

**Joint 28th Transfer Standard Maintenance and Applications Development Working Group
(TSMADWG)
and
6th Digital Information Portrayal Working Group (DIPWG) Meeting
Sydney, Australia (31 March – 4 April 2014).**



Minutes

TSMAD

Chairman: Barrie Greenslade (UKHO)

Vice Chairman: Julia Powell (USA, NOAA)

Secretary: Anthony Pharaoh (IHB)

DIPWG

Chairman: Colby Harman (USA, NOAA)

Vice Chairman: Tomas Mellor (UK)

Secretary: Alberto Costa Neves (IHB)

Annexes:

Annex A – List of Actions

Annex B – List of Documents

Annex C – Agenda

Annex D – List of Participants

1. Opening and Administrative Arrangements

Mr. Mike Prince opened the meeting and welcomed members to Sydney, Australia on behalf of the AHO; Commodore Brett Brace who was not able to do so due to another engagement. He noted that the work being undertaken by these working groups was important for furthering the aims of the organization and reminded the meeting that the S-100 standard had been adopted as the data model for the IMO e-navigation initiative. He wished the all participants a good and productive meeting and a pleasant stay in Sydney.

2. Approval of the Agenda.

The joint agenda (document 2A) was approved by the meeting with a few minor exceptions. BG noted that in order to complete some of the work items it would be necessary to convene a few breakout groups during the course of the meeting. He proposed to table item 11.9a before 11.1A and proposed that under agenda item 12.1A, there should be a discussion about how best to complete the review of S-64 and this may require a breakout meeting. LP noted that she intended to submit an additional paper which should be dealt with as an INF paper. Agenda approved.

3. Matters Arising from TSMAD-27 (Monaco). – fix this on the web site ...

3A. The minutes of the 27th TSMAD meeting (paper TSMAD28-3A) which took place at the IHB, Monaco (December 2013), were reviewed and approved without comment.

3B. The meeting reviewed the list of actions from the 27th meeting.

No	Reference	Action	By	Status
1	4.1.1	TSMAD to take into consideration the comments reported in paper HSSC5-INF2 (Appendix to Annex A), for inclusion in the next edition of the Use of the Object Catalogue (S-57, Appendix B.1, Annex A). <i>BG noted that TSMAD needs to develop a paper for the next HSSC dealing with NEWOBJ. See also HSSC5/3. See also comments by France, Italy, Mexico, Thailand, UK and Uruguay.</i>		Ongoing
2	4.1.1	TSMAD to finalize the draft edition 3.0.0 of S-64 at TSMAD-27 (December 2013). <i>TP reported that Edition 3.0.0 was distributed to stakeholders – together with a comments sheet. Comments were received from Furuno Finland and SAM Electronics.</i>	TR / BG	Ongoing
3	4.1.1	TSMAD Chair to provide IHB with a clean copy of the draft edition 3.0.0 of S-64 for posting on the IHO website as a familiarization version. <i>TP reported that a copy had been placed on the IHO web site's document download page under the section for documents under development.</i>	BG	Done
4	4.1.1	IHB to seek HSSC approval of the draft edition 3.0.0 of S-64 by correspondence through HSSC Circular Letter before end of October 2014 (in line with the publication of the new edition of IEC 61174). <i>Comments need to be included.</i>	IHB	Ongoing
5	4.1.1	TSMAD to finalize the draft edition 5.0.0 of S-58 at TSMAD27, in accordance with the guidance provided at HSSC-5.	RF	Completed
6	4.1.1	TSMAD, in liaison with DIPWG, to provide the IHB with a statement of requirements for developing a Feature Catalogue Builder. <i>BG noted that KHOA had agreed to build a Feature Catalogue Builder and this item had been overtaken by events.</i>	JP	Closed
7	4.1.1	TSMAD Chair to incorporate in the draft S-101 Value Added Roadmap the comments expressed during HSSC-5. Needs a few minor changes? <i>BG reported that this item had been completed – see papers 10.2A and 10.2B.</i>	JP	Complete
8	4.1.1	TSMAD chair to include an additional item in the TSMAD work plan to review the S-101 Value Added Roadmap annually. <i>BG reported that this item had been completed – see papers 10.2A and 10.2B.</i>	JP	Complete
9	4.1.1	TSMAD chair to include an additional item in the TSMAD work plan to review the S-100 Master Plan annually. Needs to be completed and will be reviewed annually at HSSC. <i>BG reported that this needs to be done but will be included for HSSC6.</i>	BG / IHB	Ongoing

10	4.1.1	TSMAD chair to consider the impact of the recommendations contained in HSSC5-05.1F (S-101 impact study) on the S-101 Value Added Roadmap. The paper submitted to HSSC5 is to be completed with some modifications.	BG / JP	Complete (paper 10.2A and 10.2B)
11	4.1.1	TSMAD to include the KHOA S-101 test bed program as part of the TSMAD S-101 test plan strategy. <i>JP reported that this item had been completed.</i>	JP	Complete
12	4.1.1	TSMAD to assist the TWLWG in the development of a tidal product specification for navigational surface and for tidal data transfer; that could be used for generating dynamic water levels and navigational surfaces in ECDIS. <i>TP reported that this item had been completed. He had attended the TWLWG meeting that had taken place during the week prior to the joint TSMAD/DIPWG meeting. (See paper 6.4A).</i>	TP	Complete
13	4.1.1	TSMAD to consider the impact of introducing Service Lifecycle Management (SLM) in the S-101 Roadmap and S-100 Master Plan. To be discussed at the next (TSMAD27) meeting. <i>BG noted that this should not just be at an S-101 level, but should include other standards. He will report this at the next HSSC meeting and requested that if any meeting members had additional comments, to please let him know.</i>	BG	Ongoing
14	4.1.1	Commence work on the S-58 checks for S-101, and provide a report and recommendation of the checks that should be included as part of S-101 or as a separate document for consideration at the TSMAD28 meeting. <i>RF reported that he had not made any progress on this and needed to discuss the issue with JP before he could continue.</i>	RF	To be carried forward. JP to provide a paper for the next meeting
15	4.4.3A	Refer the issue concerning digital signatures (that are to be used for the authentication process in S-101) to the DPSWG for their consideration and report back. This should also take account of other S-100 based product specifications. <i>TP reported that the DPSWG are to hold their next meeting between 13 to 15 May and he would ensure that it was placed on the agenda for discussion.</i> <i>HP noted that the target is to have a single common scheme described in S-100 and implementations of the scheme described in the product specifications where required.</i>	BG	Ongoing
16	4.4.3A	Develop a paper outlining the options for S-101 catalogue versioning in ECDIS. The paper should be based on the concepts in paper TSMAD26-10.5 and should be for consideration at the TSMAD28 meeting.	BG	Complete Paper 10.7B
17	4.4.7	Insert the agreed to specifications on multiple dataCoverages for S-101 into the draft document. There should be no more than 3 data coverages per cell. Investigate using a step approach. <i>JP reported that Part 1 had been completed, but more work may need to be done to cater for multiple data coverages in the future.</i>	JP	Partially Complete

18	4.5.1	Request the DPSWG chairman to extend the proposals on implementing auxiliary files in S-101, (reported as TSMAD26 action item 33). This is to be submitted to the TSMAD28 meeting. (DPSWG Chair / RF). <i>BG reported that this had been completed and submitted as paper 10.9A.</i>	DPSWG Chair / RF	Complete See paper 10.9A
19	4.5.1	TSMAD sub WG is to be formed to investigate producing documentation on the implementation and use of compositions, aggregations and associations for inclusion in the DCEG and S-101. <i>BG noted that this had been discussed during the previous week. It was agreed that associations and aggregations need to be included in the catalogue.</i>	AT / JP / JW	Ongoing See Paper 11.6A
20	4.5.2A	Report to the DQWG that the proposals in paper TSMAS27-4.5.2A have been accepted by TSMAD and request DQWG to use the proposed concepts as the baseline for developing the portrayal of quality information in ECDIS. <i>BG noted that this had been discussed during the combined meeting which had taken place in Wollongong during the previous week.</i>	SL	Complete
21	4.5.2A	Develop paper for the next TSMAD/DIPWG meeting proposing how Lakes, Rivers, Canals, Lock Basins and Dock areas on LNDARE should be encoded and portrayed. <i>BG noted that this item had been completed and was included as paper 10.6A.</i>	FR	Complete See Paper 10.6A
22	4.5.2A	Remodel the concept for inshore and offshore (structures on the land and on the sea). <i>JW reported that has not been possible to progress this item.</i>	JW / RF	Ongoing
23	4.5.2A	Amend the UOC for coastline references dock area. <i>JW reported that it has not been possible to progress this item at this time due to time constraints.</i>	JW	Ongoing
24	4.5.2A	Develop a paper on how to deal with overlapping survey areas (including swept areas). The paper is for submission to the March 2014 DCEG meeting. <i>JP reported this had been discussed at the joint meeting and could be considered as complete.</i>	SL	Complete
25	4.5.2B	A sub WG is to be formed to complete the work on modeling lights information for S-101. This work is to be based on paper TSMAD27-4.5.2B and must be coordinated with the IALAs modeling work for lights information. <i>JW reported that this had been discussed during the DCEG meeting and there had been some proposed changes which he expected to get resolved in a breakout group during the course of the meeting. This was completed.</i>	JW / SL / FR / HA	Complete
26	4.7.1	Provide the IHB with the final text of S-58 Edition 5. Circulate the new edition to Member States for approval. <i>RF reported that this had been completed</i>	RF / IHB	Complete

27	4.8.1A	<p>Include a revised version of the table from the S-58 Logical Consistency check 1780, in the UOC. (JW) The table is to be expanded to include the “attribute value” and “name”. (JP).</p> <p><i>JP reported that this had been completed.</i></p>	JP	Complete
28	4.8.1B	<p>Revise paragraph 1 of the UOC section 6.3.2 to make it consistent with the proposed amendment to the UOC section 6.2.1 that are proposed in paper TSMAD27-4.8.1.</p> <p><i>BG reported that it will be necessary to make some additional changes and these will be discussed during the course of the meeting.</i></p>	JW / RF	Ongoing
29	4.8.1B	<p>Produce an Encoding Bulletin providing guidance on “areas to be avoided” as proposed in paper TSMAD27-4.8.1B.</p> <p><i>JW noted that this item still needed to be completed.</i></p>	JW	Ongoing
30	4.8.2	<p>Write a requirement specification for how the DCEG should be managed in the future.</p> <p><i>JP reported that this item still needed to be completed.</i></p>	JP / JW	Ongoing
31	4.3.1A	<p>Completed S-100 Edition 2.0 as proposed in paper 4.3.1.A for consideration by HSSC6.</p> <p><i>BG reported that an S-100 meeting had been held in Hamburg Germany and he will report on the results of this meeting later in the meeting.</i></p>	BG	Ongoing
32	6.1	<p>The S-102 sub WG is to implement the changes identified in the latest version of the BAG specification (by the Open Navigational Surface WG). WL to lead the sub-WG, and TSMAD members invited to contribute.</p> <p><i>WL reported that the S-102 Sub-WG had commenced work on the next edition of the PS - see paper 12.6A.</i></p>	WL	Closed See paper 12.6A
33	INF1	<p>TSMAD members to discuss the issues raised in the INF1 paper (on data quality) with their home offices and report any comments they may have to the DQWG.</p> <p><i>BG reported that the DQWG met last week but no comments had been received.</i></p>	ALL	Complete
34	4.11.1	<p>The S-100 maintenance group are to ensure that FOID is made optional in S-100 and ISO 8211.</p> <p><i>HB reported that this had been included in the encoding section.</i></p>	HB	Complete
35	4.3.3	<p>Refer the new Metadata Part 4 (in paper 4.3.3) to the S-100 maintenance working group for inclusion in S-100 Edition2.0.</p> <p><i>BG reported that this had been completed and the issue was also discussed at the S-100 meeting in Hamburg and there were a few associated issues to be resolved.</i></p>	JP	Complete

4. Matters Arising from DIPWG-5 (Silver Spring, USA).

4A. Minutes from 5th DIPWG meeting.

The minutes were reviewed and approved without comment.

4B. Actions from the 5th DIPWG meeting.

CH introduced the action items from that last meeting and noted that the item numbers were not sequential because they had been extracted from the combined list of the last joint meeting.

Action item 3. DIPWG is to establish a “PresLib 4 finalization Sub-WG” in order to review and finalize the draft edition of S-52 Ed 4, without making any further content changes. *CH reported that the review had been completed and the item could be closed.*

Action item 4. Update the ECDIS Chart 1 and incorporate all necessary changes to Version 4.0 of the S-52 Presentation Library. *Completed and can be closed.*

Action item 5. Make the necessary changes to the S-52 Presentation Library in order to provide guidance on how the safety depth and safety contour values should be implemented. *Completed and can be closed.*

Action item 6. DIPWG S-101 portrayal rules Sub-WG to be created in order to develop revised rules for changes to the lookup tables that have occurred as a result of changes in the S-101 DCEG. *CH reported that this item was ongoing.*

Action item 8. Determine what can be done about symbols being cut off due to overlapping cells and improving the line weight of the tower symbols so that they display more prominently. *CH reported that this item had been partly completed. The line weights specified in the addendum to the Presentation Library had been normalized; however the issue of cut off symbols in overlapping cells needs further attention.*

Action item 9. DIPWG to present a paper to HSSC5 asking to revise Annex B of S-52, in order to make it independent of hardware technology. *CH reported that this had been completed.*

Action item 10. Re-write the "Implementation Guidance" Annex of the S-101 Product Specification section; taking into account changes that have been made to S-52 and IEC 61174. *CH reported that the item was ongoing.*

Action item 13. Develop a guidance document describing the updating process for feature and portrayal catalogues ... for inclusion in the S-101 product specification’s implementation guide. *CH reported that a paper had been submitted to TSMAD27 (paper 4.8A), however after discussion, the paper was withdrawn, and the item is still ongoing.*

Action item 14. S-52 Sub-WG to develop the necessary logic for new attributes “minimum surrounding depth” and “default clearance depth” required to remove portrayal CSPs for wrecks, underwater rocks and obstructions. *JP reported that a paper had been submitted/discussed at the TSMAD28/DCEG meeting by Caris, and will be discussed at this meeting (paper 9.4A).*

Action item 16. Ensure that an S-101 feature catalogue is available for testing the portrayal catalogue. *JP reported that KHOA had produced a preliminary feature catalogue however some further enhancements need to be made – ongoing.*

5. Matters Arising from HSSC-5 (Shanghai, China)

5A. HSSC Actions for TSMAD

BG reported that TSMAD had received 19 actions from the 5th HSSC meeting, however these were discussed at the TSMAD27 meeting, and were in hand, and it was therefore not necessary to revisit them at this meeting.

5B. HSSC Actions for DIPWG

HSSC5/05 WG chairs to ensure that the level of detail in their respective work plans is homogeneous and that the work plans identify clearly the work items which are expected to be completed in the subsequent one or two years. *Action completed.*

HSSC5/19 and 20. Develop a statement of requirement and award a contract for a Feature Catalogue Builder (FCB). *CH reported that KHOA were working on this task, and this item had therefore been overtaken by events and is closed.*

HSSC5/40 - DIPWG Chair to provide the IHB with clean copies of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), for posting on the IHO website as a familiarization version. *This item has been completed and closed.*

HSSC5/41 and 42. The IHB is to seek HSSC approval and Member States approval of the draft editions 6.1.0 of S-52 and 4.0.0 of the Presentation Library (Annex A to S-52), by correspondence (HSSC letter and MS Circular Letter). *The action item is ongoing.*

6. Reports of Activities of Other Working Groups

6.1A SNPWG

EM reported that SNPWG has not had a meeting since the last meeting and so there was nothing extra to report other than what was reported at the TSMAD27 meeting. SNPWG will be having its next meeting during the course of the following week. He highlighted that SNPWG have requested the inclusion of new data types for truncated time in S-100. SNPWG also have a requirement for new spatial types. He noted that these were all discussed at the Hamburg (S-100 Edition 2) meeting. SNPWG continue to work on Product Specifications for Marine Protected Areas, Radio Services, Navigational Services, Traffic Management, Marine Services, Digital Mariners' Routeing Guide, Harbour Infrastructure.

6.2A CSPCWG

JW reported that due to a heavy workload, it had not been possible to submit a written report. He noted that the CSPCWG had held its 10th meeting in Wellington, New Zealand during January 2014. There had been a discussion about whether it is necessary to have multiple definitions for "Existence Doubtful" and "Sounding Doubtful".

He reported that S-4 Section B-500 had been completed and included in the latest Version of S-4 and this will conclude the revision of Part B of the publication. The next major task will be to revise Part A, however this will depend on the proposed restructuring of the HSSC Working Groups.

He highlighted some changes to S-4 that will impact TSMAD. These include new symbol for light vessels and issues (confusion) relating to interrupted light characteristics. IALA have provided some useful feedback on the issue. Feedback from mariners indicates that they preferred the RNC portrayal to ENC portrayal of lights on small scale ENCs.

He noted that there was also a discussion on very quick and ultra quick lights that may require some changes to the specifications, related to this issue of the "interrupted" light characteristics. Finally he mentioned that there had been a meeting held at UKHO to resolve the issue concerning elevation, height, and altitude. Finally he noted that Peter Jones retired as Chairman of CSPCWG at the last meeting and he had been appointed as the new Chair.

6.3A DQWG

EM reported that the DQWG had their 8th meeting in Wollongong between the 25 and 27 March 2014 just prior to the TSMAD/DIPWG meeting. A brief report on the activities of the WG had been provided in the DQWG paper

that was submitted the 27th TSMAD meeting (paper TSMAD27-4.5.2A). This paper proposed changes to three sections of the DCEG that required input from the DQWG.

There was discussion on new ways of representing data quality for surface navigation and DQWG8 paper 06A invited TSMAD to note the potential parameters and values required to drive a revised data quality indicator system, and comment where appropriate. He noted that DIPWG is invited to note the potential requirements to develop area-based colour bands providing three risk tiers which would be displayed as “temporary overlays”, and which can be switched on or off as necessary by the ECDIS operator, particularly noting that the use of a solid colour overlay may unnecessarily and inappropriately hide other important detail.

He reported that there was some discussion on comments from cruise liners with regard to portrayal of quality. The WG will report to the IHB on the use of CATZOC, especially as it relates to C-55. There had been good progress on the portrayal for data quality, and it is anticipated that a report on this will be included in a submission to DIPWG.

6.4A TWLWG

TP reported that the TWLWG had been tasked to produce a Product Specification for tidal information in ECDIS, and they were also looking into whether it would be possible to create a common transfer format for delivering near real-time water level data from water level gauges. The meeting also discussed the development of a Product Specification for exchanging tidal constituent / constants and also a Product Specification for delivering predicted tidal data so that it could be used in an ECDIS for planning purposes or for generating a tidal publication. Two representatives from an Australian company (OMC) provided a presentation to the meeting. The presentation focused on a service that facilitated the integration of high resolution bathymetry, near real-time tidal information and ship dynamics for navigational purposes. The TWLWG have formed two sub-WG to work on the Product Specifications for the transfer of tidal constituents and predicted values.

6.5A SCWG

TP reported that the SCWG had their 1st meeting in Silver Spring, USA from the 29th to 31st of May 2013. The WG is working on a Product Specification to include a surface currents overlay for use in ECDIS. The specification will include a coverage grid with multiple attributes (e.g. for attributes for current intensity and direction) at each grid point. It will include quality information which will be encoded as a point set coverage type, and will probably use HDF5 as the encoding. It was decided that the SCWG should be notified that, if they are to use HDF5 as an encoding format, they should make a proposal to TSMAD to have HDF5 included in S-100. (*See action item*).

Their next meeting is scheduled to take place Quebec City, Canada between 28 and 30 May 2014.

6.6A MSDIWG

EV reported that the MSDIWG had last met in Silver Spring, Maryland, USA between the 5th and 7th of February 2014. The meeting had been preceded by a MSDI Open Forum (4th of February). The MSDIWG had a discussion about the impact of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM). The main objectives of the UN-GGIM are to provide a forum for coordination between Member States and relevant international organizations and to propose work-plans and guidelines with a view to promoting common principles, policies, methods, mechanisms and standards for the interoperability and inter-changeability of geospatial data and services. MSDIWG are considering issues relating to climate change and how this might influence the marine spatial data policies of hydrographic organizations.

6.7A DPSWG

TP reported that the DPSWG held its last meeting at the IHB, in Monaco between the 26th and 28th of Feb 2013. An important issue that was resolved during 2013 was the expiration of the IHO top level Scheme Administrator (SA) key. The IHB generated a new SA key with an expiration date of 2033 and informed all stakeholders in advance of the changeover in order to ensure that they had time to implement the changes. The new edition of S-63 Edition 1.1.1 came into force on the 1st of January 2014 and there has been a relatively painless move to the new edition with some of the older ECDIS systems requiring more time to make the transition.

There was some discussion about S-64 during the meeting. A first revision of the DPSWG S-64 datasets has been produced, and some updates were proposed for the Guidance document. A new test (SSE27) was added. New tests to cover the use cases where an ECDIS receives datasets from two data servers were discussed. In such cases where the newer dataset has an older revision of a cell, the newer updates should always be installed but cells should not be downgraded to an earlier revision. TP reported that the DPSWG next meeting is scheduled to take place between the 13th and 15th of May 2014 in Monaco.

7. Activities of Other Organizations

7.1A IALA

EM reported that IALA had an intercessional meeting and included an e-navigation session. Input was provided by IHO and there was discussion about the impact that the requirement for data streaming would have for the IHO. He noted that S-100 does not cater for streaming and various proposals on how to make provision for this was discussed. There is still some more work on this and some concern was expressed that it would not be completed in time for inclusion in next edition (2) of S-100. After further discussion, it was agreed that this may not be a problem however an encoding format for data streaming will have to be included in S-100 Edition 3. It is anticipated that IALA will not be able to make a submission to the IHO concerning streaming until 2015. This will probably be an xml format.

7.2A ISO

TP reported on the activities relating to standards that are of relevance to TSMAD. The 19117 Portrayal had been completed and this facilitated the completion of the portrayal section for inclusion in the next edition of S-100. New work items were registered for the development of standards/specifications for; Geodetic References (document 19161), Registry Services (document 19164), Terminology (document 19104), Place Identifier (PI) Architecture - Part 2" (document 19155-2), Well Known Text (WKT) Representation of Coordinate Reference Systems" (document 19162) and Content Components and Encoding Rules for Imagery and Gridded Data (document 19163). ISO/TC211 also issued a call for a new work item proposal on dealing with the preservation of digital data and metadata.

The following documents were approved to undergo systematic reviews; ISO 19107:200 – Spatial Schema; ISO/TS 19127:2005 – Geodetic Codes and Parameters; ISO/TS 19130:2010 – Imagery Sensor Models for Geopositioning ; ISO/TS 19139:2007 – Metadata – XML Schema Implementation.

7.3A IEC

HP reported that a paper had been submitted proposing the need to synchronize the relevant IEC and IHO standards. The next meeting of the IEC TC80 WG8 will take place during first week of May. It is planned that the next edition of IEC 61174 should be available in Sept 2015. There is a need to make sure that the release of S-64 and S-52 are synchronised with the new edition of IEC 61174.

He noted that there had been discussion about the development of a route exchange format and he noted that the content model for this should be base on the S-100 model. There will a need for an S-100 Project Team to work on this specification.

7.4A WMO JCOMM ETMSS

JP reported that the second and final comment period for the Weather Overlay Feature Catalog and Product Specification closed on 31 March. NOAA's Ocean Prediction Center (OPC) is working to address all comments and suggestions made by ETMSS members. OPC plans to have a completed Feature Catalogue ready by 15 April 2014. Several additional comments for the Feature Catalogue were received however no comments were received for the Product Specification. The next step will be to review documents with NOAA NOS/OCS, and then schedule a meeting with ESRI to begin discussing implementation and testing phase. OPC is also working with the Brazilian Navy to submit an application for a grant that would allow a visiting Brazilian scientist to assist with the Weather Overlay project from August through November 2014.

7.5A WMO JCOMM ETSI

No report provided.

7.6A DGIWG

No report provided.

7.7A OGP

TP reported that in 2010, the Committee set up a task force to develop a standard GIS data model for seabed survey. This model, called "Seabed Survey Data Model" (SSDM), is meant to be used both as a deliverable standard between Oil and Gas (O&G) companies and survey contractors, and a data model for managing seabed survey data at an enterprise level within O&G companies.

The IHB became aware of the development of SSDM in early 2013 and invited the Chair of the IHO TSMAD Working Group to liaise with the OGP Geomatics Committee to discuss potential synergies with the development of S-100, the IHO Universal Hydrographic Data Model.

In that context, Tom Richardson, from the UKHO, attended on behalf of the IHO part of the last meeting of the OGP Geomatics Committee which took place in The Hague, Netherlands, on 26-27 April 2013. He provided a presentation on S-100, explaining its contents, use, current status and development plans.

7.8A GMWG (Geospatial Maritime Working Group)

No report provided.

7.9A DOALOS

MMG reported that the Maritime Boundary Product Specification which was developed in response to a requirement from the UN Division for Ocean Affairs and the Law of the Sea (DOALOS) to submitting digital datasets instead of voluminous paper files was submitted to the HSSC5 meeting.

There was a proposal to change the name of the Product Specification to; "Maritime Limits and Boundaries". This was agreed and Geoscience Australia was tasked to change the title accordingly and to include the number S-121 which was allocated to the PS by the HSSC5 meeting. He also noted that HSSC asserted that the maintainer of the standard would need to be listed as "Australia".

8. S-52 Portrayal Topics

8.1A S-52 Ed 6.1 & PresLib Ed 4.0

CH reported that significant progress in de-conflicting and resolving review comments had been made during the DIPWG5 meeting, but time was needed to finalize the Presentation Library and two further meetings were held. The updated versions of the documents were presented to the HSSC5 and a few minor editorial changes and paragraph number cross-reference corrections were made subsequently.

CH thanked TM and his team for the significant amount of work that they had carried out. TR reported that a clean draft version and a redline version of S-52 Edition 6.1.0 and its Annex A – Presentation Library Edition 4.0.0 had been placed on the IHO web site for downloading. A significant amount of work had been done by correspondence due to the need to synchronize the work with the revision of IEC 61174.

8.2A Review Comments for S-52 Ed 6.1 & Presentation Library 4.0

CH provided an overview of the timeline for the release of S-52, Ed 6.1.0 and Presentation Library, Ed 4.0.0. In mid-July, the IHO will send a circular letter to IHO Member States to notify them that the final versions of the new editions are available for review until 30 Sep 2014, with a view for the new documents being fully implemented by 30 Sep 2015. He noted that there are also dependencies on the completion of S-64 Edition 3.0.0 and the new edition of IEC 61174. (*See action item*).

8.2B Updated S-52 Ed. 6.1 & Presentation Library Ed. 4.0

CH reviewed the consolidated list of comments that were received in response to the DIPWG Letter 1/2013 concerning S-52 and the Presentation Library Review issues, and the following decisions were agreed by the meeting;

- The proposal to use “must” instead of “should” was agreed. (*See action item*).
- Concerning the Terms and Definitions, CH noted that these were moved to S-32 Appendix 1 some years ago. Many of these had already been defined in S-32, and it was agreed to remove any outstanding terms and definitions that are already in S-32. (*See action item*).
- The proposed changes to the “ECDIS Display Concept” were agreed.
- The proposal to change “in which case Colour & Symbol Specifications 2.3.2” to “in which case S-52 Edition 6.1 Colour & Symbol Specifications 2.3.2”, was agreed
- In section 8.5.1, it was agreed to provide the reference to the S-64 test that shows the example where text can extend beyond the boundary. (*See action item*).
- The proposal to add an example for transparent colour fill was agreed.
- The proposal to change “All mandatory attributes required by S-57 Appendix B1, ENC Specification” to
- “All mandatory attributes required by S-57 Appendix B1, ENC Specification, including the changes in Supplement 3” was agreed.
- It was decided that the item questioning whether S-52 should provide symbolization for overlap areas (i.e. similar to what it provides for ENC/non-ENC data) should be deferred.
- The proposal to remove the note at 10.2 was agreed.
- Concerning the issue relating leap-year dates at item 10.4, (e.g. if there is a date dependent feature with a leap year sequence). HP proposed that this should be fixed in S-57 and then it will be easier to fix in S-52. It was agreed that this could be fixed via an encoding bulletin. (*See action item*).
- The proposal 1.4.1 concerning the structure of the specification was agreed.
- The proposal at 1.2e. CH agreed to investigate and report back to the meeting.
- The proposal to harmonize para 1.4.1 with the new structure of the document was agreed
- Square brackets (2.3.1e) was agreed
- The comment concerning testing for all colour tables proposed at 4.2.3 was agreed.
- Proposal 4.2.5 to change to “must” was agreed.

The meeting endorsed the new S-52, Edition 6.1.0 and Presentation Library, Edition 4.0.0 and agreed that it should be forwarded to HSSC for approval.

9. S-101 Portrayal

9.1A and 9.1B S-52 content for S-101 Portrayal Survey

CH noted that during January 2014 a survey was sent to S-101 stakeholders to assess and verify which portions of the new editions of S-52 and its Presentation Library would need to be included in S-101. Only six responses were received, however it was agreed that the responses provided enough information to make some preliminary decisions. These are presented below for comment;

Section 2.1.2. The diversity and flexibility of ECDIS. It was decided to keep this as part of an introduction to S-101. Furthermore, it was proposed to use this to provide some explanatory text in the S-100 Portrayal section. It was noted that S-100 also needs to cover non-ECDIS options.

Section 2.1.3. Colour discrimination on the display. It was proposed that this type of explanatory text should be moved to the Portrayal section of S-100.

Section 2.2.3. Route Planning / Route Monitoring Look-ahead. Decision: It was proposed that this is an ECDIS Design Consideration. S-101 does not deal with route planning so it doesn't really belong in S-100. BG proposed that there should be a template for Product Specifications that are to be used in ECDIS, which could be included as an informative annex to Part 9 of S-100.

The Main 2.2.5. Scale and range indicators. It was decided that this should go into the "ECDIS Design Considerations" section.

Section 2.2.8. Displaying text. It was decided that this should go into the "ECDIS Design Considerations" section.

Section 2.3.3b. Selecting objects for the route monitoring display. Decision: this is to go in the introduction of S-101 Portrayal, and everything else is into the Portrayal Catalogue. This implementation of the model is based on the IMO model.

Section 2.3.3d. Linkages in selecting mariner's options. Decision: There needs to be a clear statement indicating that no linking is allowed. This goes into the ECDIS "Design Considerations" section.

Section 5.2.2. Colour display capability. Decision: This goes into the ECDIS "Design Considerations" section.

Section 5.2.5. Colour Differentiation Test Diagram; grey scale. Decision: Remove from S-101.

Section 5.2.5 TABLE. Condensed Colour Tables. It was decided to remove the table as it will be part of the Portrayal Catalogue.

Section 5.2.5. Colour table 2.2: DUSK. It was decided to remove the table as it will be part of the Portrayal Catalogue.

Section 5.2.5. Colour table 2.3: NIGHT. It was decided to remove the table as it will be part of the Portrayal Catalogue.

Section 5.2.5 Annex C. It was decided to remove this from S-101.

Section 6. The elements of the Presentation Library – an overview. Decisions: Review for introduction of S-101.

Section 6.1. The Colour Coding Scheme. Decision: Review for introduction of S-101.

Section 6.2. The Library of Symbols, Fill Styles and Line Styles. Decision: Keep the context of the clause for S-101, but ensure that it does not contradict S-100.

Section 6.3. Symbology Instructions. Decision: Remove from S-101 as it will be covered by the Portrayal model.

Section 6.7. Mariners' Navigational Object Classes. Decision: A better solution would be for these to be in their own product that describes their features and their portrayal. It was agreed they do not belong in S-101.

Section 8. The Vector Symbol Description Language. It was agreed that this section can be moved to S-100.

Section 8.1. Size and Orientation of a Vector-Symbol. Decision: Remove from S-101

Section 8.2. Description of Complex Line Style rendering. Decision: The text is useful for S-100, but is not needed in S-101.

Section 8.3.1. Sample Definition in Vector Format. Decision: Not needed for S-101.

Section 8.3.2. Linestyle Symbols. Decision: Not needed for S-101.

Section 8.3.3. Sample Implementation of the Composite Complex Linestyle Symbols. Decision: Useful for S-100 but not needed for S-101.

Section 8.4. Symbology Instruction for Area Objects. Decision: This might be useful for S-100, but is not needed for S-101.

Section 8.4.1. Fill Operations. Decision: This is part of S-100 and is not needed in S-101.

Section 8.4.2. Transparent Fill. Decision: This is part of S-100 and is not needed in S-101.

Section 8.5. Area Symbolization by a Centred Symbol. Decision: This is part of S-100 and is not needed in S-101.

Section 8.5.1. Positioning centred symbols and text. Decision: This is part of S-100 and is not needed in S-101.

Section 8.5.5.1. Centred symbol. Decision: Maybe should be included in the ECDIS Design Consideration but should not in S-100 or S-101

Section 8.5.2. Centred symbols on a ship-centred display. Decision: Maybe should be in the ECDIS Design Consideration but not in S-100 or S-101.

Section 8.5.3. Calculating the representative point of an area. Decision: Remove from S-101.

Section 8.5.4. Pattern Fill & Textures for areas. Decision: Remove for S-101.

Section 8.4.1. Plain and Symbolized Boundaries. Decision: Needs to go in S-101, noting that there are two ways of symbolizing the same symbol.

Section 8.4.2. Masked Lines. Decision: This instruction does not need to be carried forward in S-101, as it is covered in S-100.

Section 8.4.3. Area Borders. Decision: Remove from S-101 as this should be part of S-100.

It was decided that those sections of S-52 that should be included in S-101 (as a result of meeting discussions), should be consolidated and sent to TSMAD/DIPWG members for formal review and comment. (*See action item*).

9.2A Updated LUTs to use for building S-101 PCs.

DG noted that there are also many new or modified features, attributes and enumeration combinations that are implemented in S-101 for which no corresponding look-up table portrayal rule exists in S-52.

The use of XSLT can provide methods for creating portrayal rules that depend on mariner selected depth values, that depend on spatial component attributes, and that can result in a change to the default display category, viewing group, display priority or over-radar settings for features. SPAWAR need not address these issues in the S-101 look-up-tables.

The meeting endorsed the use of the new S-101 portrayal rule look-up tables to assist in the creation of the first S-101 Portrayal Catalogue, which will subsequently be used as part of the S-100/S-101 test bed. This was agreed by the meeting. (*See action items*).

DG noted that certain combinations of portrayal such as AISAidToNavigationType and CategoryOfAISaidToNavigation would be valid cases, and there would be a requirement for as many as 36 lookup table entries and this would be difficult to manage. The concept of sub-lookup tables was introduced and has been expanded to allow the lookup of combinations for multi-value attributes.

Text Output Changes. It was proposed to replace with the TX command to draw the featureName.displayName directly with something else.

The meeting endorsed the recommendations and the inclusion of the proposed actions in the list of actions. (*See actions items*).

9.2B Updated LUTs_S-101 Portrayal Catalogue ZIP [Stamenkovich]

MS noted that document 9.2B contained a set of MS word files (in a zip archive) which includes the lookup files for the Presentation Library. He invited meeting members to review the document files and report any anomalies.

9.3A S-52 Conditional Symbol Procedure (CSP) Migration to S-101.

No paper submitted and no discussion.

9.4A Surrounding Depth of Wrecks, Rocks and Obstructions [Astle]

HA noted that the DCEG sub-working had proposed to include a new system attributes “minimum surrounding depth” and “default clearance depth” to help eliminate the portrayal CSPs for wrecks, underwater rocks and obstructions. TSMAD had accepted both of these system attributes and they had been included in the baseline of the DCEG and will be used in the S-101 Portrayal, however following further work on the S-101 Portrayal Catalogue Caris requested that TSMAD reconsider the methodology used for calculating the surrounding depth.

The meeting approved the recommendation to change the name of ‘Minimum surrounding depth’ to ‘Surrounding depth’ and amend the logic for calculating the surrounding depth attribute to use the DRVAL1 of the deepest depth area that the feature is surrounded by or touches.

JW noted that guidance had been included in the DCEG (in the system attribute section) and this will not have an impact for encoders.

9.5A Safety Contours in S-100 Portrayal.

No paper submitted and no discussion.

10. S-101 Development Topics.

10.1A S-101 Status Update

JP noted that there are few outstanding items that need to be completed before TSMAD can release S-101 as an initial version for testing. She noted that the IHB had issued a contract to build the Portrayal Catalogue Builder. This work has gone from high risk (red) to medium risk (yellow).

KHOA is developing the next iteration of the S-100 Feature Catalogue Builder and this needed to be tested. The development of the Feature Catalogue Builder has also gone from high risk (red) to medium risk (yellow).

NOAA is funding the next iteration of the S-57 to S-101 convertor. This work remains at medium risk (yellow).

The meeting noted the S-101 Risk Register (presented at paper 10.1B) and the status of the various high levels tasks and agreed to hold another S-100/S-101 test bed strategy meeting before the next TSMAD meeting to coordinate test bed activities.

10.1B S-101 Risk Register

The meeting approved the risk register status and requested that a new item should be included for the test bed items.

10.1C S-101 Time Line

JP introduced the S-101 timeline schedule and noted that it had been revised to extend into the 2015 time line. She noted that good progress has been made in finalising the S-100 model. There is a need to look at the development of a viewer and the second iteration of the feature conversion application.

It is anticipated that S-101 will be available for implementation in 2017. This will need to take into account a migration plan for assisting data producers to convert their data and start producing S-101 data.

HP noted that at some time the IHO will have to inform the IMO when S-101 will be the official replacement of S-57 ENCs.

10.1D S-101 Product Specification January 2014.

JP reported that document 10.1D was the latest edition of the S-101 Product Specification draft dated December 2013 and it contained all changes from the TSMAD27 meeting. She requested all members to review the document and report any comments /corrections / extensions to her.

10.2A S-101 Value Added Roadmap Update.

JP reported on the work to expand the S-101 Value Added Roadmap, taking into account the comments that were expressed during the HSSC5 meeting.

She noted that a new clause needs to be added to take into account the need for IHO, IMO and IEC coordination. It was proposed that the Feature Catalogue and Portrayal Catalogue Builders will be completed in March 2014.

CIRM and IEC proposed that the timelines be revised to reflect delays in completing the draft S-101 Product Specification. JP noted that this had been reflected in the updated timeline. A revised expected date of April/May 2014 has been included to reflect the need for the baseline Feature and Portrayal Catalogues to be completed in order for S-101 to be at a state that can be tested.

CI proposed that if IMO will not regulate on the use of S-101, Flag States could require that vessels visiting their ports should use S-101 cells. The meeting agreed to keep the existing dates but to also include an additional time scale 0, +1, +2 etc ... as proposed by CIRM and IEC.

The meeting noted the report and endorsed the amended S-101 Value Added Roadmap. (*See actions items*).

10.2B S-101 Value Added Roadmap.

JP requested members to review the S-101 Value Added Roadmap (document 10.2B) and report any comment to her. See also discussion above.

10.3A S-101 DCEG Maintenance Requirements.

JP noted that at the TSMAD27 meeting, KHOA provided a presentation on an application that integrated the content of the S-57 UOC with other relevant standards documents such as S-58 and S-4 to assist with referencing information in these publications. As a result of this, TSMAD discussed whether a similar application could be used to maintain the S-101 DCEG document.

She noted that, as a result of its size, the DCEG has become unmanageable. The existing word document is too large to send via email and when S-101 becomes finalized and the DCEG officially becomes a part of the Product Specification, all changes will have to be carefully managed.

The meeting endorsed the concept of a web-based S-101 DCEG publication and approved the creation of an interface design document for approval at the next TSMAD meeting. TSMAD members are requested provide assistance with the development of a database or web-based version of the DCEG.

JW noted that he had received a guarantee from the current IHB President (about 3 years ago) that the IHB would be able to provide funding for this. TP noted that this would not have been a problem three years ago, but with current budget restrictions, this may no longer be possible. (*See action item*).

10.4A AIS Aid to Navigation modelling in S-101.

SM noted that paper 10.4A had been discussed at the DCEG meeting and agreement was obtained on the recommendations. It was proposed that there should be two features; one for physical AIS and one for virtual AIS feature. The physical one will have a supporting structure, but the virtual one will not.

The meeting noted the paper and agreed that option 1 was the best approach for modelling and encoding of physical and virtual AIS Aid to navigation features. (*See action item*).

The meeting agreed to the values to be used for the Status attribute for the Virtual AIS Aid to Navigation feature. Furthermore the proposed values to be used for the Status attribute to support the "Buoy Emergency Wreck Marking" feature were agreed. The meeting agreed that an additional note for the "Status" attribute for the "Buoy Emergency Wreck Marking" feature should be added.

It was agreed that the S-101 DCEG Sub-WG should amend the DCEG document accordingly.

10.5A Non-NEWOBJ Symbol for V-AIS Aids.

CH noted that the HSSC4 meeting had requested TSMAD to develop an Encoding Bulletin that describes how to encode virtual AIS Aids to Navigation using the New Object (NEWOBJ) feature". Symbology for virtual AIS AtoNs using existing S-52 symbols were defined to support the portrayal of the NEWOBJ implementation and the combined ENC Encoding Bulletin (EB54) and Chart Presentation Bulletin (S-52 CPB No. 10) were produced.

It was questioned whether there is a need to develop permanent symbols for NEWOBJ / AIS AtoN's noting that it is not going to be included in S-101.

HP reminded the meeting that the IMO stipulated some limitations on ECDIS screen resolution. JW suggested that DIPWG should develop the new symbols however HP noted that these symbols were developed by IEC and a few were slightly modified at MSC and they may be agreed at the next IMO MSC meeting. The meeting decided that DIPWG should propose an alternate "permanent" symbol to be used to portray virtual AtoNs, which could be prototyped in the S-100/S-101 test bed environment. Furthermore it was decided to change the colour to magenta – without the halo (circle) but with the "V-AIS" text. (*See action item*).

10.6A Lakes, Rivers, Canals encoding on a LNDARE

CM noted that because CANALS, LOKBSN and DOCARE are not part of the Skin of the Earth the UOC makes it compulsory to encode a Group 1 object (LNDARE or UNSARE) underneath these objects. He proposed that for S-101 this should be changed.

The meeting noted the paper and agreed that LOKBSN and DOCARE should be added to group 1 feature and LOKBSN and DOCARE should be included in the DCEG as Group 1 features. (*See action item*).

10.7A Management of Feature and Portrayal Catalogues in S-101

SM reported that each version of the S-101 Feature and Portrayal Catalogues will be tied to a version of the Product Specification. Changes to the Product Specification may result in changes to the Feature Catalogue and/or the Portrayal Catalogue and also to ENC data. The maintenance cycles for the S-100 base Standard and dependant Product Specifications will not be synchronized and a mechanism for maintaining a correlation between a Product Specification, its dependent Catalogues and the base Standard will be required.

After discussion about the three version control methods proposed, (i.e. multiple Catalogues, cumulative Catalogues, latest version Catalogues), it was decided that further work was required with a report back to the next TSMAD meeting.

10.8A DCEG Working Group Report

JW reported that the DCEG Sub-WG had met during the previous week. The most significant changes from the previous draft version of the document had to do with how additional information can be encoded as an attribute.

It was agreed that INFORM, TXTDSC and PICREP will be removed and will be replaced by an information type. The sub-WG has also included an "Information Area" geo feature. This is to get rid of the overuse of Caution Area. TM noted that with the revision of S-52 alerts and indicators there will be better control of alarms.

MP proposed that mariners would like 3 levels of restrictions; 1 for navigational restrictions (do not go here), 1 for activity restriction (no fishing) and 1 descriptive restriction (if you go here beware of ...).

A significant amount of work was done on modelling lights mainly so as to not have multiple lights for one light feature. The Sub-WG tried to eliminate conditional/mandatory conditions and to allow for simpler encoding. All around light remodeling was quite straight forward however the remodeling of sector light was far more complex. There was also a brief discussion on modelling problem features such as bridges and island groups.

HB provided a brief tutorial on UML modeling with particular focus on certain S-101 features. As a result of the discussion that followed, it was decided that aggregations should be removed from the list of feature "usetype" enumerations in S-101, and guidance should be included in S-100 concerning feature types, associated geometries and information types. (*See action items*).

10.9A S101_AuxiliaryFiles in S-101

RF reported that in response to an outstanding task, the DIPWG Chairman and IC-ENC had carried out a study on the use of TXTDSC and PICREP in S-57 and provided some recommendations for their use in S-101. He noted that there was no simple way to distribute and maintain all ancillary data using existing mechanisms because ENC cells were distinct collections of features within a geographic area at varying scales. The trade-off is between having duplication of files, or having a single central store with no duplication. The second option would be more complex to manage.

The proposal to not allow image (pictorial representation) files in the S-101 product specification was not agreed.

The meeting noted the duplication of current TXTDSC information and the small number of (possibly extraneous) text files. It was proposed that these could be reduced by more efficient encoding.

HP proposed that txt file content should be included in the information type. HB proposed that neither option is suitable and proposed that the current method should be retained as is.

The meeting agreed that neither option is ideal for S-101 and decided to keep the current method but advise encoders that txt file content should preferably be included in information types.

HP proposed a fourth option – to include the cumulative version. HB noted that the cumulative version will work fine as long as items are being added, but there will be a problem when items are removed. KI noted that in the cumulative catalogue – deleted items could be marked as deleted. EM noted that he was not in favor of the cumulative approach because it adds an additional level of complexity. (*See action item*). It was not possible to reach consensus on which method to use, and KI proposed that there should be both – both the “latest version” and the cumulative version available on the IHO website.

11. S-100

11.1A S-100 Part 9, "Portrayal" Clean-up

HA reported that, as part of the S-100 Portrayal work and the work undertaken on Part 9, there were a number of changes that may have an impact on portrayal. These were outlined in the PowerPoint presentation provided by HA.

11.1B S-100 Portrayal Catalogue Builder (PCB) Demo

HA presented the PCB and noted that the application will allow someone to be able to build a Portrayal Catalogue based on an existing Feature Catalogue. He noted that it is possible to build a new Catalogue, edit a Catalogue or use an existing Catalogue to build a new one. He proposed that there is need for a decision to be made on versioning based on the previous discussion that had taken place on this subject. Furthermore he recommended the application should be moved onto a single database when the work on the Feature Catalogue Builder is complete.

11.1C S-100 Part 9 Comment Form

CH introduced the S-100 Part 9 Portrayal comments included in document (TSMAD28/DIPWG6-11.1C) that had been provided and by CARIS concerning issues with the current version of the FCB. The comments which were mostly technical had been taken into consideration and accepted for S-100 Part 9.

11.2A United States S-100 Test Bed.

RG reported that the paper was intended to report on the US S-100 Testbed project which is being developed to assist IHO/TSMAD S-101 (and other S-10x geospatial data) Product Specification development. It is also intended to facilitate the US DOD transition to an S-100 environment for maritime product utilization. He reported that the simple viewer that is capable of displaying S-57, S-101 and AML data had been developed.

The meeting endorsed the continued development of the US S-100 test bed project and agreed that the US S-100 test bed project could benefit IHO S-100 development efforts. The meeting endorsed the focused technical discussions concerning the test bed development efforts for future S-100 Test Strategy workshops and also endorsed the inclusion of the US S-100 test bed project as part of the TSMAD test bed work item.

11.3A Use of SVG for S-100 Portrayal.

HA reported that a decision had been made to use SVG for symbols and noted that a paper that considered how to convert the .dai file to SVG had been produced. He reported that a decision had also been made to use CSS for assigning colour to SVG.

He had received some feedback and suggestions regarding the use of SVG and reported that some issues had been raised that may need further consideration. These include the use of different origins and pivot points by SVG and S-52 symbol definitions; different colour definitions; and different attributes and metadata.

He noted that 603 symbols were converted from the .dai files to SVG format which gives an initial set of point symbols for the S-101 testing phase. The SVG symbols are easy to examine and can be readily viewed by opening the symbols in a web browser or desktop app and he invited DIPWG members to review the symbols for correctness and omissions. (*See action items*).

11.3.B Colour Tables in S-100 Part 9 Portrayal Catalogue.

HA noted that the intent of the paper was to consider how to encode and deliver colour table information as part of S-100 Part 9 Portrayal Catalogue. Part 9 currently describes colour tables being encoded as SVG colour profiles, however he proposed that a simple XML colour table would suffice for this and would be a much simpler way of doing this. This had been agreed by the S-100 technical Sub-WG meeting in Hamburg during March 2014.

The meeting agreed that the existing S-52 colour tables should be converted into an XML format and included in the S-101 Portrayal Catalogue as documented, and to investigate the use of sRGB as opposed to CIE colour encoding.

11.4A Portrayal Model Extension for Coverage (Gridded) Data.

HA noted that S-100 Part 9 did not include portrayal coverage and the paper provided an initial proposal for consideration by the meeting. He provided a brief outline of the coverage model, and noted that portrayal for coverage allows a continuous coverage to be coloured based on coverage attribute values (e.g. a depth coverage could be coloured by depth range intervals). A Coverage feature can also be filled with annotations or symbols. He noted that the Coverage portrayal model and documentation has already been included in the new baseline S-100 Part 9 document and requested members to review the proposed model and documentation and sent any recommendations for improvements to the DIPWG chair.

11.5A S-100/S-101 Test Bed Update.

JP noted that all S-100n Product Specifications must go through every phase of the outlined test bed. The following systems are currently under development for the S-100 test bed: the S-100 Feature Catalogue Builder (being undertaken by KHOA); the Portrayal Catalogue Builder (completed); the S-57 to S-101 Convertor (the open source convertor which is available from ESRI) and the S-100 Simple Viewer (both KHOA and SPAWAR have developed a simple viewer).

An S-100 test bed strategy workshop is planned to be held in September in order to review the draft test cases that were completed under IHO contract. This was agreed by the meeting.

11.6A Associations, Aggregations, Compositions.

JP reported that the guidance in S-100 and the DCEG relating to the use of Associations, Aggregations and Compositions is not entirely clear. S-100 has definitions for Associations, Aggregations and Compositions in several places, and the DCEG has also identified a number of named compositions, aggregations and feature associations. Following further discussion, the meeting agreed that additional guidance needs to be included in S-100 Edition 2.0 concerning the use of aggregations, associations, and compositions. It was noted that there was no need to have the featureUseType = aggregation in S-100 as it was covered by roleType and would lead to confusion. (*See action item*).

11.7A S-100 Product Specification Identifiers.

SM noted that at HSSC5, the following action was assigned to prepare a detailed registry based procedure for the allocation of Product Specification identifiers and this paper was intended to complete this action. The meeting noted the proposal and agreed that a paper should be presented to the HSSC6 meeting for endorsement.

HB enquired what was meant by the identifier and noted that he would prefer another term as it could be confused with the dataset identifier. SM confirmed that it was intended for the Product Specification name and was not intended as a database identifier. The meeting agreed that the paper should be used for an HSSC proposal for a registry based procedure for the allocation of S-100 Product Specification identifiers (names). (*See action item*).

11.8A S-100 Edition 2.0.0.

BG noted that a new edition of S-100 was in preparation. An S-100 Sub-WG had met to evaluate and discuss a number of proposals that had been submitted for inclusion in the standard. Many of the new proposals had been submitted as a result of new requirements for S-100 based Product Specifications being developed by other Working Groups and also the inclusion of the S-100 Portrayal section. Other important items that were discussed included the addition of a new encoding format (GML), changes to the General Feature Model to accommodate code lists, improvements to the UML diagrams and extensions to the Registry model to accommodate some of the new constructs.

He noted that there is a need to make changes to the ISO8211 encoding. This is required in order to prohibit the use numeric codes. HB noted that S-57 also contains a 16 bit integer code that has not found its way into the Feature Catalogue. In order to fix this, he proposed that some changes to the 8211 encoding format be introduced. These will have to be made using 8211 constructs. The fields all have the same structure as existing ones and are not complex. The meeting agreed to the change to the 8211 format to support S-100 PS encapsulation.

11.9A S-100 Feature Catalogue Builder

BG stated that TSMAD had an action item to contract out the development of a Feature Catalogue Builder however KHOA had offered to undertake this task. SO introduced the progress made with the S-100 Feature Catalogue Builder as a result of discussion that took place at the HSSC meeting and at the last TSMAD meeting. He noted that the development was currently on its first iteration which is aimed at providing a Catalogue for S-100 testing.

He stated that as the Feature Catalogue Builder needs to make an xml file it was necessary to understand the structure of the S-100 Catalogue. This requires two processes, manual input and automatic generation. He provided a demonstration of the FCB application and proposed that the application needs to bind to the Registry database for building the FC elements.

HB thanked Korea for their progress and suggested that it would be helpful if the input fields could provide an indication of which are mandatory and which are optional.

The meeting noted the progress on the S-100 Feature Catalogue Builder and members were asked to provide recommendations as to what a draft guideline for using the S-100 Feature Catalogue Builder should contain.

12. General TSMAD Topics

12.1A S-64 Review.

BG reported that the new edition of S-64 was almost complete, but its completion was dependent on the completion of the revision of S-52. He noted that there was a need to coordinate the development of the new editions of S-52, S-64 and IEC 61174. He informed the meeting that the new edition of S-64 included datasets of the polar areas.

The IHB is to seek HSSC approval of the draft edition 3.0.0 by correspondence through HSSC Circular Letter before the end of October 2014 (in line with the publication of the new edition of IEC 61174). Furthermore the IHB will seek Member States approval of the draft edition 3.0.0 by IHO Circular Letter.

12.2A S-58 Wrap-up.

RF reported that HSSC5 had endorsed Edition 5.0.0 of S-58 subject to minor amendments which were approved by TSMAD27, and the document has been sent to Member States for adoption. He noted that following its circulation to MS, a number of editorial amendments had been identified and it is hoped to include these prior to the final publication of the document.

The meeting noted the paper and requested members to encourage their national representatives to vote to approve of the adoption of this new edition. The meeting did not approve the editorial corrections in Annex A for inclusion in edition 5.0.0 of S-58 prior to publication, and noted that they should be included in the next edition.

12.3A Problems Arising on Edges over Very Long Distances.

HB noted that there are some problems arising on edges that stretch over very long distances. There are three situations that where this occurs that need consideration;

- Can the entire surface of a sphere be defined by a simple polygon? (It was concluded that it is not possible to have one polygon covering the earth).
- What is the longest distance between two consecutive vertices in a polygon?
- What happens at the poles?

He concluded that if very large areas have to be encoded in a data product using a geographic CRS, the fact that such coordinates belong to a spheroidal coordinate system has to be taken into account. Attention should be paid to singularities at the poles and to connections between points that are longer than half of the circumference. He also proposed that encoders should always consider if there is really a need to encode very big areas at all.

In order to achieve unambiguous definitions of long edges and large areas he recommended that encoders should observe the following rules:

- The longitude difference between two vertices of an edge must be smaller than 180°.
- A pole should only be part of an edge if the segments are meridians.
- There should be no direct connections between North Pole and South Pole.
- In order to cover the entire surface of the earth use at least two area objects or abstain completely from direct coding.

The meeting endorsed the recommendations and agreed to investigate an appropriate document / section for including the recommendations above. *(See action item).*

12.4A What is Needed for Full Machine Readability?

HP noted that the phrase “no need for SW upgrade” means for manufacturers that there is either no need for a SW upgrade when the end user starts to use a new S-10X product layer; or there is no need for a SW upgrade when the end user keeps his system up-to-date with an S-10X product layer which has already been in use in his system. In practice this would require an end user to register new S-10X product layers in his ECDIS and this registration should then establish everything needed to provide the intended functionality in the ECDIS. He identified several items that would be needed to be registered, some identified in the paper could already be documented. He proposed that issues identified in the paper required further study and, if needed, appropriate drafting processes should be initiated.

The meeting noted the issues presented in this paper and agreed that there might be a need for extra editions when this concept is fully functional and agreed that a study to investigate how each of the issues needed for full machine readability could be addressed. *(See action item).*

12.5A Cyber security and Service Issues [Peiponen]

HP noted that TSMAD needs to be thinking about cyber security issues which will be needed for data security and this will have an impact on product integrity and authentication. He proposed that security should be considered from the outset of Product Specification development and not as an add-on function, as was the case with S-63. He noted that IHO needs to learn lessons from the history of S-57 and S-63 implementation, and proposed that security and authentication should not be just a voluntary add-on as is the case for S-63. There are several other issues such as including a stronger CRC checksum method that needs to be studied for implementation.

The meeting noted the issues relating to security and authentication, and agreed that there is a need to work with the DPSWG to investigate how security and authentication for S-10n data products and services can be addressed. *(See action item).*

12.6A S-102 Clarification of Metadata.

HA noted that Caris are implementing tools for the creation of S-102 products and have detected some issues with the PS while building the XML schema for S-102 metadata. He noted that they had also identified some issues with the implementation of the Bathymetry Attributed Grid (BAG) encoding specification. He stated that if issues were not resolved, the implementation of S-102 by different vendors may be inconsistent and incompatible. He therefore proposed that a technical Working Group should be formed to resolve these issues and noted that CARIS would be willing to host a meeting which should be tasked to;

- Revise S-102 so that the BAG is listed as a compatible encoding but not used interchangeably in the specification. This would require the production of a new edition of S-102.
- Provide guidance on how to instantiate the model. CARIS would be happy to share its findings in producing a schema to aid this process. He proposed that any guidance should adopt a consensus approach and this may result in changes to the S-102 logical model.
- Resolve the use of types expressed in the S-102 model that are not defined in S-100.

The meeting agreed the proposal to set up an S-102 meeting to resolve the issues in S-102. *(See action item).*

12.7A S58 Edition 5.1.0

RF noted that a number of requests for correction and clarification that go beyond editorial changes to the S-58 5.0.0 checks had been received, and proposed that a TSMAD Sub-WG should commence work on the next revision of S-58 (i.e. Edition 5.1.0).

The meeting reviewed the items listed in paper 12.7A, and agreed that the S-58 Sub-WG commence work on preparing a new edition (5.1.0) of the publication for consideration by the TSMAD29 & HSSC6 meetings.

12.8A Holes in Coverage

RF reported that IC-ENC had received a number of ENC's that contained "holes" in the centre of the data coverage where other larger scale ENC's are available. This was not ideal for the mariner, especially if he did not have the larger scale cell. He proposed that an option for resolving the problem would be to ensure that generalised information should be inserted within the holes to allow safe passage. SCAMIN would have to be applied consistently with the main data set and the generalised "filler" data.

He noted that the existing wording in S-57 Appendix B1, Annex A, Chapter 2.8.1 was not strong enough and proposed that the "should" statement should be upgraded to a "must" statement.

LP noted that Canada would not be able to support the change as it would require many changes to their ENCs.

The meeting agreed to the proposed change for the next new edition of the UOC bearing in mind that this would only apply to new ENCs and would not affect existing cells.

It was decided that a new EB should be produced, and it was agreed that it was not a "safety critical" bulletin so was not necessary to report it to the IHB for approval. *(See action items)*.

13. Any Other Business.

The report back from the Portrayal break-out session noted that it was agreed to use "Tiny SVG" profile as a starting point to create an S-100 SVG profile. As a first step a list of the elements that are being used for S-101 portrayal will be compiled. All the logic required for the portrayal of S-100 products will be included in the XSLT templates or as simple Portrayal Catalogue entries. No pre-processing of the input scheme will be required by the OEMs.

DIPWG will submit a proposal to TSMAD/DCEG regarding recommendations for structuring of restricted areas that will facilitate the portrayal of the various types of restricted areas. The recommendation will take into consideration a related paper previously submitted by JW. The following tasks were identified: Investigate possibility of using IHB resources to build True Type fonts to support display of soundings and depth contour labels (AP); Provide guidance to AP regarding which characters will need to be converted to True Type fonts (CH); and convert RGB values in the S-100nPortrayal Register to sRGB values (BG). *(See action items)*.

INF-1 Report on the MONALISA Project

MONALISA 2.0 project is a follow up from the MONALISA 1 project which ran from 2010 to 2013. The main focus of the project is to provide insight on how initial route exchange information can best be achieved. This will also consider how routes can be optimized taking into account inputs such as under keel clearance and traffic density.

The meeting noted the paper and agreed that the activities of the project should be monitored and where possible TSMAD input and guidance to the project should be provided.

EV proposed that this project would be relevant to the MSDI activities and noted that the MSDIWG would also be monitoring the work of the MONALISA activities.

KI noted that at the outset of the project there was not much involvement from the hydrographic community however with the involvement of EM, KI and HE this has been rectified.

INF 2 – Expansion of the Maritime Boundaries PS S-121

LP noted that Canada has been building a detailed Product Specification which is complementary to the S-121 Product Specification, and Canada proposed at the HSSC5 meeting that the existing PS should be expanded to include additional requirements. Canada have developed a series of comments on the S-121 PS and requested these are taken into consideration and feedback is provided. Furthermore LP stated that Canada would like to work with Geoscience Australia to ensure the new Specification meets the needs of these additional requirements.

The meeting noted this report provided by Canada and members agreed to and provide feedback to Canada and Australia on the comments in the paper.

14. Review of Meeting Actions.

The meeting reviewed the list of actions which were subsequently placed on the TSMAD28 / DIPWG5 document page in draft form.

15. Date and Venue of Next Meeting.

Noting the HSSC5 proposal to reorganize the structure of its working groups, it was decided not to set a date and venue for the next joint meeting until more information was available on the outcome of this task.

16. Close of Meeting.

BG and HC thanked the AHO (particularly Jeff Wootton) for the excellent venue and superb logistical support, all of which had ensured that the meeting was a great success and extremely productive.

List of Actions

No	Meeting	Minutes Ref	Action	For Action
1	TSMAD27	4.1.1	TSMAD to take into consideration the comments reported in paper HSSC5-INF2 (Appendix to Annex A), for inclusion in the next edition of the Use of the Object Catalogue (S-57, Appendix B.1, Annex A). It was decided to develop a paper on this for HSSC6	RF/JW
2	TSMAD27	4.1.1	TSMAD chair to include an additional item in the TSMAD work plan to review the S-100 Master Plan annually. Needs to be completed and will be reviewed annually at HSSC.	BG
3	TSMAD27	4.1.1	Provide a paper and recommendations on what S-58 checks should be included as part of S-101 – for TSMAD 29.	RF/JP
4	TSMAD27	4.5.2A	Remodel the concept for inshore and offshore (structures on the land and on the sea).	RF/JW
5	TSMAD27	4.5.2A	Amend the UOC for coastline references dock area.	JW
6	TSMAD27	4.8.1B	Revise paragraph 1 of the UOC section 6.3.2 to make it consistent with the proposed amendment to the UOC section 6.2.1 that are proposed in paper TSMAD27-4.8.1.	JW
7	TSMAD27	4.8.1B	Produce an Encoding Bulletin providing guidance on “areas to be avoided” as proposed in paper TSMAD27-4.8.1B.	JW
8	TSMAD28/DIPWG6	6.5A	Include HDF5 as an encoding format in S-100 (It is included in S-102 and may also be used by the SCWG)	BG
9	TSMAD28/DIPWG6	8.2B	Review and act upon the comments received for the review of the S-52, Ed 6.1 & PresLib Ed. 4.0 drafts, and when updated, endorse the drafts and submit to HSSC6 for consideration.	CH/TM
10	TSMAD28/DIPWG6	8.2B	Make sure that “must” is used for all mandatory statements in the S-52 Ed 6.1.0 draft document.	CH/TM
11	TSMAD28/DIPWG6	8.2B	Forward all changes to definitions, that have resulted from the work on S-52 Ed 6.1.1, to the HDWG for review and inclusion in S-32. CH	CH/TM
13	TSMAD28/DIPWG6	8.2B	Include a test in 6-64 for “text that can extend beyond a boundary”, and remove the reference in S-64	TM
15	TSMAD28/DIPWG6	8.2B	Develop an encoding bulleting to provide Guidance on how to encode a date tht includes a leap year sequence	JW
16	TSMAD28/DIPWG6	9.1A	Consolidate those sections of S-52 that should be included in S-101 (as a result of meeting discussions), and send them out to TSMAD/DIPWG members for formal review and comment.	JP
17	TSMAD28/DIPWG6	9.2A	Assist SPAWAR in specifying any portrayal elements specified in S-52 PL 4.0 (display category, priority, etc.) that could not be determined.	CH
18	TSMAD28/DIPWG6	9.2A	Provide guidance to SPAWAR regarding portrayal for hulks.	CH
19	TSMAD28/DIPWG6	9.2A	Provide DIPWG with “finalized” implementation for lights and other recently changed features and attributes.	JP
20	TSMAD28/DIPWG6	9.2A	CARIS to get back to CH concerning the level of effort required to fully convert all of the required S-52 CSPs into XSLT Templates.	HA
21	TSMAD28/DIPWG6	10.2A	Include the revised S-101 Value Added Roadmap on the IHO website.	IHB

22	TSMAD28/DIPWG6	10.2A	Update Figure 2 of the S-101 Value Added Roadmap document to illustrate how ECDIS will use S-57 and S-101 ENC data.	JP
23	TSMAD28/DIPWG6	10.3A	Investigate whether a Content Management System could be used to generate/manage the content of the DCEG and other associated documents. (JP)	JP
24	TSMAD28/DIPWG6	10.5A	Develop S-101 symbology for virtual AIS aids	DIPWG
25	TSMAD28/DIPWG6	10.6A	The DCEG is to ensure that LOKBSN and DOCARE are included as group 1 features.	JW
26	TSMAD28/DIPWG6	10.7A	Remove aggregations from the list of feature usetype enumerations list for S-100 and S-101.	BG/JP
27	TSMAD28/DIPWG6	11.6A	The S-100 sub WG to take into consideration the proposals in paper 11.6A for action in S-100. Include examples of the use of aggregation and associations.	S100subwg
28	TSMAD28/DIPWG6	11.7A	Develop and submit a proposal for a registry based procedure for the allocation of S-100 product specification identifiers for presentation to the HSSC6 meeting for endorsement.	SM
29	TSMAD28/DIPWG6	12.5A	Investigate (together with DPSWG) how to address cyber security issues for S-10n data products and services – with a view to providing guidance in S-100 for the use in dependent product specifications. (See associated TSMAD 26 Action)	DPSWG
30	TSMAD28/DIPWG6	Portrayal Breakout Session	DIPWG to submit a proposal to TSMAD-DCEG regarding recommendations for structuring of restricted areas that will facilitate the portrayal of the various types of restricted areas. The recommendation will take into consideration a related paper previously submitted by Jeff Wootten	DIPWG
31	TSMAD28/DIPWG6	Portrayal Breakout Session	Investigate possibility of using IHB resources to build True Type and or SVG fonts to support display of soundings and depth contour labels.	AP
32	TSMAD28/DIPWG6	Portrayal Breakout Session	Provide guidance to AP regarding which characters will need to be converted to True Type fonts	CH
33	TSMAD28/DIPWG6	Portrayal Breakout Session	Convert RGB values in the S-100nPortrayal Register to sRGB values.	HB/BG
34	TSMAD28/DIPWG6	Portrayal Breakout Session	Encoding Bulletin for and ammendment to the UOC relating to holes in data coverage	JW/RF
35	TSMAD28/DIPWG6	Portrayal Breakout Session	Coordinate the completion of S-64 based on the comments made during the meeting.	TM
36	TSMAD28/DIPWG6		Update the draft edition of S-58 Edition 5.0	RF
37	TSMAD28/DIPWG6	S-58 (paper 12.7A)	Consult with the IHB concerning the inclusion of the changes identified in 12.7A	BG
38	TSMAD28/DIPWG6	S-58 (paper 12.7A)	Formulate revised text in 12.7A and circulate to the WG	S-58subwg

List of Documents

Document No Prefix	Agenda Item	Document Title
TSMAD28/DIPWG6	01A	List of Documents
TSMAD28/DIPWG6	01B	Draft List of Participants
TSMAD28/DIPWG6	02A	Joint Agenda for TSMAD-28 and DIPWG-6 rev 15
Matters Arising from TSMAD27 (Monaco)		
TSMAD28/DIPWG6	03A	Minutes of TSMAD-27
TSMAD28/DIPWG6	03B	Status of Actions from TSMAD-27
Matters Arising from DIPWG5 (Silver Spring)		
TSMAD28/DIPWG6	04A	Minutes of DIPWG-5 (Silver Spring June 2013)
TSMAD28/DIPWG6	04B	Status of Actions from DIPWG-5
Matters Arising from HSSC5 (Shanghai)		
TSMAD28/DIPWG6	05A	HSSC Actions for TSMAD and DIPWG
Reports of Activities of Other Working Groups		
TSMAD28/DIPWG6	06.1A	SNPWG
TSMAD28/DIPWG6	06.2A	CSPCWG
TSMAD28/DIPWG6	06.3A	DQWG
TSMAD28/DIPWG6	06.4A	TWLWG
TSMAD28/DIPWG6	06.5A	SCWG
TSMAD28/DIPWG6	06.6A	MSDIWG
TSMAD28/DIPWG6	06.7A	DPSWG
Activities of Other Organizations		
TSMAD28/DIPWG6	07.1A	IALA
TSMAD28/DIPWG6	07.2A	ISO
TSMAD28/DIPWG6	07.3A	IEC
TSMAD28/DIPWG6	07.4A	WMO JCOMM ETSI
TSMAD28/DIPWG6	07.5A	WMO JCOMM ETMSS
TSMAD28/DIPWG6	07.6A	DGIWG

TSMAD28/DIPWG6	07.7A	OGP
TSMAD28/DIPWG6	07.8A	GMWG (Geospatial Maritime Working Group)
TSMAD28/DIPWG6	07.9A	DOALOS
Continuing Portrayal Topics		
TSMAD28/DIPWG6	08.1A	S-52 Ed 6.1 & PresLib Ed 4.0
TSMAD28/DIPWG6	08.2A	Review of S-52 Ed 6.1.0 and PresLib Ed 4.0.0
TSMAD28/DIPWG6	08.2B	S-52 and PresLib Review Comments
New Portrayal Topics & S-100/101 Portrayal		
TSMAD28/DIPWG6	09.1A	S-52 Content for S-101 Portrayal Survey Discussion
TSMAD28/DIPWG6	09.1B	S-52 content for S-101 Portrayal Survey Results
TSMAD28/DIPWG6	09.2A	Updated LUTs to use for Building S-101 PCs
TSMAD28/DIPWG6	09.2B	Updated_LUTs_S-101_Portrayal_Catalogue rev 1 (zip file)
TSMAD28/DIPWG6	09.3A	S-52 Conditional Sym Procedure (CSP) Migration to S-101
TSMAD28/DIPWG6	09.4A	Surrounding Depth of Wrecks, Rocks and Obstructions (Also included as paper DCEG2)
TSMAD28/DIPWG6	09.5A	Safety Contours in S-100 Portrayal
S-101 Development Topics		
TSMAD26/DIPWG6	10.1A	Status update
TSMAD26/DIPWG6	10.1B	S-101 Risk Register (February 2014)
TSMAD26/DIPWG6	10.1C	S-101 Timeline (rev 29012014)
TSMAD26/DIPWG6	10.1D	S-101 ENC Product Specification Final Initial Draft 20131213
TSMAD26/DIPWG6	10.2A	S-101 Value Added Roadmap - paper
TSMAD26/DIPWG6	10.2B	S-101 Value Added Roadmap document (updated 1312014)
TSMAD26/DIPWG6	10.3A	S-101 DCEG Maintenance Requirements
TSMAD26/DIPWG6	10.4A	AIS Aid to Navigation Modelling in S-101
TSMAD26/DIPWG6	10.5A	Non-NEWOBJ Symbol for V-AIS Aids
TSMAD26/DIPWG6	10.6A	Addition of new objects to the Skin of the Earth
TSMAD26/DIPWG6	10.7A	Management of Feature and Portrayal Catalogues in S-101
TSMAD26/DIPWG6	10.8A	DCEG Working Group Report (verbal)
TSMAD26/DIPWG6	10.9A	S101_AuxiliaryFiles in S-101

S-100		
TSMAD26/DIPWG6	11.1A	S-100 Part 9, "Portrayal" Clean-up
TSMAD26/DIPWG6	11.1B	S-100 Portrayal Catalogue Builder Demo
TSMAD26/DIPWG6	11.1C	S-100 Part 9 Comment Form
TSMAD26/DIPWG6	11.2A	United States S-100 Test Bed Development
TSMAD26/DIPWG6	11.2B	Industry Test Bed
TSMAD26/DIPWG6	11.3A	Use of SVG for S-100 Portrayal
TSMAD26/DIPWG6	11.3B	Colour Tables in S-100 Part 9 Portrayal Catalogue
TSMAD26/DIPWG6	11.4A	Portrayal Model Extension for Coverage (Gridded) Data
TSMAD26/DIPWG6	11.5A	S-100/S-101 Test Bed Update
TSMAD26/DIPWG6	11.6A	Associations, Aggregations, and Compositions
TSMAD26/DIPWG6	11.7A	S-100 Product Specification Identifiers
TSMAD26/DIPWG6	11.8A	S-100 Edition 2.0.0
TSMAD26/DIPWG6	11.9A	Feature Catalogue Builder
TSMAD26/DIPWG6	12.1A	S-64 Review
TSMAD26/DIPWG6	12.2A	S-58 Wrap-up See supporting documents; S-58 Test Datasets Report, ENC Test Datasets for S-58 V5.0 Mar 2014_(zip file)
TSMAD26/DIPWG6	12.3A	Problems arising on edges over very long distances
TSMAD26/DIPWG6	12.4A	What is needed for full machine readability
TSMAD26/DIPWG6	12.5A	Cyber security and Service issues
TSMAD26/DIPWG6	12.6A	S-102 Clarification of Metadata
TSMAD26/DIPWG6	12.7A	Proposed new Edition 5.1.0 of S-58 rev 3
TSMAD26/DIPWG6	12.8A	Holes in Data Coverage
TSMAD26/DIPWG6	INF1	The MONALISA Project
TSMAD26/DIPWG6	INF2	Extension on the Maritime Boundaries product specification S-121

Agenda

Document Number Prefix ¹	Agenda Item	Agenda Item / Document Title
1. Opening and Administrative Arrangements		[Greenslade / Harmon]
TSMAD28/DIPWG6	01A	List of Documents
TSMAD28/DIPWG6	01B	List of Participants
2. Approval of Joint Agenda		[Greenslade / Harmon]
TSMAD28/DIPWG6	02A	Joint Agenda for TSMAD-28 and DIPWG-6
3. Matters Arising from TSMAD-27 (Monaco)		[Greenslade]
TSMAD28/DIPWG6	03A	Minutes of TSMAD-27 (Monaco) December 2013
TSMAD28/DIPWG6	03B	Status of Actions from TSMAD-27
4. Matters Arising from DIPWG-4 (Monaco)		[Harmon]
TSMAD28/DIPWG6	04A	Minutes of DIPWG5 (Silver Spring) June 2013
TSMAD28/DIPWG6	04B	Status of Actions from DIPWG-5
5. Matters Arising from HSSC-4 (Taunton)		[Greenslade / Harmon]
TSMAD28/DIPWG6	05A	HSSC Actions for TSMAD and DIPWG
6. Reports of Activities of Other Working Groups		[Harmon]
TSMAD28/DIPWG6	06.1A	SNPWG [Mong]
TSMAD28/DIPWG6	06.2A	CSPCWG [Wootton]
TSMAD28/DIPWG6	06.3A	DQWG [Pharoah]
TSMAD28/DIPWG6	06.4A	TWLWG [Pharoah]
TSMAD28/DIPWG6	06.5A	SCWG [Pharoah]
TSMAD28/DIPWG6	06.6A	MSDIWG [Pharoah]
TSMAD28/DIPWG6	06.7A	DPSWG [Pharoah]
7. Activities of Other Organizations		[Greenslade]
TSMAD28/DIPWG6	07.1A	IALA []
TSMAD28/DIPWG6	07.2A	ISO [Pharoah]
TSMAD28/DIPWG6	07.3A	IEC [Peiponen]
TSMAD28/DIPWG6	07.4A	WMO JCOMM ETMSS [Powell]
TSMAD28/DIPWG6	07.5A	DGIWG []
TSMAD28/DIPWG6	07.6A	OGP []
TSMAD28/DIPWG6	07.7A	GMWG (Geospatial Maritime Working Group) []
TSMAD28/DIPWG6	07.8A	DOALOS [McGregor]
8. S-52 Portrayal Topics		[Harmon]

¹ Items that do not show the "TSMAD28/DIPWG6" document prefix do not have a document associated with the agenda topic

TSMAD28/DIPWG6	08.1A	S-52 Ed 6.0 and Presentation Library Ed 4.0	[Harmon/Mellor]
TSMAD28/DIPWG6	08.2A	Review of S-52 Ed 6.0 and PresLib Ed 4.0	[Harmon/Mellor]
TSMAD28/DIPWG6	08.2B	S-52 and PresLib Review Comments	[Harmon]
9. S-101 Portrayal			[Harmon]
TSMAD28/DIPWG6	09.1A	S-52 Content for S-101 Portrayal Survey Discussion	[Powell]
TSMAD28/DIPWG6	09.1B	S-52 Content for S-101 Portrayal Survey Results	[Powell]
TSMAD28/DIPWG6	09.2A	Updated LUTs to use for building S-101 PCs	[Grant]
TSMAD28/DIPWG6	09.2B	Updated LUTs_S-101 Portrayal Catalogue ZIP	[Grant]
TSMAD28/DIPWG6	09.4A	Surrounding Depth of Wrecks, Rocks and Obstructions	[Astle]
10. S-101 Development Topics			
TSMAD28/DIPWG6	10.1A	S-101 Status Update	[Powell]
TSMAD28/DIPWG6	10.1B	S-101 Risk Register	[Powell]
TSMAD28/DIPWG6	10.1C	S-101 Time Line	[Powell]
TSMAD28/DIPWG6	10.1D	S-101 Product Specification January 2014	[Powell]
TSMAD28/DIPWG6	10.2A	S-101 Value Added Roadmap Update	[Powell]
TSMAD28/DIPWG6	10.2B	S-101 Value Added Roadmap	[Powell]
TSMAD28/DIPWG6	10.3A	S-101 DCEG Maintenance Requirements	[Powell/Wootton]
TSMAD28/DIPWG6	10.4A	AIS Aid to Navigation modelling in S-101	[Marks]
TSMAD28/DIPWG6	10.5A	Non-NEWOBJ Symbol for V-AIS Aids	[Harmon]
TSMAD28/DIPWG6	10.6A	Lakes, Rivers, Canals encoding on a LNDARE	[Mouden]
TSMAD28/DIPWG6	10.7A	Management of Feature and Portrayal Catalogues in S-101	[Marks]
TSMAD28/DIPWG6	10.8A	DCEG subworking group report (verbal)	[Wootton/Powell]
TSMAD28/DIPWG6	10.9A	Auxiliary Files in S-101	[Fowle]
11. S-100			
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TSMAD28/DIPWG6	11.1B	S-100 Portrayal Catalogue Builder Demo	[Astle]
TSMAD28/DIPWG6	11.1C	S-100 Part 9 Comment Form	[Harmon/Astle]
TSMAD28/DIPWG6	11.2A	United States S-100 Test Bed	[Greer]
TSMAD28/DIPWG6	11.2B	Industry Sponsored S-100/S-101 Test Bed	[Blevins/vice Powell]
TSMAD28/DIPWG6	11.3A	Use of SVG for S-100 Portrayal	[Astle]
TSMAD28/DIPWG6	11.3.B	Colour Tables in S-100 Part 9 Portrayal Catalogue	[Astle]
TSMAD28/DIPWG6	11.4A	Portrayal Model Extension for Coverage (Gridded) Data	[Astle]
TSMAD28/DIPWG6	11.5A	S-100/S-101 Test Bed Update	[Powell]
TSMAD28/DIPWG6	11.6A	Associations, Aggregations, Compositions	[Powell]
TSMAD28/DIPWG6	11.7A	S-100 Product Specification Identifiers	[Marks]
TSMAD28/DIPWG6	11.8A	S-100 Edition 2.0.0	[Greenslade]
TSMAD28/DIPWG6	11.9A	S-100 Feature Catalogue Builder	[Oh]
11. General TSMAD Topics			

TSMAD28/DIPWG6	12.1A	S-64 Review	[Pharoah]
TSMAD28/DIPWG6	12.2A	S-58 Wrap-up	[Fowle]
TSMAD28/DIPWG6	12.3A	Problems arising on edges over very long distances	[Bothien]
TSMAD28/DIPWG6	12.4A	What is Needed for Full Machine Readability	[Peiponen]
TSMAD28/DIPWG6	12.5A	Cyber security and Service Issues	[Peiponen]
TSMAD28/DIPWG6	12.6A	S-102 Clarification of Metadata	[Astle]
TSMAD28/DIPWG6	12.7A	S-58 Edition 5.1.0	[Fowle]
TSMAD28/DIPWG6	12.8A	Holes in Data coverage	[Fowle]
TSMAD28/DIPWG6	INF1	MONALISA Project	[Mong]
12. Any Other Business			[Greenslade / Harmon]
13. Review of Meeting Actions			[Greenslade / Harmon]
14. Date and Venue of Next Meeting			[Greenslade / Harmon]
15. Close of Meeting			[Greenslade / Harmon]

Annex D

List of Participants

MS	Organization	Family Name	Given Name	Email	Initial
Australia	Australian Hydrographic Office	WOOTTON	Jeff	jeff.wootton@defence.gov.au	JW
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