18th Transfer Standard Maintenance and Application Development Working Group (TSMAD)
Minutes.

4th to 8th May 2008 (Ottawa, Canada)

Chairman: Barrie Greenslade (UKHO)
Vice Chairman: Don Vachon (CHS)
Secretary: Tony Pharaoh (IHB)

Annexes:

Annex A – List of Documents
Annex B – Agenda
Annex C – List of Participants
Annex D – List of Action Items.
Annex E – Revised Terms of Reference

1. Opening and Administrative Arrangements

Dr. Savithri NARAYANAN welcomed members to the combined TSMAD 18 and DIPWG1 meeting and to Ottawa and wished the meeting good progress. Dion Gaulton provided brief overview of the administrative arrangements for the duration of the meeting.

1.1 Introduction and Welcome.

The Chairman Barrie Greenslade welcomed members to the meeting and thanked the Canadian delegation, for the time, effort and financial support spent arranging the meeting. He also noted that as this was a combined TSMAD/DIPWG the incoming chairman Colby Harman would chair DIPWG items. He thanked the outgoing DIPWG Chairman Mathias Jonas for the excellent contribution that he had made during his tenure.

Apologies were received from Michael Bergman(Jeppesen Marine), Olaf Wentzel (SevenCs), Holger Bothien (SevenCs), Hannu Peiponen (Furuno Finland) who were not able to attend the meeting.

2. Approval of Agenda.

The agenda (TSMAD18/DIPWG1-02A) was approved with the following additions and alterations;

Mr. Robert Sandev (UN) noted that his organization were interested using S-100 for developing a maritime boundaries product specification for their use. He requested to provide a presentation on their activities and requirement. Mathias Jonas (Germany) noted that a late paper had been submitted by the BSH. It was decided to include it under item 13 “foul ground.”

It was decided to take item 14 together with item 9.

3. Chairman, Vice-chairman and secretary of DIPWG

See DIPWG 1 Minutes.

4. Matters arising from the 17th TSMAD Meeting

(*Documents TSMAD18-04A and TSMAD18-04B)*

The following action items from the TSMAD 16 (carried over) and TSMAD 17 meetings were reviewed:

16/5.1 TSMAD members are to review the Baltic Sea ENC Consistency Study (when it is available). Ongoing – see TSMAD 18 action item 2 at Annex D.

16/5.1 Canada to provide paper on their implementation/application of SCAMIN to IHB for distribution. Complete and presented at CHRIS20.

16/6.1 IHB to check if Mr. Jin can be tasked to check for missing definitions, camel case tags and other references. This item was complete by Tom Mellor (TM - UKHO). A spreadsheet containing the definitions was placed on the WIKI. No comments were received and the camel case identifiers and definitions were accepted.

Action: CHRIS action 16/6.1 concerning missing definitions in the FCD. TM to include these in FCD.

17/4 Make a printable (Excel spreadsheet) version of the hydro register available (on the WIKI) for checking purposes. Completed.

16/7.1 Prepare a paper based on the concept of a "small scale usage band" for the next CHRIS meeting. Completed.

16/7.4 SCAMIN / SCAMAX on feature to point and surface geometry. Holger Bothien (SevenCs) to include this as a proposed change for S-100, and to provide a paper for the TSMAD17 meeting. Completed.

16/8.3 Jeff Wootton (Australia) to reword relevant encoding bulletins and insert links to examples of bad practices. IHB to put on the web site. Ongoing

16/8.5 Jeff Wootton (Australia) to prepare Encoding Bulletin concerning the use of FOID and the implications of the January 2009 date for DEPARE lines. Completed.

16/8.6 Encoding bulletin to be produced to provide advice on issuing large updates that change the extent of coverage objects. Completed

17/5.1 The TSMAD Chairman is to report to CHRIS 20 that TSMAD recommends that this work should continue. Furthermore the Chairman is to discuss the creation of an MIO register during CHRIS 20 meeting, and identify who would be the control body for such a register. Completed.

17/6.1 CATZOC - TSMAD Chairman to present this issue to the next DQWG meeting for further study. Completed.

17/7.1 TSMAD Chairman to convey the TSMAD discussion concerning the implementation of T&P notices to the CHRIS 20 meeting. Completed.

17/9 Julia Powelll (US) to include text in the S-101 introduction page informing members to press "Post" (not "Skip") after they post a comment so that notification of the comment is sent to all members.
Julia Powelll. Ongoing

17/9.1 Julia Powelll to set up a WIKI page. TSMAD members to propose candidate questions on this WIKI page. JP to collate these into a questionnaire and send to training institutions. Ongoing.

17/9.2 Australia (Jeff Wootton - JW) to identify what rules in S-4 (previously known as M-4)should be included in S-101. (These may possibly be included in a separate document). JW reported that this item is ongoing.

5. Action items for TSMAD arising from the CHRIS 20 Meeting

CHRIS Action 20/6 - Dynamic Tides in ECDIS *(Doc: TSMAD18-05.1)*

The TSMAD Chairman noted that one of the conclusions and recommendations of the S-101 ECDIS stakeholders workshop that took place at the IHB in March 2008, was that "dynamic tides should be included in ECDIS. This prompted a meeting at the IHB with Dan Pillich, Barrie Greenslade (UKHO), Steve Shipmen (IHB) and Tony Pharaoh (IHB -TP).

TP reported that the group initially discussed whether it would be feasible for HOs to make tidal constituents available so that ECDIS could carry out their own predictions. Although many systems are capable of this it was noted that the results would not be official data and hence should not be used for navigation.

To ensure that tidal predictions are accepted as an equivalent of the printed tide tables, it would be necessary for HOs to supply the full sets of constituents, for e.g. objects T_HMON and TS_PRH, AND it would also have to make its prediction algorithms/software available. It was concluded that this was not feasible.

It was proposed that the only way that this could be achieved would be for;

1. HOs to provide predicted tidal data in a digital exchange format that could easily be transferred (e.g. XML);
2. HOs would be required to provide "tide aware" ENCs containing small interval depth areas for those cell where tide is navigationally significant (e.g. port areas)

A short paper outlining the tidal requirement was submitted to the Tides and Water Level WG (TWLWG) (April 09) by Steve Shipman (IHB). It was noted that the TWLWG agreed to set up a Task Group, led by Stephen Gill (US), to prepare the "tidal" input on this matter. Delegates from Australia, Canada, UK, IHB and Dan Pillich agreed to participate in this work.

Konstantine Ivanov (Transas - KI) noted that he thought that using depth areas was not the best approach, as tidal regimes could change with geographical extent. This could not be reflected within a depth area.

Tom Mellor (UKHO - TM) noted that they had worked on the production of a specification for transferring tidal constituents and this could be extended to also include predicted data. Additional metadata would need to be added after which it could be progressed to an S-100 Product Specification.

Jean Luc Daniel (SHOM) also noted that depth area intervals should also take into account a requirement to make provision for a safety buffer.

Don Vachon (DV) noted that Canada is working on providing gridded data and tidal constituent for use within ECDIS. These datasets will be loaded as additional layers to be used in conjunction with S-57 data.

Action: DV to send digital copy of the Canadian tidal / gridded proposal to TP. TM to create a new tidal section on the WIKI and include this paper. BG to present the existing tidal specification to HSSC and request that this be added to the TSMAD / TWLWG work program.

CHRIS Action 20/12 – Encoding Bulletin on S-57 Temporal Attribution. Ongoing to be completed during the meeting.

CHRIS Action 20/13 - S-57 Temporal Attribution (Supplement # 2) *(Doc: TSMAD18-05.3)*

The TSMAD Chairman outlined the problem with certain feature classes being displayed after their base features had been removed as a result of temporal attribution. Some alternative

text had been proposed but needed to get approval. He requested meeting members to review the new test and report any inconsistencies.

CHRIS Action 20/18 – Review of S-65 (Doc: TSMAD18-05.4)

The TSMAD Chairman noted that the recommendations of the BSHC study on ENC consistency and CHS report needed to be reviewed and included in the Annex on ENC consistency in S-65.

***Action: Richard Fowle to update S-65* ENC Production Guidance**

CHRIS Action 20/20 – Encoding Bulletin on Linear Depth Areas (to be taken under agenda item 10)

The Chairman reported that an encoding bulletin on linear depth areas had been included however many ENC cells still contained these features. It was agreed that TSMAD needs to encourage HOs to get rid of these features.

CHRIS Action 20/24 – CATZOC Definitions (to be taken under agenda item 5.3 above)

Definitions are included in the DQWG report to CHRIS 20. Action is complete.

CHRIS Action 20/29 – GII content and management.
It was proposed to take this under agenda item 11.

CHRIS Action 20/31 – TSMAD TOR to include S-100 outreach *(Doc: TSMAD18-05.8)*
The proposed TORs were agreed with some minor proposed changes. See agenda item 5.8

5.8 TSMAD Terms of Reference (TOR) to include S-100 outreach.

Barrie Greenslade noted that a few minor changes had been proposed to the draft TOR. The revised draft TOR (included at Annex E), were accepted by the meeting.

6. Matters arising from minutes of 18th CSMWG

See DIPWG 1 Minutes.

7. Reports by other working groups

7.1 S-102 Bathymetric Product Specification (TSMAD18-07.1)

Rodney Ladner (US -RL) reported on the development of the product specification for hydrographic (bathymetric) data. A draft version had been completed and placed on the WIKI for comment. No comments were received and the TSMAD Chairman requested members to review this document and provide feedback to RL. He also encouraged members to provide assistance with this work item.

Action: TSMAD members are to distribute the draft document within their offices in order to get feedback, and to request relevant hydrographic experts to contribute to this work. All feedback to be sent to Wade Landers or submitted to the wiki.

7.2 MEPWG (TSMAD18-07.2)

Julia Powell (US) reported that some items were waiting for the completion of the Hydro register. It was noted that some MEP features, attributes and enumerates may be part of the Hydro register, but the TSMAD Chairman noted that it had become evident that some S-100 features, attributes and enumerates should be in the domain of the Nautical Publications WG and should be maintained by that Working Group in the Nautical Publications register. TM noted that TSMAD needs to provide assistance and direction with the drafting of this Product

Specification. It was agreed that there was a need for better coordination with this work item and with other groups developing S-100 Product Specifications.

7.3 Report on CSPCWG Activities (TSMAD18-07.3)

Jeff Wootton (Australia) reported that there had been one CSPCWG meeting (Sydney, Australia – 18-21 November 2008) since the TSMAD17 meeting. The CSPCWG was carrying out an ongoing review of S-4 and a Sub-Working Group has continued to address consistency issues between the three official language versions of INT1. Both these activities are being carried out by correspondence. He highlighted the following issues of interest to TSMAD and DIPWG;

- Fouls and Foul Ground - several discussions concerning obstructions, fouls and foul ground had taken place during S-101 development work.
- CSPCWG have been monitoring discussions by TSMAD and DIPWG concerning the production of a combined document showing INT1/S-52 symbols. CSPCWG members have been asked to report to their Chairman any substantive discussion or progress on the development of such a document.
- CSPCWG has approved new symbology for the entrance to a pipeline tunnel.
- CSPCWG has agreed that a review of the specification for the depiction of bridges, bridge supports and detail under bridges is required. This may have implications for the S-101 Feature Catalogue**.**
- A new generic symbol has been approved for the representation of offshore renewable energy installations. This may have implications for S-101 and the ENC EB Sub-WG.
- A new S-4 section on Chart Maintenance is in development. This includes a reference to ENC updating and may require some input from TSMAD. A number of revisions (listed in the CSPCWG report) were agreed.
- The next meeting (CSPCWG6) is to be held at the IHB from 01-03 December 2009.

Mathias Jonas recommended that the CSPCWG should also consult with DIPWG when developing new symbols (such as the new generic symbol for renewable energy).

7.4 Report on ENC Updating Working Group (EUWG) Activities (TSMAD18-7.4A)

Jean-luc Deniel (France - JlD) reported this was a new HSSC working group formed the CHRIS 20 meeting to develop guidance on standardized processes for the delivery and implementation of updates to ENCs.

The working group works mostly by correspondence and has been tasked to develop and propose a method to overcome shortcomings in the updating mechanisms for T&P notices in ENCs, and to review and revise and update S-52 Appendix 1.

The working group has carried out a study concerning the use of P&T notices and will define a set of best practices based on feedback received. This will be included in a guidance document which is due to be circulated in May to EUWG members for consideration.

It was noted that some other topics that may require changes to current standards (e.g. requirement for miscellaneous and general notices to mariners and additional attributes for updating), need to be studied.

Michel Huet (IHB) enquired about the status of the S-52 Appendix 1. JlD responded that this document mostly deals with the mechanics of updating and not the encoding. It was not an immediate priority as it did not influence T & P notices. Mathias Jonas (Germany) noted that Appendix 1 has not been edited since 1997, and thought that it should possibly be taken over by the EUWG.

Action: It was agreed that a paper needs to be produced for HSSC outlining the issues and recommending where the document should be moved. (Richard Coombes).

JLD also provided a brief presentation on the study being carried out within SHOM to determine the length of the worlds coastline. He noted that this was being done for the European Union.

7.5 Report on DQWG (No paper)

The TSMAD Chairman noted that the DQWG are working on a new definition for data quality. This will not only look at quality of source data but will also put it within the context of the vessel using the information (i.e. will take into account the vessels parameters). The Chairman note that he had advised the group to use the existing CATZOC rather that inventing a new feature class for this purpose.

7.6 Report on SNPWG (No Paper)

It was reported that much of the data modeling work for nautical publications has been completed. The working group focused on three development tasks which included; portrayal of nautical publications information, producing a product specification for pilot information and a test data set. Presentations demonstrating how nautical publications information can be portrayed using 3 dimensional visualization applications and ECDIS training were provided during the SNPWG meeting.

The next SNPWG meeting is scheduled to take place at the IHB, Monaco between the 7th and 11th of September 2009.

8. S-100 – Final acceptance - post Technical Writer editing task. *(TSMAD18-08)*

The TSMAD Chairman noted that a contract to carry out a technical review of S-100 and to amalgamate all component documents into a single document had been awarded. The intent of the review was to harmonize the language and structure and format of the component documents and not to change any of the technical content. The document will have one main introduction section with each component section having a separate scope. The review work has been completed however the amalgamation process still needs to be finished. He noted that the document will be distributed via IHO Circular Letter after a further round of discussion at HSSC1 - (some time in 2010). It had not been possible to include the section on portrayal due to the change in direction and lack of progress of ISO 19117 development work. It was noted that a decision needs to be made on this soon and the Chairman needs to establish what the status of 19117 is during the next TC211 meeting (May 2009).

Action: Amalgamated document to be circulated via TSMAD letter as soon as the review is completed. Chairman to evaluate the status of 19117 at Molde meeting and decide whether to include a profile of ISO/TC211 19117. If yes – include and distribute via another TSMAD letter. S-100 to be submitted to HSSC1 for final approval after which it should be sent out to MS via CL for final approval. (BG)

9. DIPWG - Report of S-100 activities

See DIPWG 1 Minutes.

10. Encoding Bulletins

Jeff Wootton (Australia - JW) reported that 5 “Encoding Bulletins” (EBs) (numbers 23 to 27) and 6 “Frequently asked Questions” (FAQs) (numbers 22 to 27) relating to the ENC Product Specification and Use of the Object Catalogue had been produced since the last meeting and have been included on the web site. These relate to;

- Seasonal objects and the issuing of updates in advance
- Traffic separation schemes
- Sector lights
- Soundings

- Depth areas

A further 5 EBs are in draft form. These relate to spatial objects, information objects, strip lights, the file size for updates and features not being displayed in ECDIS. These EBs and related FAQs were to be discussed in a break-away meeting of the Encoding Bulletin Sub-Working Group during the week, with the intention of publishing these at the conclusion of the meeting. This meeting was held on the Wednesday evening, with agreement reached on all EBs and FAQs discussed with the exception of the EB relating on the duplication of FOIDs in an ENC cell, which required further investigation.

Action: JW to forward the EBs and FAQs on new attribute values in S-57 edition 3.1; Objects permitted for Use in ENC; Strip Lights and Update File Sizes to the IHB for publication on the IHO web site.

Action: JW to co-ordinate further discussion on the EB/FAQ relating to duplicate FOIDs with the intention to publish as soon as possible.

No consensus could be reached through correspondence on the following draft encoding bulletins;

- Wrecks - to bring the encoding of wrecks in line with the advice provided in S-4 and to reduce the occurrence of wrecks being unnecessarily symbolized as dangerous. U.S. noted that they were happy with the revised wording for this bulletin, therefore it was agreed that this EB can now be published.

Action: JW to forward the EB on the encoding of wrecks to the IHB for publication on the IHO web site.

- Depiction of minimal bathymetry areas – it was noted that the example shown in TSMAD18-10.1 reflected conformant encoding practice but this did not improve the users experience. It was concluded that this issue needed further discussion – noting that possible solutions may be to encourage users to purchase larger scale cells to obviate this problem or for data producers to change their encoding practice (to include additional data within smaller scale cells). It was agreed that this issue needs further study and must be rectified in S-101.

Concerning the EB for the UOC Clause 5.8.3 (Bathymetry in areas of minimal depiction of detail on paper charts), JW noted that some good comments had been received, but it will be difficult to find a solution as long as ENCs were based on paper charts. Primar and IC-ENC members noted that this was confusing to the mariner and HOs should include all the data in the minimal depiction areas. It was agreed that this was difficult issue to resolve and no consensus view could be reached. Don Vachon (Canada) noted that populating these minimal depiction areas with data would be a very big task and would have a big impact on data producers.

A possible solution may be for the ECDIS to provide a warning notifying the mariner that he/she should zoom in when a minimal depiction area is loaded for display. It was decided that a FAQ explaining the ramifications of minimal depiction areas in ECDIS should be developed, but that no EB was required at this stage.

Action: JW to develop a FAQ explaining the ramifications of minimal depiction areas in ECDIS.

Encoding Bulletin for Internationally Recommended Transit Corridors. The Chairmen noted that they are not presently putting these on paper charts and recommended to delay the production of an EB for these until there is a strong requirement for one. This was agreed.

11. TSMAD - S-100 GII Content and Management

The TSMAD Chairman noted that he had been approached by the Marine Spatial Data Information Working Group (MSDIWG) concerning a requirement for new feature classes and attributes required by this group. He noted that many hydro feature types which are classified by "category off" may have to be created as new feature classes e.g. shoreline construction – category of jetty, pier etc… This is to be monitored by the Chairman.

11.1 OEF register

The University of New Hampshire is no longer in a position to host the OEF register of private misc features and attributes. The TSMAD Chairman explained that most of these are an artifact of old S-57 Edition 2 features and would not be included in the IHO registry. The University of New Hampshire (Lee Alexander) have provided all the features and attributes (including the lists of private user codes) to the Chairman.

11.2 Hydro register content

The TSMAD Chairman informed the meeting that the TSMADWG members had been requested to confirm that items proposed in the "Deferred Actions List" were still relevant. France had provided a copy of the document confirming the actions submitted by SHOM. The Chairman noted that many of the proposals will need to be included in the registry and a few (e.g. the marine boundaries proposal from Chris Roberts (Australia)) would need to be included into the S-101 Product Specification. Jeff Wootton (Australia) reminded the meeting that this was discussed at the Monaco TSMAD 15 meeting, and there was an action for the Chairman to ask TSMAD members to also review the extension list. The Chairman noted that this was done for the Extensions list but not the Deferred Action list.

Action: Chairman to send out a TSMAD letter asking TSMADWG to confirm their deferred actions. Tony Pharaoh (IHB) to package up all the TSMAD papers for all the past meetings and send to the Chairman.

Tidal requirements. Tom Mellor (UK) enquired whether the tidal constituent (300) should be included in a separate tidal register or in the Hydro register. (These are not the ones already listed in the Hydro register). It was agreed that this should be discussed with the TWLWG.

Action: Chairman to enquire whether the TWLWG have a requirement to set up a register for tidal purposes or whether they want to include their requirement within the hydro register. They should be made aware of the full ramifications of setting up and maintaining a register. (BG)

11.2C Proposal for Feature classes - Paper from Jeppesen.

In light of TSMAD Letter 1, 2009, Jeppesen has reviewed its encoding guide and particularly looked for features where INFORM or CTNARE had to be used. Jeppesen proposes that TSMAD review these items listed in Table A of their paper and consider them as the work with the Hydro register moves forward. It was agreed that these needed further consideration by both the CSPCWG and TSMAD.

Actions: BG to send this to the paper TSMAD18-11.2C (from Jeppesen) to the CSPCWG for review and comment. Based on their response, it should be decided which classes / attributes to include in the register. JP to contact EM to review the proposals and then to include them with the NOAA proposals.

11.3 GII management (including outreach)

S-100 Outreach: It was recommended to develop a facility (website) where potential users of the standard could obtain all relevant S-100 documents, and could ask questions and get additional information. The TSMAD Chairman noted that this web site should be for the GII work.

Status of the IHO Registry: A new version of the IHO registry containing several new sections and functions (e.g. agency codes) has been developed and will soon be available.

11.3A Outreach.

Julia Powell (JP - US) reported that it would be possible to include some questions concerning ECDIS presentation with the general questionnaire sent out by NOAA. Over 8000 responses had been received to date for the previous questionnaire. Mathias Jonas noted that it would be very important that the questionnaire goes to the correct users. He also noted that it would be useful if ECDIS systems could log the frequency that a mariner uses different interface functions.

Action JP to set up an outreach sub working group (Richard Fowle, Tom M, Barrie Greenslade JP) to compile the questionnaire and distribute it.

12. S-58 New Edition

Guy Uguen reported that the new edition of S-58 is ready for publishing with the exception of one outstanding issue that needs to be resolved during the meeting. He requested that TSMAD should make a decision about whether to use "crosses" or "intersects" for checks 77, 78 and 79. A breakout group was set up to resolve this, and reported that it been decided to use "***Crosses or intersects"*** for these checks.

13. DIPWG - Maintenance of Presentation Library

See DIPWG 1 Minutes

14. DIPWG - Liaison matters other when TSMAD

See DIPWG 1 Minutes

15. DIPWG - Strategic Issues

See DIPWG 1 Minutes

16. S-101

16.1 Tides in S-101

After a brief discussion on how best to integrate tides in S-101, it was decided that there was not sufficient experience or knowledge on how this should be done and TSMAD needs to seek the guidance of the TWLWG and other working groups.

Action: Tides in S-101 - need to seek the guidance of the Tides and Water Level WG concerning the inclusion of tides in S-101. Chairman to discuss with the TWLWG Chairman.

16.2 Portrayal in S-101

The TSMAD Chairman noted that some parts of S-52 are ENC specific and should be included in S-101 (e.g. the presentation library), however those parts that are not ENC specific should remain in S-52.

Action: A mechanism needs to be defined outlining how new features proposed to the FCD can have their portrayal developed – e.g. sent to DIPWG for portrayal. This process needs to be documented somewhere. (BG).

JP questioned whether there is also a need to be able to register a symbols for certain requirements. Doug O'Brien (IDON Technologies) proposed that portrayal should be treated

differently - some features may not be portrayed in an ENC, and some of the registered symbols may not be included in an ENC Product Specification. There may be a need for a registry management structure (as for the FCD) to ensure that new requests are distributed to all register managers to ensure consistency. He noted that the S-101 feature catalogue and portrayal catalogue must be harmonized.

Action: TSMAD to formally request DIPWG to review S-52 to see what parts should be moved into the S-101 product specification. (BG)

Action: DIPWG need to change their TOR to include the register management process. (DIPWG Chairman to propose this to the HSSC 1 meeting).

16.3A TSMAD18-16.3A S-101 Product Specification and 16.3B S-101 General Discussion

Tom Mellor (UK) reported that TSMAD18-16.3B S-101 General Discussion was intended to draw attention to specific areas of S-101 that need in-depth discussion to establish a way forward in the development of S-101. There is a requirement to develop a strategy for tracking entries inserted into the Feature Concept Dictionary.

Action: Need to develop a strategy for tracking entries included into the FCD. Some will include features and attributes, and the whole package would be specific to the feature catalogue. (S-101 development group. This should be posted where it is publicly visible / available. Tom Mellor to make up the page and Tony Pharaoh to include on the IHO server. (TM and TP)

ENC 2.0 – There is a need to develop a strategic plan to differentiate between S-57 and S-101 ENC cells. It was decided to refer to the new (S-101 based) cell as S-101 ENCs. There is a need to rewrite rules to enable multiple M_NSYS with different ORIENTS.

Action: There is a need to rewrite rules to have multiple M_NSYS with different ORIENTS This needs to be included in the S-101 encoding guide. (Tom, Julia, Richard)

There is a requirement to develop a mechanism for delivering new updates to the feature and portrayal catalogues onboard vessels (i.e. what mechanism is required to ensure that OEMs get catalogue updates to their ECDIS so that new ENC features can be displayed. Should new catalogues be placed on the IHO web site? It was decided that this should be the responsibility of service providers. They must check when a new catalogue is released and what the status of the new versions ENC releases is. This must also take into account the issue of software updates. It was agreed that this needs to be done in a controlled environment and needs to take account of relevant IMO regulations.

Action: this needs to be referred to the data quality and supply chain working group. Updates should be included as part of an exchange set. They should also be requested to consider the question of SW updates to EDCIS presently being considered for inclusion as an IMO requirement. (Julia Powell Tom Mellor and Richard Fowle to forward this to the WG).

Concerning the issue of multiple scopes, Julia Powell (US) noted that it was not clear where the scope should be placed and whether it would be possible to include multiple scopes (e.g. for scale dependent and scale independent scopes). The ISO document does not provide guidance on this. Doug O'Brien (IDON Technologies) proposed to rather have a multipart scope that describes the variants of the product.

Action: Barrie Greenslade, Doug O'Brien to get additional information on how to include multiple scopes in the S-101 product specification during the ISO/TC211 meeting (BG, Doug DO'B).

Application Schema. There is a need to provide use cases for concepts such as independent features, complex attributes etc… The Chairman noted that most of the data model is

captured in the catalogue and it should only be necessary to provide examples where appropriate. Trying to model everything in the application schema will result in a big update task. Eivind Mong (Jeppesen) suggested that only example applications should be included. This was accepted.

Proposal to divide groups into themes based on INT 1. Richard Fowle (IC-ENC) proposed that any decision about what themes to include in S-101 (e.g. for filtering) should be based on feedback from the outreach exercise. Konstantin Ivanov (Transas) noted that themes may be useful for production systems, but would not be much use within the ECDIS. Hugh Astle (Caris) concurred and noted that this is getting into the realm of portrayal - S-101 is an exchange format. The only reason for putting features into a theme would be if it was not possible to group them by attribution. Mathias Jonas (Germany) said that this is controlled by viewing groups within the ECDIS but themes could be used for additional layers such as an ice layer. Tom Mellor noted that the inclusion of themes should be considered for data producers to use for additional "special" layers. Tom de Puyt (ESRI) was of the opinion that having to group data into themes will complicate the production process. It was decided that themes should only be included if there is a strong use case for them.

Ed Kulawak Kowalek (IIC) noted that most production system use independent themes based on production criteria. For data use (by systems), they are not required as EDCIS don't use them. They may however be useful for data exchange (e.g. the distribution of a layers containing all lights). It was decided to keep the skin of the earth theme (Group 1) concept. All other themes will be in Group 2 implicitly

Time Varying Features. It was decided that MAGVAR is required for S-101 ENCs, however it was noted that HOs should consider making magnetic variation information available as a separate product (perhaps on a world wide scale). A separate product specification would be required for this.

There is a need to re-examine the inclusion of mandatory attributes. It is proposed that some mandatory attributes may not be necessary anymore. It was noted that there is also a need to encode "unknown" attributes (i.e. to indicate that the value is not known by the encoder and not left blank). There is a need to consider cases where this needs to be encoded for a numeric attribute where "0" is a value.

Action: DIPWG to investigate the portrayal of the "?" symbol. The "?" should be used for cases where an attribute has been encoded erroneously – not left blank or unknown. Changes to the presentation library need to be made to reflect this.

There is a need to reconsider the relevance the 0.3mm rule for S-101. Should it be mandatory? - Can production software filter geometry properly? It was decided that this should not be included in the product specification as a mandatory requirement, but should be included in the encoding guide as optional.

Should each geometry type be described in the S-101 Product Specification or should it simpley refer to the S-100 geometry types? It was decided to leave the full definition of the classes in S-100 and only have subset of classes (used for S-101) in the PS.

How to record changes in datum? There is a need to ensure that the changes in vertical and sounding datum are displayed to the mariner. The portrayal section needs to address this. It was decided that this should be presented to the mariner. For example the mariner should be notified when his ECDIS progresses from one national cell to another adjacent cell with a different sounding (vertical) datum. DIPWG need to determine how this will be displayed. Jeff Wootton (Australia) proposed that it would be sufficient to display the sounding datum in an information box on the ECDIS.

Action: How to warn the mariner about a change in sounding (vertical) datum. Need to include a question in the outreach questionnaire. Also need to follow up with IEC 61174. (JP)

It was decided that the rest of the items identified in this paper (TSMAD18-16.3A) would be discussed offline.

16.3C S-101 Text Placement

Hans Engberg (HE - Sweden) provided a presentation on the proposal of the “Improved Data Exchange Working Group” of the Nordic Hydrographic Commission. The working group proposes that cartographic attributes be included in S-101 in order to improve the text placement in ECDIS.

Julia Powell proposed that there is a need to include cartographic text in S-101. Dion Gaulton (Canada) felt that this could be an optional theme for supplemental information in an ENC.

Mathias Jonas (Germany) explained that text placement is the most time consuming process in the cartographic production process, and using a cartographic approach would be very resource intensive.

Eivind Mong (Jeppesen) proposed that using the attribution for text would solve some of the problems related to scale changes.

Tom Mellor (UK) suggested using a complex attribute with a bearing from an anchor point.

The Chairman noted that if cartographic objects were used for paper chart placement, within a “products database”, the same text placement attributes could be used for the ENC. Clearly there is a requirement for testing and evaluating to establish the best approach for this.

It was concluded that TSMAD supports this important work and proposes that it should be progressed on the WIKI.

16.3D S-101 S-101 Scale Independent Features

Scale independent datasets – that included only the point features from their database. The TSMAD Chairman presented a list of features that are proposed for inclusion within this the layer, and noted that these include features that are frequently updated. He proposed that the use of scale independent layers / cells should be optional noting however that the same object must not be duplicated - i.e. should not appear in both the dependent and independent layers.

Hans Engberg (Sweden) expressed the opinion that which feature classes be included in a scale independent layer must be decided by each HO and should not be limited to the proposed list. HE also pointed out that there will be situations where some of the instances of a feature class will be in the scale independent layer, while some of the instances are in the scale dependent cell.

After some discussions the proposal was withdrawn.

16.3E Display Scales

Hans Engberg (HE) provided a presentation on display scales. He presented a proposed ENC loading strategy which is based on minimum, maximum and hyper display scale values. He noted that this of course needs further testing.

It was agreed that this would lead to a more unified display strategy. It was decided that this proposal be included into S-101 work and tested.

16.3F S-101 Grid Referencing System - Discussion Paper

Tony Pharaoh provided a presentation on a grid indexing and referencing system that he could be used for ENC use and could also provide a useful mechanism for indexing ENCs and other nautical products (layers) such as high resolution bathymetric grids. The meeting agreed that this should be developed further and should be proposed to the next HSSC meeting as a work item for inclusion in S-101.

16.3G S-101 ENC Service Delivery

Jonathan Pritchard (DPSWG Chairman) provided a presentation on the S-63 scheme and outlined a future proposal to separate data content from the carrier mechanism. Doug O' Brien (IDON Technologies) proposed that S-101 should perhaps be a content specification and the encodings should be documented in an encoding specification. He also proposed that S-63 could have multiple encodings. It was agreed that TSMAD would need to work closely with the DPSWG the ensure that the next ENC product has a well integrated security and authentication mechanism.

16.3H S-101 Support Files (TSMAD18-16.3H)

Richard Coombes (UK) provided a presentation on a proposed new structure for ENC support files. This issue had previously been discussed at the TSMAD17 meeting (2008), and the DPSWG meeting in April 09. Shinichi KIKUCHI (Japan) supported this proposal, and proposed a few minor changes as shown below; (These included change to the producer codes from 2 characters to 4 characters).

File Name	Type	Value	Remarks
Producer Code	CharacterString	[2] **[4]**	Two **Four** character national producer code as defined in ISO 3166 or other registered company/organisation user codes
Support File Name	CharacterString	[8]	Any upper case alpha characters A to Z and digits 0 to 9.
Delimiter	CharacterString	[1]	A single underscore
Support File Version	CharacterString	[3]	1 - 999
File Extension	CharacterString	[3]	As defined in the SupportFileDiscoveryMetadata "dataType"

Example:

1. ENC Producer Code XX** JP** (* = space or null)
2. OEM or Data Server XXX* JRC*
3. Others &&XX JP12 registered company JHOD /IHO

ENC Producer code (non official)

IHB to administer OEM and ENC Servers codes.
ENC Producers to administer the "Others" codes

16.3 S-101 Feature Catalogue

Document TSMAD18-16.4 S-101 Feature Catalogue XML files.

The TSMAD Chairman noted that these were preliminary feature catalogue files that had been included for information only. He invited TSMAD members to review the file and report any comments to Tom Mellor (UK).

16.4. S-101 Feature Catalogue

The TSMAD Chairman noted that files containing an example feature catalogue (in an xml format) had been made available as part of the meeting document, and he encouraged members to review these file and feed any comments back to him. He noted that a facility to build a feature catalogue had not yet been included in the registry.

16.5. S-101 Encoding Guide

No further work has been carried out on this.

16.6. Nautical Publications Information – Discussion Paper

The TSMAD Chairman noted that he and the SNPWG Chairman had discussed that the Marine Environmental Protection Product Specification work was more appropriate for the SNPWG, and that this should be proposed to the HSSC1 meeting for approval. Tom Mellor noted that SNPWG had included a number of item in the SNPWG register. Many of these needed updating. This work has now been completed.

17. Any Other Business

A presentation on high definition gridded data was provided by Marc Joumeau (MJ - Canada). The reason for the development of this project was to improve safety in the St Lawrence Seaway / River. The seaway is dredged for 250 km to a depth of 11 meters and needs constant monitoring. A non harmonic tidal regime and other river influences such as ice must constantly be taken into account. In addition to real time water level up dates, there is also a need to have updated, accurate bathymetric information. The grid has been produced at a 2.5 meter resolution. Updating is done via grid block replacement. He proposed that an S-10X product specification for integrating high resolution gridded data for navigational purposed should be developed. For further ice - information see www.marineinfo.gc.ca

Doug O'Brien (IDON Technologies – DO'B) explained that the intention is to have multiple coverage's that will include, both vector ENC and gridded data, in a single navigational product.

Eivind Mong Jeppeson noted that this has the potential to provided improved product and services for the mariner. Konstantin Ivanov (Transas) reminded the meeting that gridded products could not be considered as the primary source of navigation as these products would not be IMO compliant. The question was raised about how portrayal rules will be included. DO'B explained that this issue is being worked on by the equipment manufacturing as part of a test project. This is complex issue as portrayal across the stack of navigational layers requires an integrated approach.

Jean-luc Deniel (France) noted that this would result in there being two sources of bathymetric information within an (ENC - soundings and the gridded overlay). He enquired how these would be reconciled w.r.t. discrepancies between them? Mathias Jonas (Germany – MJ) explained that the high definition data will only cover dredged areas which are subject to frequent change, however this issue was being considered within the test bed project.

Mathias Jonas noted that Germany also has a slightly different approach to including high definition bathymetry. He cautioned that TSMAD must guard against having too many products specification for use within ECDIS as this has an impact on data producers, mariners and OEMs. This would not apply to other (non ECDIS) S-100 product specifications. He proposed that the meeting may want to recommend to HSSC that TSMAD include this in its work program as an S-10X product specification

Action: Canada to put a paper together for inclusion on the TSMAD WIKI and possibly for submission to HSSC as a motivation to include this in the TSMAD work program. As most of the work has already been completed, TSMADs role will be mainly to review the PS and include in its outreach.

Mr. Robert Sandev (United Nations - Geographic Information Systems Officer -RS) provided a presentation outlining their obligation to establish marine boundary data store and expressed an interest in using S-100 for developing a specification for this purpose.The UN Division for Ocean Affairs and the Law of the Sea office act as the cadastre for this maritime boundary data and they would like to develop an S-100 based product specification that could be used by maritime states for depositing their boundary claims in a digital GIS format. As maritime boundaries are significant to mariners and are often included on charts, it was noted that this work would be beneficial to both organizations. RS requested that TSMAD provide guidance

/ help with the development of the product specification. MJ proposed that there was also a need to look at what would be required to include these limits in S-23.

Action: Robert Sandev to write to the IHB (Capt. Robert Ward) noting that he attended the TSMAD 18 meeting, and presented his requirements for an S-100 based product specification, and request that TSMAD provide some assistance support with the work.

Paul Burton (UK) noted that maritime boundary information is a very important issue for the AML community and this is an initiative that should be considered as a high priority. He also provided a brief report on the activities of the DGIWG and noted that this should be included as a standing agenda item.

18. Date and Venue of Next Meeting

Australia offered to host the next meeting in Sydney Australia during the week commencing 26 October 2009. Germany offered to host the next combined TSMAD/DIPWG meeting in Germany (either Rostock of Hamburg) during May 2010.

19. Closure of the Meeting

The TSMAD and DIPWG chairman thanked the members of the CHS for hosting the meeting, and for their warm hospitality.

Annex A

TSMAD 18 – List of Documents

Document No	Document Title
TSMAD18-1A	List of Meeting Documents
TSMAD18-1B	List of Participants
TSMAD18-2A	Joint TSMAD18 & DIPWG1 Draft Agenda *(rev 9 dated 29 April)*
TSMAD18-4A	Minutes of the 17th TSMAD Meeting (Seattle, USA)
TSMAD18-4B	Status of actions from the TSMAD17 Meeting.
TSMAD18-5.1A	Dynamic Tides in ECDIS
TSMAD18-5.3	S-57 Supplement 2 - *Amalgamated version (29 April 2009)*
TSMAD18-5.4	Review of S-65 *(ENC Production Guide)*
TSMAD18-5.8	TSMAD TORs to include S-100 outreach.
TSMAD18-7.1	Report on S-102 Bathymetric Product Specification *(See TSMAD18-17)*
TSMAD18-7.2	Report on Marine Environmental Product Specification WG
TSMAD18-7.3	Report on the CSPCWG
TSMAD18-7.4A TSMAD18-7.4B	ENC Updating Working Group Report EUWG membership list
TSMAD18-07.6	Report from the DQWG (presented to CHRIS 20)
TSMAD18-8	Final acceptance - post Technical Writer editing
TSMAD18-10.1	Issues from the ENC Encoding Bulletin Sub-Working Group
TSMAD18-11.2A	Deferred Actions
TSMAD18-11.2B	Internal Extensions Review SHOM
TSMAD18-11.2C	Use of INFORM and CTNARE and additional bindings for the S-101 feature catalogue.
TSMAD18-11.3A	S-101 User Outreach
TSMAD18-12	S-58 Edition 4 Draft Edition *[Version 2 - updated 21 April] - (PDF Version)*
TSMAD18-16.3A	S-101 ENC Product Specification Draft Ver 0.0 *(PDF format)*
TSMAD18-16.3B	S-101 General Discussion
TSMAD18-16.3C	S-101 Text Placement
TSMAD18-16.3D	S-101 Scale Independent Features
TSMAD18-16.3E	Display Scales
TSMAD18-16.3F	S-101 Grid Referencing System - Discussion Paper
TSMAD18-16.3G	S-101 ENC Service Delivery
TSMAD18-16.3H	S-101 Support Files
TSMAD18-16.3I	S-101 Support Files - an alternative approach - Information paper
TSMAD18-16.3J	How to Improve the users experience ?
TSMAD18-16.4	S-100 Feature Catalogue (XML files - .zip format)
TSMAD18-16.6	Nautical Publications Information in S-101 - Discussion Paper
TSMAD18-17	S-10X High resolution Bathymetry in ECDIS

Annex B

Joint 18th TSMAD & 1st DIPWG Meeting
AGENDA

Note: The meeting will take place at Camsell Hall at 580 Booth St and will start at 0900 on the 4th May.

1. Opening and Administrative Arrangements

Docs: TSMAD18-01A List of Documents
TSMAD18-01BList of Participants
DIPWG1-01A List of Documents
DIPWG1-01B List of Participants
Apologies

2. Approval of Agenda

Docs: TSMAD18/DIPWG1-02A Agenda

Note that this draft agenda only covers matters contributed from DIPWG to the 4th combined DIPWG/TSMAD meeting. Any participant is strongly encouraged to attend the complete combined meeting in order to support a holistic approach of data and display aspects in future S-100 based products. A combined meeting Agenda is provided as well.

3. DIPWG - Chairman, Vice-chairman and Secretary

This will be the first meeting of the former CSMWG under its new name: Digital Information Portrayal Working Group - DIPWG. The new name reflects the enhanced scope of future IHO S-100 standards series in terms of visualisation of hydrographic information for applications beyond nautical purposes.
The meeting will be co-chaired by Barrie Greenslade, Chair TSMAD and the nominated Chair DIPWG, Colby Harmon of NOAA, USA. This Agenda is commonly prepared with the former chairman of CSMWG, Mathias Jonas of BSH, Germany.
Tony Pharaoh will act as Secretary for TSMAD
Richard Coombes will act as Secretary for DIPWG.

4. TSMAD - Matters arising from minutes of 17th TSMAD

Docs: TSMAD18-04A Minutes of TSMAD-17
TSMAD18-04BStatus of actions from TSMAD-17

5. TSMAD - CHRIS 20 TSMAD Actions

5.1. 20/6 - Dynamic Tides in ECDIS
Doc: TSMAD18-05.1A

5.2. 20/12 – Encoding Bulletin on S-57 Temporal Attribution
Note: to be taken under agenda item 6

5.3. 20/13 - S-57 Temporal Attribution (Supplement # 2)
Doc: TSMAD18-05.3

5.4. 20/18 – Review of S-65
Doc:TSMAD18-5.4

5.5. 20/20 – Encoding Bulletin on Linear Depth Areas
Note: to be taken under agenda item 6

5.6. 20/24 – CATZOC Definitions
Note: to be taken under agenda item 5.3 above

5.7. 20/29 – GII content and management
Note: to be taken under agenda item 7

5.8. 20/31 – TSMAD TOR to include S-100 outreach
Doc: TSMAD18-05.8_RevisedTOR

6. DIPWG - Matters arising from minutes of 18th CSMWG

Docs: DIPWG1-06A Minutes of CSMWG-18

DIPWG1-06B Status of actions from CSMWG-18
DIPWG1-06.1A C&S Maintenance Document No. 7 – May 2009

No	Topic	Documents	Remarks/presenter
6.1	Issue Maintenance Doc No. 7 (Including PLs reported error in DGPS symbolisation from Feb 2009)	DIPWG1-06.1A	A-No. 5 MJ
6.2	S-57 Encoding Bulletins and S-52 Portrayal Bulletins	DIPWG1-06.2A	A-No. 1,3,4 JW A-No. 16, 19 MJ
6.3	Use of alternative colours for mariners objects and within the aeronautical world	DIPWG1-06.3A	A-No. 7 HP A-No. 12 EM
6.4	Enhance Chart 1 to include ENC symbols	DIPWG1-06.4A	A-No. 8,9 NGA
6.5	Review mechanisms for rotating text	DIPWG1-06.5A	A-No. 20 OW
6.6	Review of notable action items other than those which haven't been explicitly raised under the topics above	DIPWG1-06.6A	

7. TSMAD - Reports by other working groups

7.1. S-102 Bathymetric Product Specification
Doc: TSMAD18-07.1

7.2. Report on MEPPSWG Activities (USA)
Doc: TSMAD18-07.2

7.3. Report on CSPCWG Activities (Australia)
Doc: TSMAD18-07.3

7.4. Report on EUWG Activities (France)
Doc: TSMAD18-07.4A Report
TSMAD18-07.4B Membership list

7.5. Report on DSCC Activities (Jeppesen Marine)
Doc: TSMAD18-07.5

7.6. Report on DQWG
Doc: TSMAD18-07.6

8. TSMAD - S-100 – Final acceptance - post Technical Writer editing task.
Doc: TSMAD18-08

9. DIPWG - Report of S-100 activities

9.1. Creation of "xml application schemas" to support the S-100 portrayal model.
Doc: DIPWG1-09.1A

9.2. Creation of digital symbols described in Addendum 3.4 and export of symbols in XML.
Doc: DIPWG1-09.2A

9.3. Mapping of PL 3.4 look up tables to "S100 portrayal rules"

9.4. Creation of CSPs in XML
Docs: DIPWG1-09.4A Translation of CSPs to XML

10. TSMAD - Encoding Bulletins
Docs: TSMAD18-10.1 Encoding Bulletin Sub-WG Issues

11. TSMAD - S-100 GII Content and Management

11.1. OEF register

11.2. Hydro register content
Docs: TSMAD18-11.2A Deferred Actions List
TSMAD18-11.2B SHOM – Internal Extensions Review
TSMAD18-11.2C Use of INFORM and CTNARE Jeppesen

11.3. GII management (including outreach)
Doc: TSMAD18/DIPWG1-11.3A S-101 User Outreach

12. TSMAD - S-58 – New Edition
Doc: TSMAD18-12

13. DIPWG - Maintenance of Presentation Library

13.1. Isolated danger problem
Doc: DIPWG1-13.1A
13.2. Failure correction to ECDIS Chart 1
13.3. AIS on Aids to Navigation

Doc: DIPWG1-13.3A, DIPWG1-13.3B, DIPWG1-13.3C

14. DIPWG - Liaison matters other when TSMAD
14.1. ISO – status of ISO 19117
Docs: DIPWG1-14.1A, DIPWG1-14.1B, DIPWG1-14.1C

15. DIPWG - Strategic Issues
15.1. IHO - Revision process of S-52 Main document
Docs: DIPWG1-15.1A Draft S-52 Edition 6
DIPWG1-15.1B S-52 revision process
15.2. IMO - Decision on ECDIS carriage requirements
Doc: CHRIS20 Minutes

16. S-101
16.1. Tides in S-101
16.2. Portrayal in S-101
16.3. S-101 Draft review
Docs: TSMAD18-16.3AS-101 Product Specification
TSMAD18-16.3B S-101 General Discussion
TSMAD18-16.3C S-101 Text Placement
TSMAD18-16.3D S-101 Scale Independent Features
TSMAD18-16.3E S-101 Display Scales
TSMAD18-16.3F S-101 Coverage Reference System
TSMAD18-16.3G Service Delivery
TSMAD18-16.3H ENC Support File Formatting and Management
TSMAD18-16.3I ENC Support Files – An Alternative Approach.
TSMAD18-16.3J S-101How to Improve the end users experience

16.4. S-101 Feature Catalogue
Docs: TSMAD18-16.4 S-101 Feature Catalogue XML files.
16.5. S-101 Encoding Guide
16.6. Nautical Publications Information – Discussion Paper
Doc: TSMAD18-16.6 Nautical Publications Information

17. S-10X – High Resolution Bathymetry in ECDIS
Doc: TSMAD18-17 High resolution Bathymetry in ECDIS

18. AOB
18.1 Presentation Library Look-up Table Modifications for Obstructions
Doc: DIPWG1-18.1A PL Look-up Table Modifications for Obstructions

19. Date and venue of next meeting

20. Close of meeting

Annex C

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Annex D

LIST OF ACTION ITEMS.

No	TSMAD	DIPWG	Agenda Item	
1	TM		4.1	CHRIS action 16/6.1. Include missing definitions in the FCD.
2	RF		4.1	CHRIS Action 20/18 - BSHC study on ENC consistency and CHS report are to be reviewed and included in S-65 Annex 1.
3	BG/AP		5.1	Cooperate with TWLWG & SNPWG to develop tidal prediction data exchange format.
4	JP			Open dynamic tides discussions on WIKI
5	All		7.1	All members are asked to circulate the draft S-102 Bathymetric Product Specification document within their offices and ask for feedback, and for hydrographic experts to contribute to this work. All feedback to be sent to Wade Landers.
6		RC	7.4	It was agreed that a paper needs to be produced for HSSC outlining the issues and recommending where the -52 Annex A (updating) document should be moved. (Richard Coombes).
7	BG		8	Send final technical edit on S-100 out through TSMAD letter for approval by TSMAD. Completed, amalgamated document to be circulated via TSMAD letter as soon as the review is completed. S-100 to be submitted to HSSC1 for final approval after which it should be sent out to MS via CL for final approval. (BG)
8			8	Evaluate the status of 19117 at the Molde meeting and decide whether to include a profile of 19117 – if yes – include and distribute via another TSMAD letter.
9	BG/IHB		8	S-100 to be submitted to HSSC1 for final approval after which it is to be sent out to MS via CL for final approval.
10	BG		8	Clarify/Validate who approves different levels of changes to S-100
11		CH	6	Amend CSMWG 18 minutes, item 8 for attributes wrongly identified as no capable of being displayed on ECDIS (See JW notes). PRDARE (CATPRA) values should be…. SLOGRD should be symbolised.
12	JW		10	Forward the EBs and FAQs on new attribute values in S-57 edition 3.1; Objects permitted for Use in ENC; Strip Lights and Update File Sizes to the IHB for publication on the IHO web site. Co-ordinate further discussion on the EB/FAQ relating to duplicate FOIDs with the intention to publish as soon as possible. Forward the EB on the encoding of wrecks to the IHB for publication on the IHO web site.
13	BG		11.2	Chairman to enquire whether the TWLWG have a requirement to set up a register for tidal purposes or whether they want to include their requirement within the hydro register. They should be made aware of the full ramifications of setting up and maintaining a register.
14	AP		11.2	Collate all papers from past TSMAD meetings and send to Chairman.
15	BG		11.2	Send out TSMAD letter asking if items on the deferred amendments action list are still valid.

16		EM	6.3	Monitor on-going FAA and light marine studies regarding use of additional colours and provide results when they are complete.
17	BG		5.8	Change TSMAD terms of reference (TOR) to S-10X standards in general and complete item 3a (iii). Resolved during the meeting. Submit the new TORs to HSSC1 for approval.
18	BG		7.1	Hold a separate 2 or 3 day S-102 meeting.
19		CH	7.3	Consider the need for S-52 symbolisation of new pipeline through tunnel and offshore renewable energy installations objects created by CSPCWG (paper charts standardization).
20		RC	7.4	Draft a paper to HSSC with EUWG Chairman regarding the future maintenance of S-52, Appendix 1. (Recommendations relating to the extension of this appendix to contain guidance on encoding to supplement the update delivery mechanism. Perhaps under a different S number).
21	BG/JP/EM		11.2C	Send paper TSMAD18-11.2C (from Jeppesen) to the chart specifications working group for review and comment. Based on their response, it should be decided which classes / attributes to include in the register. JP to contact EM to review the proposals and then to include them with the NOAA proposals.
22	JP/RF/BG/ TM		11.3C	Set up an outreach sub working group (including RF, TM, and BG) to compile and distribute the questionnaire.
23		JP	11.3	Consider nominating an a DIPWG member to the hydro register control body
24	KF/BG		11.3	Create S-100 “Help” webpage prototype.
25	BG		11.3	Review David Enabnit’s offer to physically host the registry. It may be more appropriate for NOAA to administer the registry, which is currently hosted at the IHB
26	JP		11.2	USA (NOAA) will work with Jeppessen to enter new features and attributes into the Hydro register. Coordinate with CSPCWG regarding additional topmark attribution
27		OEMs	9	Review and comment on CSP to XML translation. Lookup table to XML translation with special attention to the utility and compatibility of the XML schema used by each.
28		OEMs	9	Review and comment on the S-100 and S-101 portrayal model.
29			9	Meet with TSMAD chair and others at the UKHO to refine the mechanics and how the portrayal model and CSP translations will be implemented in S-100 and S-101.
30		CH	9	Make recommendations as to what portion of S-52 should be incorporated into S-101
31	BG/JP	CH		Refine and Clarify the governance for each component (Standards, Specifications & Registers) of S-100 &S-101 in white paper for HSSC.
32		MJ	13.1/2	Modify depth area attribution in ECDIS Chart 1 ENC files to resolve isolated depth area problems.
33		EM	13.1/2	Jeppesen to review modified ECDIS Chart 1 and files to confirm they display correctly.
34		JP	11.3	Share the results of the NOAA Chart/ECDIS user survey outreach).

35	JP		11.3	Establish ad-hoc sub group to develop outreach survey questions, including clear instructions and explanation of the intent of the survey.
36	BG	CH		Establish protocol for the coordination among CSPCWG, TSMAD and DIPWG when feature, attributes, symbols and portrayal rules are created or modified.
37		MJ	16.2	Modify the TOR for DIPWG to also handle the management of the portrayal registers and portrayal sections of S-101. (Submit to HSSC1 for approval).
38	BG		16.1	Need to seek the guidance of the Tides and Water level WG concerning the inclusion of tides in S-101.
39	BG			TSMAD to formally request DIPWG to review S-52 to see what parts should be moved into the S-101 product specification.
40	S-101 WG			Define and document the mechanism required for having portrayal developed (by DIPWG), for newly accepted features. (This process needs to be documented somewhere S-101 WG).
41	AP		16.2	Create Webpage for information about registries.
42	JW			Need to rewrite rules to have multiple M_NSYS with different ORIENTS and need to figure out where it goes in S-101, the Feature Catalogue and encoding guide *Action to update the S-101 Encoding Guide.*
43		MJ/ CH	16.3	Action DIPWG for the future adding unknown as an enumeration value to prevent the question marks being displayed on the ECDIS. Current PL to be changed to differentiate between unknown and null. In S-52 we can amend the look up tables to make unknown allowable. Deferred amendment.
44	S-101/WG/TM/AP		16.3A	Develop a strategy for tracking entries included into the FCD. (S-101 development group. This should be posted on the IHO web site). (TM to make up the web page and AP to include on the IHO server).
45	S-101/WG/JP/TM/RF		16.3A	Request the supply Data Supply and Certification WG to study and provide recommendations on an appropriate mechanism for including updates as part of an exchange set.
46	BG/DOB			Enquire how to include multiple scopes in the S-101 product specification at the ISO/TC211 meeting.
47		JP	16.3A	Include a question in the outreach questionnaire concerning the provision of warning/notification of a change in sounding (vertical) datum in an ECDIS.
48	RC		16.3F	Support file formats. Include a question in the outreach questionnaire asking OEMS and users, which support file formats they would like to have included.
49	DV		17	Develop an information paper for submission to HSSC1 motivating this to be included this as a TSMAD work program item.
50	RS		17	Robert Sandev to write to the IHB (Capt Robert Ward) noting that he attended the TSMAD 18 meeting, and presented his requirements for an S-100 based product specification. Request that TSMAD provide some assistance/support with the development of their product specification.
51	BG		16.6	Concerning the discussion paper about the inclusion of nautical publication in ECDIS, the chairmen of TSMAD and SNPWG are to discuss all proposed S-101 product

				specifications, to ensure that work activities and products are harmonized.
52	AP/BG		16.3F	Grid index reference system – Paper and presentation to be developed for HSSC1 requesting this to be included as a WI for TSMAD.

BG - Barrie Greenslade, JW - Jeff Wootton, RC - Richard Coombes,
JP – Julia Powelll, RF – Richard Fowle, TM – Tom Mellor,
DV - Don Vachon, AP – Anthony Pharaoh, RS – Robert Sandev,
DO'B – Doug O'Brien, KF - Kelly Fougerousse, HE – Hans Engberg.

Annex E

Revised Terms of Reference

TRANSFER STANDARD MAINTENANCE AND APPLICATIONS DEVELOMENT W.G. (TSMAD)

1. Objectives

a) To maintain, develop and extend:

(i) the S-57 IHO transfer standard for digital hydrographic data;
(ii) the S-100 IHO Geospatial Standard for Hydrographic Data;
(iii) S-100 based IHO Product Specifications as listed in the TSMAD work program;

b) To provide a register manager and control body for the management of the IHO Geospatial Information Infrastructure Hydrographic register.

c) To monitor the development of other related international standards.

2. Authority

This WG is a subsidiary of the Hydrographic Services And Standards Committee (HSSC). Its work is subject to HSSC approval.

3. Procedures

a) The WG should:

(i) maintain the S-57 IHO transfer standard for digital hydrographic data by preparing and promulgating maintenance documents containing clarifications, corrections and extensions when required;

(ii) maintain the S-100 IHO Geospatial Standard for Hydrographic Data as directed in Part 13 (S-100 Maintenance Procedures)

(iii) maintain the S-100 IHO ENC Product Specification as directed in S-100 Part 12 (Maintenance).

(iv) review relevant international standards and specifications and advise HSSC accordingly;

(v) consider new topics as instructed by HSSC and advise HSSC accordingly and/or draft the relevant extension documents;

(vi) draft new editions of the IHO transfer standard for digital hydrographic data as instructed by HSSC.

b) The WG should work by correspondence, group meetings, workshops or symposia. Permanent or temporary sub-working groups may be created by the WG to undertake detailed work on specific topics such as: maintenance of the IHO transfer standard for digital hydrographic data, product specifications, tidal information, survey information, etc. The WG should meet at least once a year.

d) The WG should liaise with other HSSC WG's, international organizations and industry to educate and encourage the application of IHO standards to the work of those organizations.

e) The WG should identify and promote the availability of other navigation-related data in ECDIS and in IHO geospatial standard-compliant format

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f) The WG should identify a work programme for each year, including expected time frame.

4. Composition and Chairmanship

a) The WG shall comprise representatives of IHO Member States (M/S), Expert Contributors and Accredited NGIO Observers.

b) Decisions should generally be made by consensus. If votes are required on issues or to endorse proposals presented to the WG, only M/S may cast a vote. Votes shall be on the basis of one vote per M/S represented.

c) Expert Contributor membership is open to entities and organisations that can provide a relevant and constructive contribution to the work of the WG.

d) The Chair and Vice-Chair shall be a representative of a Member State. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the Conference (Conference to be replaced by Assembly when the revised IHO Convention enters force) and shall be determined by vote of the Member States present and voting.

e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties.

f) Expert Contributors shall seek approval of membership from the Chairman.

g) Expert Contributor membership may be withdrawn in the event that a majority of the M/S represented in the WG agree that an Expert Contributor's continued participation is irrelevant or unconstructive to the work of the WG.

h) All members shall inform the Chairman in advance of their intention to attend meetings of the WG.

i) In the event that a large number of Expert Contributor members seek to attend a meeting, the Chairman may restrict attendance by inviting Expert Contributors to act through one or more collective representatives.