

5th HSSC Meeting
Shanghai, China, 5-8 November 2013

Report and Recommendations of the Digital Information Portrayal Working Group (DIPWG)



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|---------------------------|--|
| Submitted by: | DIPWG Chairman, Colby A. HARMON |
| Related Documents: | Draft DIPWG5 Meeting Minutes Draft TSMAD26/DIPWG5 Actions HSSC5-05.3B, S-52 Presentation Library Edition 4.0 |

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|---|--------------------------------|----------------------------------|--------------|
| Chair: | Colby A. HARMON, USA (NOAA) | | |
| Vice-Chair: | Thomas MELLOR, UKHO | | |
| Secretary: | Capt. Alberto COSTA NEVES, IHB | | |
| * Member States: | Australia | Germany | South Africa |
| | Brazil | Japan | Sweden |
| | Canada | Republic of Korea | UK |
| | Denmark | Netherlands | USA |
| | Finland | Norway | |
| | France | Russian Federation | |
| * Expert Contributor Organisations: | CARIS (Canada) | Jeppesen Marine (Germany/Norway) | |
| | CCOM (Univ of New Hampshire) | KESTI (South Korea) | |
| | Comark (USA) | NAVTOR (Norway) | |
| | ESRI (USA) | Nippon Sogo Systems | |
| | Furuno (Finland/Japan) | NG Maritime Systems (USA) | |
| | GEOMOD/DCNS (France) | SevenCs (Germany) | |
| | IC-ENC (UK) | T-Kartor (Finland) | |
| | IIC Technologies (Canada) | Transas (Russia) | |
| | Japan Radio Company (Japan) | | |
| * Attendees of either of the last two DIPWG annual meetings. Bold text indicates those attending in 2013. see Annex A for full details | | | |

Meetings Held During Reporting Period:

DIPWG-5

10-14 Jun 2013 Silver Spring, Maryland, USA Hosted by NOAA

Sub-Working Group Meetings Held During Reporting Period:

S-100 Model Sub-Working Group Sessions

18-19 Oct 2012 London (after the 3rd ECDIS Anomalies Workshop)

14 Jan 2013 Tokyo (prior to TSMAD-25)

5-7 Mar 2013 Frankfurt

S-52 Presentation Library, Ed. 4.0 Sub-Working Group Sessions

11-13 Jun 2013 Silver Spring (concurrent with TSMAD-26/DIPWG-5)

22-26 Jul 2013 Hamburg

27-30 Aug 2013 Taunton

Next Meeting:

DIPWG-6

Spring 2014 Australia Hosted by Australian Hydrographic Service

Work Program

S-52 Specification and Presentation Library

An extensive revision of the Presentation Library took place over the past year, under the leadership of the DIPWG Vice-Chair, who created an initial draft of the new version, facilitated two iterations of review by correspondence and presided over three working sessions of OEMs and other subject matter experts. The new Presentation Library removes obsolete “advice to developers” that dates from the earliest versions of S-52, eliminates redundant language and tables, clarifies ambiguous passages, provides more and clearer examples of how various elements of the specification are to be implemented, and limits the number of optional ways in which some critical ECDIS functions can be executed.

The extent of the changes being made call for a full version number change, so the new Presentation Library will be Edition 4.0. A minor version change of the main part of the S-52 Specification, from 6.0 to 6.1 was necessitated by a revision to S-52 Annexes B and C, which removed erroneous and obsolete colour calibration instructions based on CRT technology. [HSSC5-05.3B, S-52 Presentation Library Edition 4.0](#) provides more details about the changes to S-52 and the Presentation Library.

S-100 Portrayal

Significant progress has been made in finalizing the S-100 Portrayal Model and in developing an S-100 Portrayal Catalogue Builder tool.

The major sticking point that held up progress in developing the portrayal model was coming to agreement on the language to be used to for the model. Once XSLT was agreed upon, great strides were made. Three working sessions of OEMs and other subject matter experts were held 18-19 Oct 2012 in London after the 3rd IHO ECDIS Anomalies Workshop held at IMO headquarters, 14 Jan 2013 in Tokyo prior to the TSMAD-25 meeting, and especially helpful, the three day session 5-7 Mar 2013 held at Jeppesen facilities in Frankfurt. DIPWG is grateful for the IHO funding that assisted participants in obtaining transportation to the Frankfurt session, many of whom would not otherwise have been able to attend.

Portrayal (Section 9) of the S-100 and S-101 Documents

Although the S-100 Portrayal Model is essentially complete, the narrative portrayal sections of S-100 & S-101 are still being developed. The portions of S-52 that were initially identified for editing and inclusion in the S-100 or S-101 may have to be revisited as a result of the many changes that have been made to create PresLib4.0. Now that the level of effort needed to finalize the S-100 Portrayal Model and the S-52 Presentation Library have subsided, it is likely that this effort could be completed in the next three or four months.

S-100 Portrayal Model Builder

The S-100 Portrayal Model is now being used in the IHO S-100 Portrayal Model Builder Development Contract, which was awarded to Caris in mid July 2013. This six-month effort will not only deliver a working web-based S-100 Portrayal Model Builder, but also SVG formatted symbol graphics of all ENC symbols. Other work includes reviewing and making recommendations for improving the logic in any S-52 Conditional Symbology Procedures that must be converted from the existing ULM (prior to PresLib4.0 in Nassi-Schneiderman Diagrams) into XSLT for use in S-101.

Final delivery of a fully compliant S-101 Portrayal Catalogue requires the finalization of an S-101 Feature Catalogue, which is still being developed. Also required is development of the symbolization rules for new or modified S-101 ENC features and attributes. Delays in delivery of either of these items may delay the testing and development of the S-101 Portrayal Catalogue, which may result in the need to extend the portrayal catalogue contract at additional cost.

Paper Chart and ECDIS Chart 1


Members of DIPWG and the CSPCWG INT1 Sub-Working Group provided helpful critiques of early drafts of a combined paper chart and ECDIS symbology chart 1 produced by the US. This is the first chart 1 to show both paper chart (INT1) symbols side-by-side with the corresponding ECDIS (S-52) symbols (an idea proposed at least as far back as 2008 at the last Colours and Symbols Maintenance Working Group meeting in Cape Town). The new US Chart No. 1, Edition 12 (15 April 2012) can be downloaded for free from the NOAA website at

<http://www.nauticalcharts.noaa.gov/mcd/chartno1.htm> and copies of the InDesign files and graphics used to create the document have been provided to each of the three INT1 Sub-Working Group members. The US can provide additional copies of the InDesign files and graphics to any country wishing to incorporate ECDIS symbology into their own chart 1.

Expanding the role of the CSPCWG INT1 Sub-Working Group or forming a similar ECDIS Chart 1 Sub-Working Group to continually improve and standardize the presentation of ECDIS symbology in chart 1s might be a useful undertaking for HSSC to promote.

Chart Presentation Bulletins

DIPWG released one chart presentation bulletin last year, S-52-CPB-No 10, "Portrayal of virtual AIS aids to navigation," which is identical to the encoding bulletin released simultaneously by TSMAD, [EB54, "UOC Clause 12.14.1 AIS equipment aids to navigation."](#) This combined Encoding and Presentation Bulletin provides guidance on the correct encoding and portrayal of virtual AIS Aids to Navigation, such as for a virtual AIS North Cardinal

Beacon  V-AIS, which uses existing S-52 symbol "parts" to construct new symbols for features encoded using the NEWOBJ object.

Technical Assistance on Portrayal of S-100 Based Products

The DIPWG Chair and TSMAD Vice-Chair both provided technical guidance and moral support to their NOAA colleague and the founding Chair of the newly formed Surface Currents Working Group regarding things to consider while running an HSSC working group and building a new product specification. No other requests for assistance regarding other S-100 based product specification development were received by DIPWG.

Changes to DIPWG Work Plan

Recommend deleting two DIPWG tasks.

| Task | Work Item | Status / Remarks |
|------|---|---|
| A.4 | Issue Maintenance Document No. 9 of S-52. | Recommend Deleting this Work Item No need for this Maintenance Document after the new PreLib4.0 in released |
| A.5 | Develop new Presentation Library Version 3.5 and coordinate with TSMAD for appropriate changes to S-64. | Recommend Deleting this Work Item Presentation Library Version 4.0 has been completed. |

Progress on HSSC Action Items

| HSSC-4 Action No. | Title | Action |
|---|---------------------|--|
| 19 | DIPWG Work Plan | DIPWG Chair to amend the title of work item A.5 in the DIPWG work plan, to read: "Develop new Presentation Library Version 3.5 and coordinate with TSMAD for appropriate changes to S-64". |
| Status: Completed Work plan had been updated. This completed task is now being recommended for deletion from the DIPWG work plan. | | |
| 20 | Portrayal Modelling | DIPWG Chair to send a note to OEMs to clarify the objectives of a side meeting on portrayal modelling issues, to be held in conjunction with the ECDIS anomalies workshop (London, UK, 15-16 October 2012) |
| Status: Completed E-mail was sent to OEMs. | | |

| HSSC-4 Action No. | Title | Action |
|---|--|--|
| 21 | Portrayal & PresLib Issues | UK (Mr Jonathan PRITCHARD) to provide the DIPWG Chair with all the feedback and information gained from ECDIS anomalies analysis, concerning portrayal and Presentation Library issues. If there is an issue that needs immediate action, DIPWG to issue a portrayal bulletin. |
| Status: Completed A summary of ECDIS anomalies was received. No immediate need for any portrayal bulletin was identified. | | |
| 22 | DIPWG Work | DIPWG Chair to liaise with the IHB to agree how best to expedite the work of DIPWG (especially the S-100 portrayal model work) by facilitating the attendance of key persons to focus group meetings. |
| Status: Completed IHB provided airfare for participants to meet in Hamburg 5-7 March 2013 for an S-100 Portrayal Model meeting. (A portrayal model break-out session was also led prior to the Hamburg meeting at TSMAD25 in Tokyo Jan 2013.) | | |
| 23 | Contracting out Portrayal & PresLib Enhancements | DIPWG to draft a statement of requirements for each of the following tasks and submit them to the IHB for tendering: a. correction of errors in the hydrographic portrayal register; b. updating the digital presentation files; and c. creation of an S-100 portrayal catalogue builder. |
| Status: Completed a. Portrayal register errors have been corrected by Geomod pro bono b. Digital presentation files for PreLib 4.0 have been updated by Furuno pro bono c. The statement of requirements was written and a contract has been awarded to Caris | | |
| 25 | S-100 & S-101 Master Plan | TSMAD and DIPWG Chairs to produce, by the end of January 2013, a "master plan" document for the development of S-100 and S-101, in accordance with the life cycle diagram included in resolution 2/2007, incorporating sequencing with DQWG and DPSWG, and scheming the implications for stakeholders. |
| Status: Completed See HSSC5-05.1C S-100 Master Plan | | |

Problems Encountered

No significant problems to note.

Any Other Items of Note

None.

Conclusions and Recommended Actions

- DIPWG made significant progress in three areas
 - Completion of a new edition of the S-52 Presentation Library
 - Completion of the S-100 Portrayal Model
 - Award of the S-100 Portrayal Catalogue Builder Contract
- It is expected that an S-101 Portrayal Catalogue can be delivered by the end of January 2014 to support S-100/101 testbed activities.
- DIPWG aspires to complete the final edits required to finish Section 9 of each of the S-100 and S-101 documents by January 2014.
- The new US Chart No.1 can provide the foundation for other chart 1 producers who wish to incorporate ECDIS symbology into their own chart 1 documents. Expanding the role of the CSPCWG INT1 Sub-Working Group or forming a similar ECDIS Chart 1 Sub-Working Group to continually improve and standardize the presentation of ECDIS symbology in INT1s and other national chart 1s.

Justification and Impacts

DIPWG has accomplished much to support improving the existing S-52 Specification and the development of the new S-100 Standard and S-101 specification. Continued progress depends on sustaining the support of OEMs. If industry experts and member states cannot continue the current level of support to develop and review ongoing initiatives, the progress of implementing S-100 may be impacted.

Action Required of HSSC

The HSSC is invited to:

- a. **endorse** the DIPWG report,
- b. **approve** the DIPWG workplan
- c. **consider** establishing an ECDIS Chart 1 consultative body within an appropriate working group to improve and standardize presentation of ECDIS symbology within national chart 1 documents, similar to the role played by the CSPCWG INT1 Sub-Working Group,
- d. **acknowledge** the dedicated work of the members of DIPWG, especially those industry partners who have tirelessly worked on developing the S-100 Portrayal Model and a new edition of the S-52 Presentation Library.

List of Participants at the DIPWG 5 Meeting

Annex A

| IHO MS | Organization | Family Name | Given Name | Email |
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DIPWG Proposed Work Plan – October 2013 to October 2014

DIPWG Tasks

- A Maintain S-52 and its associated "Presentation Library" (IHO Task 3.3.1 refers)
- B Contribute to IEC TC80/WG13 symbol harmonizing work (IHO Task 3.3.3 refers)
- C Monitor Relevant International Standards (IHO Task 2.3.2 refers)
- D Introduce new website based recommendation service for good application practice of S-52 (IHO T3.3.1 refers)
- E Contribute to harmonised rules for ENC loading strategy, use of SCAMIN and overscale indication (IHO Task 2.3.2 refers)
- F Assess the impact of other IHO standards on S-52 C&S regulations (IHO Task 2.3.2 refers)
- G Improving ENC Consistency/Loading strategies (IHO Task 2.3.2 refers)
- H Harmonisation of pick report presentation (IHO Task 2.3.2 refers)
- J Harmonisation with CSPCWG (IHO Task 2.3.2 refers)
- K Maintain the DIPWG bulletin and FAQ section on the IHO website (IHO Task 2.3.2 refers)
- L Investigate enhancing the appearance of existing traditional paper chart symbols used in ECDIS by modifying their size, shape and colour (IHO Task 2.3.2 refers)
- M Provide technical assistance on Portrayal for S-10x related product specifications (IHO Task 2.3.2 refers)
- N Conduct the 2014 meeting of DIPWG (IHO Task 2.3.1 refers)

| Task | Work Item | Priority H high M med L low | Mile- stones | Start Date | End Date | Status P planned O ongoing C completed | Contact Person | Affected Pubs /Standard | Remarks |
|----------------|--|--------------------------------------|-----------------|---------------|-------------|---|--|---|---|
| A.1 (2.4.1) | Resolve any problems or errors identified in S-52 and its Presentation Library as appropriate | H | | 2009 | - | O | Colby Harmon Tom Mellor | S-52 | Continuing Work Item This addresses the routine maintenance of S-52. |
| C.1 (2.4.7) | Monitor Relevant International Standards | L | | 2011 | - | O | Colby Harmon Julia Powell | S-52 S-100 Portrayal Register | Continuing Work Item It is vital that DIPWG monitor the activities of these standards bodies and to advise HSSC if there is a need to update the relevant IHO standards to incorporate changes from external standards bodies. |
| F.2 (2.4.4) | Maintain S-100 Portrayal | H | | 2005 | - | O | Colby Harmon Tom Mellor Julia Powell | S-52 S-100 Portrayal Register | Continuing Work Item This work item will refine and expand the initial development of Portrayal and Symbol Models by incorporating clarifications, corrections, and extensions as needed for the community of users that have implemented the S-100 data model. |
| F.3 (2.4.3) | Assist TSMAD in identifying which aspects of S-52 should be incorporated into S-100 and S-101 Specification. | H | | 2009 | 2013 | O | Colby Harmon Tom Mellor Julia Powell | S-100 S-101 | Continuing Work Item Develop the S-100 Portrayal Section, the S-101 Portrayal Section and the associated S-101 Portrayal Catalogue. This includes incorporating relevant portions of S-52. |
| F.4 (2.4.5) | Maintenance of S-101 Portrayal Component and Portrayal Catalogue | H | | 2012 | - | O | Colby Harmon Tom Mellor Julia Powell | S-101 S-100 Portrayal Register | Continuing Work Item Maintain S-101 Portrayal by incorporating clarifications, corrections, and extensions as needed for the community of users that have implemented S-101. |
| J.1 | Liaise with CSPCWG | M | | 2009 | - | O | Colby Harmon Jeff Wootton | S-52 S-100 Portrayal Register | Continuing Work Item This work item is to review and address, as appropriate, any changes in paper chart portrayal standards, in close coordination with TSMAD. |
| K.2 | Maintain Chart Presentation Bulletins on the DIPWG page of IHO website | M | | 2008 | - | O | Colby Harmon Alberto Costa Neves | | Continuing Work Item This work item addresses the routine posting of CPBs on the IHO website. |

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|----------------|---|---|--|------|---|---|-------------------------------------|--|---|
| K.3 | Review and revise other informational pages on the DIPWG page of IHO website | L | | 2008 | - | O | Colby Harmon Alberto Costa Neves | | Continuing Work Item This work item addresses the continual improvement of the DIPWG page on the IHO website. |
| L.1 | Investigate enhancing the appearance of existing traditional paper chart symbols used in ECDIS by modifying their size, shape and colour. | L | | 2009 | - | O | Colby Harmon | S-52 S-100 Portrayal Register | Continuing Work Item Enhancing existing S-52 symbology to take better advantage of modern ECDIS display capabilities. |
| M.1 (2.4.6) | Provide technical assistance on Portrayal for S-10x related product specifications. | M | | 2009 | - | O | Colby Harmon | | Continuing Work Item The use of S-100 by both IHO and non-IHO entities calls for DIPWG to provide technical assistance to these groups on the development of portrayal catalogues for S-100 based product specifications. |