. In brief, all operational items identified for deletion in S-52 had to find their way in the PS. The resulting "track change version" of the ECDIS PS was published as CL69/2004 asking member states for their support for submission to IMO MSC80.</p> <p>Due to the positive reply from the majority of member states the draft revision of ECDIS PS was jointly submitted by IHO and Greece to IMO MSC80. MSC forwarded this submission for consideration to IMO NAV51.</p> <p>IMO NAV51 put revision of ECDIS Performance Standards on the agenda of NAV52 and NAV53 considering IHO contribution among others by means of continuation of the already established ECDIS Correspondence Group led by Norway.</p> <p>IHB to prepare a revised version of the S-52 main document based of future revised ECDIS Performance Standards not earlier than 2007 (NAV53) for consideration and approval by CHRIS.</p>
Consideration of future M -4 revision for S-52 C&S regulations	Ongoing
Consideration of the implications of future S-57 Version 4.0 on S -52 C&S regulations	Ongoing

Section B: Additional actions resulting from CHRIS16 minutes

Chair CSMWG to liaise with ISO/TC211 to seek ways and indicative costs to align S-52 with the ISO standard 19117.

CSMWG15 developed a strategy how S-52 could potentially aligned to ISO standard 19117 (see Section C).

Chair CSMWG to prepare, in liaison with the CHRIS Chair and the IHB, a paper raising business case and proposal for IHO funding of C&S work as required, with target date of 1st October 04; **IHB** to then circulate this paper to MS by CL; could possibly be considered at the 3rd Extraordinary IHC (April 2005).

Due to an accident, Chair CSMWG was unable to do this action as originally intended. CSMWG15 dealt with the topic (see Section C)

Section C: Actions resulting from CSMWG15

Introduction and revised time frame for application of Presentation Library Edition 3.3

S-52 Presentation Library (PL) Edition 3.3 was published March 2004. A revised IHO Test Data Set (TDS) was published as S-64 in December 2004. IHO revised letters were sent out to all subscribers of the S-52 Presentation Library on 29 April, 2005 by IHB, clearly stating when the new PL needs to be applied to ECDIS at sea. A total number of 36 subscribers (9 new purchasers among them) requested a copy of the new PL at IHB. This seems to be a realistic number of bodies who are commercially active in the field of ECDIS.

CSMWG reminds CHRIS to repeatedly inform ECDIS manufacturers and other affected bodies about the revised time frame for introduction of PL, Edition 3.3:

- ECDIS systems to be type-approved for the first time after 1st January 2005 must conform to Edition 3.3 of the PL from 1st July 2005.
- ECDIS systems already type-approved as of 1st January 2005 should upgrade to Edition 3.3 of the PL at the earliest opportunity, but not later than 1st January 2006.
- ECDIS systems that are already in use onboard ships should be upgraded to Edition 3.3 of the PL at the earliest opportunity.

PL Edition 3.3 introduces a new Method for detection and depiction of 'Safety Contour' which makes encoding of linear depth areas redundant

CSMWG request CHRIS17 for adoption of the following steps:

- *IHO to publish the consequences of the new method without using linear depth areas and explain at the stakeholder forum.*
- *Announce that HOs will no longer need to provide the laborious encoding of linear depth areas from 1 January 2007.*
- *Provide a upgraded version of Test Data Set without linear depth areas*
- *Inform IMO that implementation of Edition 3.3 has to be completed for all new and existing ECDIS due to this date at the latest.*

Contribution to unified symbolisation of AIS-Targets

Three colour tokens ARPAT, SHIPS; RESBL were tested as potential candidates as an AIS-Symbol colour for possible adoption by IMO/IEC. RESBL (light blue) is advised as the most appropriate colour. IMO has accepted a set of AIS symbols but has not adopted any colour by applying IMO Performance Standards Display of Navigational symbols and SN/Circ. 243. NAV50 adopted

the named PS which will become mandatory symbols from 2008. There appears to be no documented location for the colour except within the S-52 symbol description library. It was suggested therefore that the CSMWG should retain the authority to suggest colours for navigational symbols.

It was noted by CSMG that a diamond symbol was introduced to indicate AIS equipped buoys and beacons. For the matter of virtual buoys broadcasted as a message from a shore-based station about a location, it was felt more appropriate to transmit outer lines of a fairway instead of single buoys.

Improving ENC Consistency/loading strategies

IHO CL 47/2004 'Improving ENC Consistency' was issued recommending use of SCAMIN attribute for ENCs and has been applied by many HOs in the meantime. However, loading strategies for chart image generation driven by navigational purpose scales bands or radar scales of different OEMs have not been harmonised. Such Harmonisation would need a common approach by HOs to assign ENCs to compilation scales and usage bands and OEMs to load and display ENCs in an identical manner. A workshop is suggested for ENC loading strategy to discuss and experiment with data between OEMs and RENCs at the very least.

CSMWG informs members via OEF to gauge interest in a workshop. Chairman CSMWG intends to attend the workshop if performed in Hamburg.

Presentation of Archipelagic Sea Lanes (ASLs), Presentation of Environmentally Sensitive Sea Areas (ESSA) and Particularly Sensitive Sea Areas (PSSA)

CSMWG provided input to CSPCWG discussion to reach harmonised symbolisation between both ECDIS and paper chart. PL does not provide means to portray this transparent ribbon inside a limit like the new paper chart PSSA. To prepare for the future requirements CSMWG will develop line styles such as 25%, 50%, 75% transparencies and variable widths. IMO has declared the whole Baltic as an PSSA. Visualisation is not really appropriate in this case for an entire cell. CSMWG suggests to make use of the S-57 attribute SCAMAX that is currently prohibited for ENCs. By means of this such limits like ESSA and PSSA could be shown in usage bands, i.e. 'general' of smaller scale only, whereas the limits would be suppressed in coastal, approach and harbour ENCs.

There is no urgent need to produce this symbol at the moment because of the missing objects/attributes. For the time being ASLs, ESSA and PSSA can only be encoded as a CTNARE or an ADMARE with TXTDSC and or INFORM attributed.

Contribution to work package 'Portrayal' of S -57, Edition 4.0

ISO 19117 'Portrayal' has to be potentially applied to PL.

CSMWG will contract consultancy to figure out which parts of PL are potentially affected by reorganisation according to ISO 19117 and to give advice about usefulness of transition of existing PL to this standard.

Harmonisation of pick report presentation - formal request to CHRIS

S-52 currently gives only generic guidance how a pick report should be presented. A number of CSMWG contributors – namely from type approval bodies and customers claimed this as too weak.

CSMWG is asking CHRIS formally for core responsibility of IHO for this issue and if so, for future R&D action item funded by IHO and led by CSMWG?

**CSP develop-
ment/corrections**

As a result of an OEF discussion it turned out that if a wreck, rock or obstruction has a known depth this should be displayed in addition to all soundings whenever the mariner selects the viewing group "soundings" for display. It was agreed that there is a need for a complex conditional symbology procedure (CSP) for a group of feature objects which has not been used before in the PL. The new CSP would need to take into account various features and attributes.

CSMWG to prepare new or amended CSPs to become an ~~d~~-ferred amendment.

Two other CSPs for the generation of the depth contour, light sectors were found mistaken.

Mistakes will be corrected to become a deferred amendment.

**Gaps between ENC's of dif-
ferent producers nations**

The PL requires properly coded data and precisely adjacent cells to show boundaries between significantly larger and smaller scale areas. This is particularly an issue when parts of an area are compiled by different HOs and there is a small gap or different navigational purpose.

CSMMWG will prepare a paper to inform regional hydrographic commissions about the importance of the matter and also for the new CSMWG bulletins.

**Built a CSMWG bulletin and
FAQ section on the IHO web-
site**

It is suggested that the bulletins be divided into 5 sections:

Issues relating to HOs

Issues relating to ENC encoding

Issues relating to OEMs

Issues relating to Type Approval Authorities

Frequently Asked Questions (FAQs)

NOTE: all CSMWG Bulletins are strong recommendations but do NOT override existing IHO nor IEC related specifications. Any questions relating to any of these issues should be referred to the Chairman of the CSMWG in the first instance.

Section D: Discussion about future development of S52 Presentation Library at CSMWG15

The general discussion about the future strategy for the continued maintenance of the ECDIS presentation library.

- It was stated first that the new edition of the PL was basically a success. Only a few minor mistakes got through. Programmers appear to be happy with it. 36 subscribers purchased the new PL.
- On the other hand, there are not many contributions from the HO community to CSMWG anymore, they appear to be concentrating on data creation rather than on display aspects. Although CHRIS has confirmed IHO's role in standardisation of the display of chart information, a number of HOs are not (supposedly) concerned about display issues.
- There is also low attendance at CSMWG meetings from HOs (5), from industry (2 OEMs) with no input papers.
- It is understood that the PL in place mirrors computer graphics technology of the mid 90s (end 80s) and some ECS are more advanced in graphical display already. Adapting to state-of-the-art technology such as graphic cards and processing power would for example allow more centred symbols and better line styles. It is also understood that a new Edition of S-57 may lead to a serious reconsideration of the presentation mechanism.
- It appears that for safety of navigation, there is a steady need to standardise chart information similar to the paper chart but there is virtually no international body other than IHO as a candidate to do this work. For the future standardisation of ECDIS chart display there are several options open to use:

Option one:

IHO release control of the electronic chart display in full. Considering the efforts IMO spent to harmonise Navigational Symbols, it is not likely that IMO would accept a diversity of chart displays, and the likely negative impact on safety of navigation, which may result from the release of control.

Option two:

PL refit: IHO could hire a consultant or group of experts who travel around all of the OEMs who are interested to contribute and collect good ideas for re-design for areas that need re-design and consolidate the PL. They could draft desirable changes for design and present this to the CSMWG for discussion. Such enhancements could then be built into a new edition of the PL. This could however be expensive.

Option three:

The CSMWG is currently tasked with a low level maintenance function. Minor corrections such as CSPs can be done under contract by capable consultants and later be promulgated on the CSMWG bulletin board as amendments. Minor adaptations of the symbology, e.g. as for ASL can be handled via correspondence. Taking this option accepts that the construction of the PL is no longer a modern computer chart presentation in a technical sense and will get more and more outdated over the next years.

As an outcome of discussion CSMWG supports the continuing low level maintenance of the existing PL Edition 3.3 - naming this a PL-Moratorium – until more clarity about the future application of S-57 E4 ENC production has been reached. It is understood by the group that this strategy will set the existing PL further behind the progress of information technology. At the next CSMWG in 2006, the Chairman will invite type approval authorities to attend in order to

- discuss the scope of interpretation of PL items and the allowed deviations,
 - seek for guidance which feature of the PL might be subject of future adaptation to modern technology.
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