

**Joint TSMAD 22 & DIPWG 3 Meeting  
Seoul, Korea, 11-15 April 2011  
Minutes.**



**Chairman:** Barrie Greenslade (UKHO)  
**Vice Chairman:** Jean-Luc Deniel (SHOM)  
**Secretary:** Tony Pharaoh (IHB)

**Annexes:**

Annex A – List of Documents  
Annex B – Agenda  
Annex C – List of Participants  
Annex D – List of Action Items.

Director General of KHOA Mr. Im Joo Bin welcomed members to Korea. On behalf of KHOA he thanked TSMAD and DIPWG members for their hard work in developing standards for ENC and for the contribution that these standards have in ensuring safe navigation. He noted that Korea will be actively involved in supporting the development of standards and the work of these working groups. Mr. Im wished the Working Group members good success with the meeting and also requested that they enjoy themselves while in Korea.

The Chairman Barrie Greenslade thanked Mr. Im for his warm welcome and for the excellent logistics and support that had been provided by the KHOA staff members in particular Mr. Yong HUH. He noted that unfortunately the meeting co-chairman Mr. Colby Harman was not able to make it to the meeting due to unforeseen circumstances however the DIPWG vice chairperson Julia Powell would act as chairperson. BG noted that it would be an important meeting as there were many key decisions regarding portrayal and other issues that had to be made.

2A Approval of the Agenda.

The joint TSMAD22 and DIPWG3 agenda was approved by the meeting, with the addition of two late papers (listed in Annex A and Annex B as INF1 and INF2) by DK (CR).

3A Approval of the TSMAD 21 Minutes

Minutes of the TSMAD-21 (Victoria) 2010 meeting were reviewed and approved.

3B Status of Actions from TSMAD21 (documents 03C, 03D, 03E and 03F);

Action 1. Develop a question concerning source breaks for inclusion in the 2011 NOAA survey. Completed / closed.

Action 2. Liaise with the TWLWG concerning the inclusion of tidal feature classes/properties in the registry, and provide feedback to the TWLWG on the

TWLWG paper to TSMAD 22. TR reported that a paper had been submitted to the last TWLWG meeting and he was awaiting feedback. Completed/closed.

Action 3. Include the additional enumerated values provided by the IEWG in the hydro register, and make necessary changes to the hydro and Inland ECDIS registers to ensure that all duplicate enumerations are resolved. BG reported that this item had been completed. Completed/closed.

Action 4. Develop an Encoding Bulletin to provide additional guidance for data encoders regarding the use of foul ground. JW reported that this had been addressed in the new version of the UOC. The new UOC wording will be used to produce the encoding bulletin. Ongoing

Action 5. Develop a FAQ for encoding Marine Rescue and Coordination Centers in S-57 ENCs. Also consider how to add to this to the UOC. JW reported that this had been addressed in the new version of the UOC. The new UOC wording will be used for the FAQ. . Ongoing.

Action 6. Produce an Encoding Bulletin describing how wave energy devices and wave farms should be encoded in S-57 ENCs. JW reported that this had been addressed in the new version of the UOC. The new UOC wording will be used for the encoding bulletin. Ongoing

Action 7. The Chairman is to issue a TSMAD letter inviting members to be part of a sub-working group that will review all new proposals to the registry. BG reported that this had been completed however the names still need to be included in the register. Ongoing

Action 8. Update the Feature Catalogue section of S-100 to describe the use of namespace for unique identifiers will be used for catalogue items. The Product Specification section of S-100 needs to describe the use of Namespaces in the S-100 Feature Catalogues. Ongoing.

Action 9. Carry out additional research on what sorts of data savings can be achieved using coordinate offsets in S-101. This should include how this could be implemented. A paper outlining the results is to be presented to TSMAD 22. TR reported that further research needs to be carried out, and this work is still ongoing. Ongoing.

Action 10. A new maintenance procedure section for S-100 is to be produced and submitted for agreement at the TSMAD22 meeting. BD reported that due to new developments this item will be discussed later in the meeting. Completed (See associated action item.)

Action 11. Provide guidance in the Product Specification template to ensure that producer agencies don't include duplicate dataset (cell) names within the same agency code. Ongoing.

Action 12. Propose a feature definition for SEABED complex attribute for inclusion in the FCD. TR reported that the definitions need to be clarified by a small breakout group. Ongoing.

Action 13. Update the S-100 data model to make provision for boundingPolygon to have multiple polygon geometries. Complete (and for inclusion in the next version of S-100).

Action 14. Develop a paper for the TSMAD 22 meeting investigating how to include additional metadata in an ER file so that it can be used within an EDCIS. Complete/closed.

Action 15. Request the DQWG to include a question on the use of M\_QUAL on small scale ENC's in their user survey. To be distributed as a TSMAD letter. Complete/closed.

Action 16. Send a letter to IC-ENC/PRIMAR members requesting them to comment on what changes they felt should be made to the UOC and report on the strength of wording in the document. BG reported that it was decided not to send out a letter, to but rather complete the UOC and get it to MS for approval. Furthermore, it was decided to examine the issues concerning strength of language for a later version of the UOC. Deferred

Action 17. Establish (from the HDWG Chairman) what flavor of English is stipulated for use in S-32. JW reported that she had corresponded with the Chairman of the S-32. There is no statement of what version of English is used however he reported that the Shorter Oxford English Dictionary is used as a standard. He proposed that TSMAD adopt the same for the Feature Concept Dictionary. Complete/closed.

Action 18. Develop a short paper outlining whether the default state for CONVIS, CONRAD, EXPYOU (and others) can be rationalized for S-101. Ongoing .

Action 19. Paper outlining the issues concerning whether to encode the full colour description for BCNLAT objects, or only the colour of lateral significance. The paper should also (including portrayal problems) and is to be submitted to the next TSMAD / DIPWG meeting. Ongoing

Action 20 Develop a paper for DIPWG on the display of anchorage area names and anchor berth circles. Complete/closed.

Action 21 JP to ask DIPWG to address the display and alarm functionality using Expsou=2 in S-52. Closed. .

3C Include modifications ISO/IEC 8211Encoding to cater for new S-100 constructs. HB reported that the motivation for including the change in the ISO/IEC 8211encoding structure was to accommodate changes to the General Feature Model that had been proposed by the SNPWG. The changes to the GFM were

introduced to make provision for associations to have attributes. HA proposed that some worked examples (use cases) would help illustrate new concepts. Completed

### 3D Modification to the General Feature Model.

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HB reported that the motivation for the change in the general feature model was to accommodate a request from the SNPWG for their requirements. The changes increase flexibility for associations. This applies to associations between feature types as well as for associations between information types and feature types or other information types. The revised section of S-100 – Part 10a “ISO/IEC 8211 Encoding” was attached to the 7C paper. This will be used to update the next version of S-100.

### 3E Modification of the Feature Catalogue Model.

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In order to reflect the changes in the general feature model, changes were also made to the Feature Catalogue model. HB reported that a cleanup had also been carried out to remove redundant information from the model. As a result of the changes, the new model now includes two types of associations; feature association and information association, both of which can have attributes.

### 3F Modified S-100 Feature Catalogue.

HB noted that the documents under agenda item 3F contained the XSD schema files for the new S-100 General Feature Model, Feature Catalogue and Feature Concept Dictionary which had been updated to reflect the changes discussed in agenda item 3E above.

### 3G Maintenance of S-100.

BG reported on the maintenance regime for IHO standards that was agreed at the HSSC 2 meeting and noted that this had been changed to align S-100 maintenance with other IHO standards i.e. the special dispensation for corrections and revisions (as per TR 2/2007), have been removed. HP noted that there was also a need to take into account references in IMO related standards. BG proposed that product specifications required a more rigorous maintenance regime as they will be referenced by IMO standards. He was of the opinion that subjecting S-100 to the same maintenance/ approval process as other standards will inhibit TSMADs ability to respond to new requirements. He stated that each product specification will reference a version of S-100. He proposed that the changes made by HB are revision – but these will have to go to HSSC and to MS before TSMAD can make any changes to the S-100 standard. He noted that in his opinion, being obliged to go through this process for revisions and corrections would restrict the maintenance of the standard. TM –noted that removing the special dispensation for S-100 would limit the full potential S-100. JW was of the opinion that, with respect to corrections / revisions, TSMAD should be able to make decisions on work items that need to be undertaken. The meeting agreed unanimously that, although S-100 is classified as a standard, it needs to be treated as a special case and this should be raised at the next HSSC meeting. See associated actions.

- 4A DIPWG Minutes (see DIPWG Minutes)
- 4B Status of Actions from DIPWG2 (see DIPWG Minutes)
- 5A HSSC Actions for TSMAD

BG reported that work on the new version of the Use of the Object Catalogue. On completion it will be forwarded to the IHB for distribution to Member States for acceptance.

The work on the portrayal contract is still outstanding. MH reported that the IHB are ready to finance the portrayal register however no proposals to undertake this work have been made yet.

Concerning the work to enhance the Test Data Set, BG reported that this would be finalized during the meeting and this will be reported to the HSSC3 meeting.

- 5B HSSC Actions for DIPWG (see DIPWG Minutes)

#### 6.1A Report on SNPWG Activities.

EM reported that the SNPWG 13 meeting had taken place during the previous week. The main topic of discussion was the Marine Protected Areas product specification that was being developed by SNPWG. SNPWG had decided that the MPA could have two encodings, one 8211 and one for GML. For the specification under development, it was decided to include the GML encoding. All the SNPWG models, feature, attributes and enumerations will be placed on the SNPWG WIKI until they are ready to go into the registry. Concerning the question of updating GML, EM reported that a paper had been presented to SNPWG and it was agreed that updating would not be a problem for MPA products.

#### 6.2A Report on CSPCWG activities.

JW reported that the last CSPCWG meeting was held in Simons Town, South Africa, in November 2010. A verbal report on TSMAD activities was provided to the CSPCWG meeting and some of the issues that may be of relevance to TSMAD were discussed. These included;

- A new term for Marine Rescue and Coordination Centre has been included in S-4. TSMAD21 decided that MRCC should be encoded using INFORM on the object class CGUSTA and this should be promulgated via an FAQ. Additional text on which the FAQ may be based has been included in the draft New Edition of the UOC (clause 13.2).
- Bridge supports. JW reported that it was already possible to depict bridge supports and depth detail under bridges and there are no display issues in the ECDIS.
- Cable and pipeline tunnel entrances. Currently there is no corresponding method for encoding / depicting tunnel entrances in ENC. No decision was made at TSMAD21, and further proposals may be required for both TSMAD and DIPWG.
- Disused or abandoned production platforms. No encoding action required, however DIPWG should note that there is no symbol in the Presentation Library to distinguish between a disused or abandoned production platform.

- Wave energy devices and wave farms. TSMAD21 determined that wave farms should be encoded as OSPARE areas with INFORM = Wave farm, and individual wave or current turbines as OBSTRN points with CATOBS = 6 (foul area) and INFORM = Underwater turbine or Wave energy device. This has been included in the UOC and if approved, a FAQ and an Encoding Bulletin are to be issued.
- Shellfish beds: No impact on encoding but DIPWG should note that there is no symbol in the Presentation Library to distinguish shellfish beds.

Items of Interest to TSMAD/DIPWG from CSPCWG7:

- New guidance on Zones of Confidence ZOCs are to be included in S-4. This may have an impact on ENC maintenance regarding the updating of M\_QUAL. When completed, JW will produce a TSMAD Paper and notify the Chair of the EUWG. JW also noted that there will also be a requirement to update the UOC and S-65.
- Wharf side constructions. This should not be an issue for ENC but it was relevant for the paper charts and it was suggested that this could be resolved through use of a diagram on the chart. CSPCWG are to draft revised text for S-4 B-300, and details of any amendments will be forwarded to TSMAD and DIPWG.
- Portrayal of disused lighthouses; JW reported that additional guidance has been included in the new draft UOC edition.
- Diving prohibited area symbol for paper charts. A new symbol was approved by CSPCWG. This will not have an impact on ENC encoding however DIPWG should note that there is no symbol in the Presentation Library to distinguish this.
- New guidance in S-4 for the indication of imprecise shoal depth areas on paper charts. JW is to monitor this CSPCWG action regarding possible impact on ENC encoding or presentation.
- The use of paper charts for sub-surface operations. Following a CSPCWG discussion on this subject, the WG are to include text in the introductory Section of S-4 .
- JW reported that CSPCWG proposed that a register of INT1 references should be established in the S-100 Geospatial Information Registry. See action
- Foul Area and Foul Ground: A final draft of revised S-4 wording for foul area and foul ground has been approved by CSPCWG and circulated to Member State (IHO CL 02/2011, responses by 06 April 2011). ENC FAQ and EB providing guidance on their interpretation and use have been produced. Guidance is also being included in the new UOC.
- JW reported that new specifications for the depiction of virtual aids to navigation were approved by CSPCWG and by IHO Member States for inclusion in S-4. Encoding such features in ENC is the subject of ongoing TSMAD Action.
- Small craft leisure symbols: CSPCWG proposal that small craft leisure symbols are no longer required in INT1. This was approved by MS and these new wording (with minor amendments) was approved for inclusion in S-4.

Recommendations proposed for the continued cooperative work between CSPCWG, TSMAD and DIPWG.

- That TSMAD/DIPWG continue to monitor the activities of CSPCWG, with regards to impacts on the IHO Hydro Register, S-100/S-101 - Agreed
- That TSMAD monitor the conclusion of CSPCWG discussions related to foul area and foul ground, for possible changes to the IHO Hydro Register and S-101. - Agreed
- TSMAD to monitor progress of development of new Editions of S-4 and INT1 for impact on cross references within the IHO Hydro Register and S-101. – Agreed

Ongoing activities/actions required of the Working Groups.

- Ongoing activities to resolve confusion over the terms foul area/foul ground (TSMAD).
- Possible symbol requirement for disused or abandoned production platforms (DIPWG). Proposed to use disused or ruined. No action required.
- New specification for wave energy devices and wave farms (TSMAD). See action
- New paper chart symbol for shellfish beds (DIPWG). No action required.
- New paper chart symbol for diving prohibited (DIPWG). No action required.
- Possible establishment of a Register in the S-100 geospatial Information. See action
- Amendments to INT1 references for yacht berths, yacht club, visitors berth, visitors mooring and caravan and camping sites, and removal of all other references to INT1 Section U. See action
- Possible new value for CATSPM for floating waste bins. Consider encoding it as a floating obstruction. See action
- Encoding method for sub-surface ODAS instruments. See action
- Amendment to Presentation Library Look-Up Tables for ODAS buoys to display according to the value populated for BOYSHP. Deferred amendment to the PL.
- ENC during method for floating wind turbines and wind farms. See associated action

#### 4.3A Report on DQWG activities

MH reported on the work of the DQWG and provided feedback on the questionnaire that had been developed by the WG. It has been distributed to mariners and put on the IHO web site. The results of the questionnaire are to be analyzed and discussed during the next DQWG meeting.

#### 6.4A Report on TWLWG activities

JLD reported on the activities of the TWLWG meeting that had taken place between the 5 and 7 of April 2011. Some of the items discussed included the development of a standard for digital tidal tables. This had been discussed at the 13<sup>th</sup> SNPWG meeting. TWLWG had also discussed the dynamic application of tides in ECDIS. TWLWG was agreed that this development work should focus on S-100 and not S-57 however it was agreed that the work undertaken so far was not wasted and would provide a solid foundation for further development.

The WG agreed that S-101 should include the basic tidal information, as in S-57, plus additional information on tidal zonings i.e. the area of application of the tidal information. Any further tidal aspects should be developed as separate product specifications in the S-1xx series. JLD noted that the TWLWG would need further assistance from TSMAD and DIPWG to develop such product specifications. The TWLWG will focus their initial efforts on predicted tidal information, followed by real-time tidal information.

#### 7.1A Report on IALA activities

BG reported that IALA may use the IHO registry as part of the e-Nav domain. There will be a high level meeting at the UKHO during the first week of May to discuss the way forward and future cooperation. An informal report will be provided to the next TSMAD meeting.

#### 7.2A Report on ISO/TC211 activities.

TP reported that ISO had begun the revision of many of its existing standards and TSMAD should note that the new version of the metadata standard (19115) may be relevant to S-101 work.

#### 8.1A Mariner Objects Colours (see DIPWG Minutes)

#### 8.2A Simplified vs Traditional Symbols (see DIPWG Minutes)

#### 8.3A Sector Lights (see DIPWG Minutes)

#### 8.4A Cursor Enquiry & Pick Reports [see DIPWG minutes]

#### 08.5A S-101 Use Case Themes [Powell]

JP proposed that a use case for themes should be considered for supporting the structure of pick reports for S-101. Use cases could be used to ensure that theme constructs would only be included where there is a clear user requirement for their use.

Agenda items 08.5B to 09.3A. See DIPWG3 minutes.

#### 10.1A Use of the Object Catalogue Review Report

JW provided a report on the revision of the new edition of the S-57 UOC. HSSC2 had tasked TSMAD to work on producing a new edition, after which it would be circulated to MS requesting them to approve the unfreezing of the document and the publication of the new edition. The new draft (UOC Edition 3.0) now combines the relevant guidance from published ENC FAQs and Encoding Bulletins, S-57 Supplement No. 2 document; S-65, and the S-57 Maintenance Document No 8 (only clarifications considered relevant to encoders). He reported that S-4, INT1 and S-58 were consulted during the revision process to ensure consistency between these publications

#### 10.1B Draft Use of the Object Catalogue (Edition 3)

JW provided an overview of the new UOC document (paper TSMAD22\_DIPWG3) and requested discussion / clarification on the following items;



General section. JW enquired whether a new edition of S- 65 would be required, and questioned whether the existing Encoding Bulletins would expire in due course? It was decided that the EB should be retained on the IHO web site but references to the relevant UOC clauses should be included (when the UOC is published. Furthermore, all superseded EBs should be removed at that time. It was also decided that the EB mechanism should be retained for future fixes. It was agreed that a new version of S-65 would be required and it was decided to remove the Annexes in the publication, and include references to the UOC. It was also agreed that S-58 will need to be reviewed for possible changes after which a new edition will need to be produced.

Annex A - UOC Review Comments and Actions / proposals for Further Discussion.

General - The SHOM proposal concerning the removal of geometries was agreed.

1.1 The text provided by UKHO (Although this document is open to change ...) was accepted with minor change to the first clause (... producer chooses to do so).

1.3 – UOC – It was agreed that there was not a requirement for any additional statement.

1.4 New section added on maintenance to align with the maintenance clause with S-101. Also follows TR 2/2007. This was accepted by the meeting. It was noted that [www.iho-ohi.net](http://www.iho-ohi.net) should be changed to <http://www.iho.int>

2.1.5.1 Seasonal Objects – it was decided to remove the clause.

2.1.8.1 Feature Object Identifiers – the comment by SHOM was agreed.

2.1.8.3 Topology – Comment by SHOM – it was decided to remove the clause.

2.2.5 Source of data – it was decided to remove the paragraph.

2.2.7.1 Sample SCAMIN policy – it was agreed to leave as is.

2.3 Textual information – agreed to remove the text.

2.5 Reference to other publications – UKHO comment. It was decided to leave the text but to change it to “alarms and indications” M\_NPUB is not symbolizing. It was decided to change last sentence to “... due to the overuse of CTNARE objects which covers the entire cell”.

2.6 Updating. The SHOM proposal accepted.

2.6.2 Guidelines for encoding Temporary and Preliminary ENC updates - accepted.

2.6.2.1 Introduction – UKHO SHOM comments were accepted.

2.8.2 Simplified or minimal depiction areas. - UKHO comment was accepted.

4.1 Land area. The meeting decided to remove mangrove areas because it is inconsistent with S-4. Change “sea areas” to “water areas” - Agreed.

4.7.11 Vegetation. – It was agreed to include the guidance on encoding mangrove proposed at an earlier TSMAD meeting.

4.8.10 Bridges – 4<sup>th</sup> bullet – it was decided to remove “Clarification to S-57 Appendix B.1 ñ ENC Product Specification, clause 3.5.2 table 3.2”.

4.8.14 Built-up areas – SHOM comment. It was decided to remove the bullet “In the ECDIS, the name ...”

S-57 Appendix B.1 - Annex A – It was decided to retain “Hotel” as an example .

4.8.20 It was decided to remove the paragraph “Picture files in formats other than .TIF may only ...”

Views and sketches, viewpoints – Concerning the proposal to add content from previous discussion about picture files, it was agreed that this should be included in the product specification and not in the UOC. See associated action item.

5.4 Depth areas – It was decided to include the following text - “Not currently used” (See associated action for paragraph 5).

5.5 Dredged areas. The additional text included was agreed.

5.8.3.1 Areas of omitted bathymetry. The new wording proposed by AUS was agreed.

6.2.1 Wrecks – QUASOU = 2 on wrecks – “\* For a wreck where the ..” the proposal to separated text into paragraphs for clarity was agreed. Change “populating QUASOU = 7 (least depth unknown ...” to “populating QUASOU = 7 “depth or least depth unknown ...” was agreed.

6.2.2 Obstructions, foul areas and foul ground. It was agreed that the new text “It is important when encoding ...” should to be retained. However the definition should be the text used in the object catalogue.

6.3.2 Danger line limiting an area of wrecks or obstructions. The new diagram was agreed.

6.6 Caution areas. The new wording was agreed and will form the basis of the new encoding bulletin. See associated action item.

6.6.1 Collision regulations. It was agreed to move the EB text under paragraph 11.2 and 11.5

10.2.1 Traffic separation schemes. It was agreed that this required further study and discussion. See action item.

10.2.2.1 Deep water route parts. The proposed new wording was agreed.

10.2.2.2 Deep water route centerlines. The change to the wording was agreed.10.2.4 Recommended routes. It was decided to change "... of digitising should .." to "...of digitising must ...". Furthermore it was decided to revise the new text to "In order to ensure the correct representation in the ECDIS of the direction to be followed". See associated action.

10.5.3 Archipelagic Sea Lane systems. The new text was agreed.

11.7.4 Offshore production areas. The new text was agreed.

12.1.1 Geo objects forming parts of navigational aids. - Agreed.

12.3.1 Beacons – The new text was agreed

12.8.6.1 Sector lights. All SHOM comments were agreed.

12.9 Radio stations. The changes to align with S-4 were agreed.

12.14 Automatic Identification Systems. The new section was agreed.

13.2 Coastguard stations. The new wording agreed.

15 Collection objects – Remarks – The new text was agreed.

Index – It was agreed to remove the index at the back of the publication.

BG noted that there is a need to provide a note about references to M-4 to S-4. JW is to include a paragraph referring to possible incorrect references to other IHO publications. See associated action item.

#### 10.1B\_DraftUOC\_Ed3.0.pdf)

A Draft version of the UOC Edition 3.0.0 had been distributed (document 10.3B) as part of the meeting documents for review and comment. BG requested that as soon as the changes had been included in the UOC document, a digital version should be distributed to all TSMAD members for comment. See associated action.

#### 10.2A ECDIS Test Data

BG reported that UKHO has undertaken a systematic analysis of ECDIS Display and Alarm functionality and has identified additional test cases for S-64 which could improve the consistent implementation of ECDIS alarms by OEMs. The following ECDIS Display/Alarm issues were identified;

- On certain ECDIS point features which fall directly on a line do not display and may not generate alarms.
- The use of Exposition of sounding has resulted in shoal soundings not being identified as isolated underwater dangers and therefore do not generating alarms.
- Point LNDARE - some systems implement an optional scale cut off whilst others do not check on small scales ENCs at all.

TR highlighted associated documents 10.2B Test Data Pack Ver 1.1 (ZIP file) and requested that any feedback on this paper should be provided to him.

Concerning the production of the TEST Card dataset, TR noted that this had been produced so that mariners could carry out tests to see if their ECDIS conform to the latest IHO standards. It will be made available with a questionnaire in order to get feedback about systems in use (for example - does a system have the latest presentation library).

#### 10.2B Test Data Pack Version 1.1 (ZIP file)

TR reported that the new test data set had been included with the meeting documents. He invited TSMAD and DIPWG members to review the Test Data pack and report any anomalies / suggestions to the UKHO. BG reported that explanatory documentation about the data files still needs to be developed. After this has been completed it will be submitted to HSSC3 for approval. See associated action.

#### 10.3 Overuse of Caution Areas in ENC's

TR reported that on some ENC's, large numbers of Caution Area objects make it difficult to find relevant information particularly when these Caution Areas cover the entire cell. A pick report will often display a long list of Caution Areas, and finding the desired information can be time consuming. He proposed that the following principles should be applied to ensure that Caution Areas are encoded appropriately;

- It is recommended to use other (additional) objects to encode information where possible (e.g. bridge opening times could be attached to a "Bridge" object and should not be encoded as a separate Caution Area).
- Encoders should make Caution Areas as geographically specific as possible (e.g. encode a note to provide warning of the existence of danger from overhead cables, and provide a Caution Area to cover only the area in which overhead cables exist).
- In cases where safety of information is not an issue, it is proposed to use other S-57 ENC objects such as M\_NPUB and ADMARE. Consideration should also be given to whether the information needs to be included at all.

JP and JW reported that their in-house extended UOCs provide guidance on how to minimise the use of caution areas.

#### 11.1A S-101 Project Update March 2011

JP reported that the planned approach for a phased implementing of the S-100 ENC's functionality. The plan outlines a four phases.

Phase 1: S-57 content equivalent released in Dec 2010 – out for review

Phase 2: Proposed completion date August 2011.

Phase 3: Extending the Model

Phase 4: Scalability

JP reported that this implementation would need to take account of both data and portrayal

issues and would require close collaboration between TSMAD and DIPWG. It was agreed that the proposed implementation approach needs further discussion and development, and it was suggested that this should be undertaken by a correspondence group. The following group was identified. TR to lead the group – members include; JW, GU, UK, and possibly someone from Netherlands. This action will be completed by a thorough review of the DC&EG – to be undertaken by a small sub group to identify changes to the feature and portrayal catalogues. See associated action item.

#### 11.2A S-101 Open Source Translator

JP introduces the need for an open source translator for converting S-57 ENC cells to S-101 (phase 1) cells. She noted that the development of the application was a joint ESRI / NOAA project. The source code and converter will be made freely available on the IHO web site. TR reported that a few items had been identified that needed further development. He requested further testing using more diverse data sets would be required to fully test the application and requested that members make data available for this purposes.

TDP reported that the application was developed using Visual studio C++. It also includes a text dump utility. The application will also convert updates provided they are in the same folder as the base file. The application reads an external version of the feature catalogue, and after conversion, it is possible to view the converted files in Arc GIS 9.X or 10. TR noted that there should be a standardized name for the feature catalog. See associated action item.

Some of the new file characteristics include;

- CSCALE is added to the header via the application
- Information types were not defined
- Created test information types for M\_SREL – in the test data set
- FLODOC, HULK PONTON are no longer skin if the earth.
- There is a requirement to create un-surveyed areas for these.
- It was noted that Spatial Attributes are not defined in the feature catalog. See associated action items.
- The converted cell sizes were about 5% larger after conversion to S-100 cells.

TR noted that further guidance was required concerning how to attribute SCAMIN/SCAMAX. The meeting decided that SCAMIN will be attributed as the max field value -1. Furthermore it was decided that SCAMAX will be attributed as 0.

#### 11.3A S-101 Consolidated Comments Phase 1

The following decisions were agreed during the review of the consolidated comments document.

1.3 Terms, definitions and abbreviations – the change proposed by SHOM was agreed.

3 Dataset Identification – the changes to table 1 were agreed

Language: English - the SHOM comment was agreed, however there is a need to

investigate multiplicity further.

Classification: Unclassified - it was proposed to check the possibility for other classifications.

4.2 Application Schema - replace the existing model with a reference to the model. It was decided to use the feature catalogue model.

4.3.3.1 Association – the changes proposed by Jeppesen were agreed - TR to provide the model.

4.3.3.2 Aggregation –the model has been replaced.

4.7 Geometry - SHOM proposed text was agreed. No action on the comment by AU. See associated masking action.

5.2 Horizontal Coordinate Reference System. It was decided to use the ISO registry ( EPSG) code references.

10.1.1 Encoding of Latitude and Longitude. The proposed correction was agreed.

10.1.2 Encoding of Depths. The proposed correction was agreed.

11.3.1 Datasets. Reissues were agreed for inclusion in the document. Datasets size. It was decided to use the Update dataset sizes that are recommended by the EUWG. The text recommended by France was agreed.

11.3.2 Dataset file naming – AU comments - it was decided that they should be optional. Update the text to indicate that the third to tenth characters can be used in any way by the producer.

11.6.2 Implementation – it was decided to delete the paragraph.

### 11.3B S-101 Phase 2 Product Specification

JP presented the status of the draft S-101 product specification document for the second phase of the implementation plan. She reported that a number of comments had been received from WG members and these had been marked up in the document. These were discussed during the meeting and JP will produce an updated version of the document for review.

### 11.3C S-101 Content Management Guide

JP presented document TSMAD/DIPWG 11.3A showing the general structure of the S-101 Product Specification and provided an overview of the document section, heading, content and actions that are required to complete S-101 product specification. The meeting discussed the issues that needed to be resolved or required further development – all changes were recorded by JP in the document.

### 11.4A S-101 Document Structure

JP reported that presently the ENC related documents are covered in a variety of IHO standards. Currently information regarding ENC's are covered in a variety of IHO standards (S-57, S-52, S-58, S-65, S-63 and S-64) and various IHO guidelines. S-101 should provide a single reference for all information specific to S-101 ENCs. She clarified which existing IHO documents will be incorporated into S-101, and which will remain separate entities. The meeting agreed in principal to the proposed organizational outline to S-101 documents.

Organizational Content	Remarks
S-101 Main Document	This contains all the requirements needed to create and display ENC's
Annex A (normative)	S-101 Feature Catalogue
Annex B (normative)	S-101 Portrayal Catalogue
Annex C (normative)	S-101 8211 Encoding
Annex D (normative)	Data Classification and Encoding Guide – This is intended for ENC producers and encoders
Annex E (normative)	Business Rules of S-101 – This is intended for Software Manufactures and OEM's. The intent behind this annex is to provide use cases as to how the data should behave.
Other Annexes (informative)	S-52 colour tables etc...

#### 11.5A S-101 Scale Independent and Scale Dependent Analysis

JP reported on the progress of work to investigate the issues pertaining to scale dependent and scale independent data in S-101. These are a number issues pertaining to distribution and updating that need further consideration and it was noted that tests would be required to determine whether this concept was feasible.

TR and EM provided a demonstration of SI and SD cells. TR noted that the justification for the scale independent (SI) cell approach is that it improves vertical consistency and reduces the updating burden which will benefit HOs, distributors and users. He proposed that this approach will also reduce data volumes. The main focus of this work was to identify which features should be scale dependant (SD) and which should be SI, and test the application of SCAMIN and SCAMAX such that SI/SD data would display in the same way as traditional cells in an ECDIS.

EM provided an online demonstration of some datasets provided for test purposes. HE noted that this showed potential, but further investigation was required. HP stated if this concept were to be introduced, it would have to be compulsory i.e. there should not be two approaches. If it were optional it would incur significant costs for OEMs.

KI proposed that TSMAD should carry out further tests to investigate various use cases (real world scenarios) – e.g. what types of cell would be required for route planning, coastal navigation or pilotage etc .... See associated action.

#### 11.6A S-101 Display Scale

JP presented the proposal to improve display and chart loading of ENC in ECDIS. This concept was first presented by Sweden at the 2009 TSMAD meeting. The general concept was accepted by both TSMAD and DIPWG, and is proposed for implementation in S-101 phase 2. The meeting agreed to the general provisions of the proposed wording.

The following definitions were discussed – JP to produce a new set of definitions for agreement by correspondence.

- MINDSC - the smallest scale that ENC should be displayed.
- MAXDSC - the largest scale at which the ENC could be displayed without the ECDIS giving an “over-scale” warning.
- HYPDSC - the largest scale at which the ENC should be displayed without the “over scale” pattern being displayed.

HB noted that for encoding purposes, the attributes that are associated with the display scale will need to be registered in the FCD. They will also need to be included in the PS, FC and provision will be needed to be made to include them in the ISO8211 DSID record. Business rules will also have to be developed.

Concerning the rules for chart loading in ECDIS, HP noted that this had the potential to improve the present situation however these loading rules may be over specified for manufacturers. See associated action.

#### 11.7A S-101 Data Quality

JP reported on the Data Quality Questionnaire and noted that although M\_QUAL covers bathymetry quite well, it was questionable whether there is a need for additional indicators in S-101. Other issues that need to be considered include how quality information can be better portrayed and communicated to the mariner. Further consideration also needs to be given to what other aspects need to be included for other types of metadata e.g. discovery, distribution metadata etc ..... It was decided to wait for the results of the DQWG survey before continuing this work.

#### 11.8A S-101 Exchange Set

JP reported that the Exchange Sets information included in S-101 had been taken from a combination of S-57 documents and information discussed at previous focus groups meetings.

OW noted that the portrayal catalogue should optionally be distributed with the exchange set. BG was of the opinion that the model makes provision for this and there may also be a requirement for an exchange set mechanism for distributing catalogues. It was decided to use the UKHO version of wording for paragraph 2 (S-101 datasets will...).

Concerning the sentence “An exchange set is encapsulated into a form suitable for transmission ...”, it was noted that this needs to refer to S-63. Exchange sets need to provide information about updates and reissues – i.e. a complete catalogue file.

#### 11.9A S-101 Support Files



Not tabled for discussion – carry over to TSMAD 23.

#### 11.11A S-101 Text Placement

TR reported that text placement in ECDIS often causes clutter and clashes with significant features. To reduce clutter, text can be offset or rotated without significantly impacting other features. HB noted that a better approach may be to introduce a concept of nautical orientation (bearing). RF was of the opinion that there will also be a need for priority rules for displaying text. JW noted that the encoding rules and attribution should not be overly complex for the cartographer. HP suggested that the only way to improve text clutter was to ensure that text should have its own scale range. KI also noted that this should apply to other overlays such as AIS targets. HP proposed that there is a need to consider text for INFORM for pick reports and text in another attribute for text display purposes. SK reported that Japan has uses some text placement technique, but these are only applied in critical areas. It was agreed that SCAMIN and SCAMAX on text would work as proposed in the paper. See associated action.

#### 11.12A S-101 Encoding Guide

Not tabled

#### 11.13A Update Information in S-101

TR presented two approaches for updating - both of which could support improved display of update information in ECDIS.

- The information type approach. HP supported this approach but noted that there were questions about geometry that needed consideration. Will this approach use the same geometry in the dataset (if it exists) or new geometry if required? If the geometry has changed, only the points that have changed should be highlighted. This could be an argument for themes i.e. having an update theme.
- ER file approach was the non-preferred method. See associated action.

#### 11.14A Tidal Information in S-101

Not tabled

#### 12.1A S-102 Proposed Product Specification

WL provided an overview of the latest version (Edition 1.0 – March 2011) of the draft S-102 bathymetric surface product specification, and noted that a number of modifications had been made since the last meeting. These are reported on paper TSMAD22/DIPWG3-12.1B.

#### 12.1B List of S-102 Modifications.

WL reported that a number of changes had been made to the draft S-102 product specification. These include;

It was recognized that S-102 would have to be dependent on S-101. An issues relating to the tiling scheme was identified, and this will result in a proposal to modify S-100 part 8 in order to introduce an S-100 tile scheme.

As tiling schemes are handled through the concept of a collection of S-102 products, the scheme would be defined through relationships to S100\_IG\_Collection. Section 9.2.10 was left in the document but it was proposed to discuss removing this and adding it to S-100 Part 8. The meeting agreed that this should be done. See associated action

Coverages were redefined as discrete instead of continuous. The Section "Product Specification - Fixed Metadata" was removed (this is no longer appropriate considering that coverages have been changed to discrete). See associated action. It was agreed that it should go out for wider stakeholder review following the meeting and should be included in the next TSMAD report to HSSC for endorsement. See associated action.

## 12. Any Other Business

### 12.1 INFORMATION Paper 1 – How to project ENC for use in polar regions.

CR noted that the late information paper had been presented to the NHC meeting that was held during the week prior to TSMAD 22. He explained that type-approved ECDIS must portray ENCs in a Mercator projection, but other projections are allowable provided that the mariner is informed of the projection change. He proposed that there is a requirement for ENCs to be projected in a more appropriate projection for navigation in polar regions. KI noted that there is an increasing market requirement for this. HB noted that there may be a problem if a cell covered the full polar region - including the 180 deg line. TSMAD may need to provide guidance on this. HP pointed out that S-57 and S-101 only state that ENCs should be in geographical, and how they are projected in ECDIS should be an issue for OEMs. See associated actions.

### 12.2 INFORMATION Paper 2. Discussion paper on the use of symbolization of ENC in ECDIS

CR presented the paper that outlined a potential accident between two vessels that were transiting along TSS roundabout in different directions. The traffic roundabout was displayed correctly in the ECDIS, in accordance with the S-52 Presentation Library (Ed 3.4). One of the factors contributing to the confusing portrayal could have been caused because the TSS was encoded across the border between adjacent Danish and Swedish ENC cells. The pig tail symbol was also identified as an issue as these do not correspond to the centre of the roundabout. The meeting concluded that;

- Denmark should attempt to obtain further information from the vessels involved in order to ascertain why the confusion arose from their perspective.
- In cases where TSS's need encoded in two adjacent producers cells, they should attempt to reach an agreement so that only one producer includes the entire TSS in its ENC cell. This would ensure the correct portrayal of the TSS feature in ECDIS.

See associated action.

### 12.3 Election of TSMAD Vice Chairman.

BG noted that the TSMAD Vice Chairman, Jean Luc Daniel, would be retiring and this would be his final meeting. On behalf of all members of the working group, he thanked the vice chair for the excellent contributions that he had made to the WG, and wished him a happy retirement. He informed the meeting that a TSMAD letter had been set to all members requesting nominations for a new vice chairperson, and Julia Powell had been the only nomination for the post. Julia Powell was confirmed by the meeting as the new TSMAD vice chairperson.

### 13. Review of Meeting Actions

TP reviewed the list of actions included at Annex D. These were agreed by the meeting with some minor changes.

### 14. Date and Venue of Next Meeting.

The chairman reported that, due to the restriction on having meetings within 9 weeks of the HSSC meeting, and noting that air travel is significantly more expensive in December, it was tentatively proposed to hold the next meeting during the week starting the 9<sup>th</sup> of January 2012. The proposed venue was Wellington New Zealand.

## List of Documents.

Document No		Document Title
<b>TSMAD22/DIPWG3</b>	01A rev7	Joint List of Documents
<b>TSMAD22/DIPWG3</b>	01B	Joint List of Participants
<b>TSMAD22/DIPWG3</b>	02A rev7	Joint Agenda
<b>TSMAD22/DIPWG3</b>	03A	Minutes of the 21st TSMAD Meeting
<b>TSMAD22/DIPWG3</b>	03B	Status of Actions from TSMAD21 (See documents 03C, 03D, 03E and 03F)
<b>TSMAD22/DIPWG3</b>	03C	Modifications to the ISO/IEC 8211 Encoding of S-100
<b>TSMAD22/DIPWG3</b>	03D	Modification of the General Feature Model
<b>TSMAD22/DIPWG3</b>	03E	Modification of the Feature Catalogue Model
<b>TSMAD22/DIPWG3</b>	03F	Modified S-100 Feature Catalogue (ZIP File)
<b>TSMAD22/DIPWG3</b>	04A	Minutes of the 2nd DIPWG Meeting
<b>TSMAD22/DIPWG3</b>	04B	Status of Actions from DIPWG2
<b>TSMAD22/DIPWG3</b>	05A	HSSC Actions for TSMAD
<b>TSMAD22/DIPWG3</b>	05B	HSSC Actions for DIPWG
<b>TSMAD22/DIPWG3</b>	06.1A	Report on SNPCWG activities
<b>TSMAD22/DIPWG3</b>	06.2A rev1	Report on CSPCWG activities
<b>TSMAD22/DIPWG3</b>	06.3A	Report on DQWG activities
<b>TSMAD22/DIPWG3</b>	06.4A	Report on TWLWGWG activities
<b>TSMAD22/DIPWG3</b>		IALA
<b>TSMAD22/DIPWG3</b>		ISO
<b>TSMAD22/DIPWG3</b>		IEC
<b>TSMAD22/DIPWG3</b>	08.1A	Mariner Objects Colours
<b>TSMAD22/DIPWG3</b>	08.2A	Simplified vs Traditional Symbols [Harmon]
<b>TSMAD22/DIPWG3</b>	08.3A rev1	Sector Lights [Coombes]
<b>TSMAD22/DIPWG3</b>	08.4A rev1	Cursor Enquiry & Pick Reports [Coombes]
<b>TSMAD22/DIPWG3</b>	08.5A	S-101 Use Case Themes [Powell]
<b>TSMAD22/DIPWG3</b>	08.5B	Display Categories [Le Bihan]
<b>TSMAD22/DIPWG3</b>	08.5C	Display Priorities [Le Bihan]
<b>TSMAD22/DIPWG3</b>	08.6A	Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15 [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.6B	Revised ECDIS Chart 1 (ZIP) [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.6C	Improvement of Symbolization for RESARE and LNDMRK Feature Objects [Jeppesen]

TSMAD22/DIPWG3	08.6D	Contradictions in Presentation of Navigation (Mariners') objects between IHO Presentation Library and IEC 62288 [Jeppesen]
TSMAD22/DIPWG3	08.7A	P/ECDIS Chart 1 [Harmon]
TSMAD22/DIPWG3	08.8A	Proposal to Produce a New Version of S-52
TSMAD22/DIPWG3	09.1A	Portrayal Register [Greenslade]
TSMAD22/DIPWG3	09.2A	Portrayal Catalogue [Richardson]
TSMAD22/DIPWG3	09.2B	Display Rules (xls file) (Richardson)
TSMAD22/DIPWG3	09.3A	Portrayal Documentation (ZIP) [Harmon]
TSMAD22/DIPWG3	10.1A	Use of the Object Catalogue Review Report
TSMAD22/DIPWG3	10.1B	Draft Use of the Object Catalogue (Edition 3)
TSMAD22/DIPWG3	10.2A	ECDIS Test Data
TSMAD22/DIPWG3	10.2B	Test Data Pack Ver 1.1 (ZIP file)
TSMAD22/DIPWG3	10.3A	<u>Overuse of Caution Areas</u>
TSMAD22/DIPWG3	11.1A	S-101 Project Update March 2011
TSMAD22/DIPWG3	11.2A	S-101 Open Source Translator
TSMAD22/DIPWG3	11.3A	S-101 Consolidated Comments Phase 1
TSMAD22/DIPWG3	11.3B	S-101 Phase 2 Product Specification
TSMAD22/DIPWG3	11.3C	S-101 Content Management Guide
TSMAD22/DIPWG3	11.4A	S-101 Document Structure
TSMAD22/DIPWG3	11.5A	S-101 Scale Independent and Scale Dependent Analysis
TSMAD22/DIPWG3	11.6A	S-101 Display Scale
TSMAD22/DIPWG3	11.7A	S-101 Data Quality
TSMAD22/DIPWG3	11.8A	S-101 Exchange Set
TSMAD22/DIPWG3	11.9A	S-101 Support Files
TSMAD22/DIPWG3	11.11A	S-101 Text Placement
TSMAD22/DIPWG3	11.12A	S-101 Encoding Guide
TSMAD22/DIPWG3	11.13A	Update Information in S-101
TSMAD22/DIPWG3	11.14A	Tidal Information in S-101
TSMAD22/DIPWG3	12.1A	S-102 Proposed Product Specification
TSMAD22/DIPWG3	12.1B	S-102 List of Modifications
<b>Additional relevant documents for consideration</b>		
TSMAD22/DIPWG3	INF1	Use of symbolization of ENC in ECDIS, compared with paper charts
TSMAD22/DIPWG3	INF2	Use of ENC and ECDIS in the Arctic area

## Agenda

Document Number	Document Title
1. Opening and Administrative Arrangements	
<b>TSMAD22/DIPWG3</b> 01A	List of Documents
<b>TSMAD22/DIPWG3</b> 01B	List of Participants
2. Approval of Joint Agenda [Greenslade / Harmon]	
<b>TSMAD22/DIPWG3</b> 02A	Joint Agenda for TSMAD22 and DIPWG3
3. Matters Arising from TSMAD-21 (Victoria) [Greenslade]	
<b>TSMAD22/DIPWG3</b> 03A	Minutes of the TSMAD-21 (Victoria) 2010 meeting
<b>TSMAD22/DIPWG3</b> 03B	Status of Actions from TSMAD21 (see documents 03C, 03D, 03E and 03F).
<b>TSMAD22/DIPWG3</b> 03C	Modifications to the ISO/IEC 8211 Encoding of S-100
<b>TSMAD22/DIPWG3</b> 03D	Modification to the General Feature Model
<b>TSMAD22/DIPWG3</b> 03E	Modification to the Feature Catalogue Model
<b>TSMAD22/DIPWG3</b> 03F	Modified S-100 Feature Catalogue
4. Matters Arising from DIPWG-2 (Rostock) [Harmon]	
<b>TSMAD20/DIPWG3</b> 04A	Minutes of DIPWG2 (Rostock) 2010
<b>TSMAD22/DIPWG3</b> 04B	Status of Actions from DIPWG2
5. Matters Arising from HSSC-2 (Rostock) [Greenslade / Harmon]	
<b>TSMAD22/DIPWG3</b> 05A	HSSC Actions for TSMAD
<b>TSMAD22/DIPWG3</b> 05B	HSSC Actions for DIPWG
6. Activities of Other Working Group [Greenslade]	
<b>TSMAD22/DIPWG3</b> 06.1A	Report on SNPWG Activities
<b>TSMAD22/DIPWG3</b> 06.2A	Report on CSPCWG Activities
<b>TSMAD22/DIPWG3</b> 06.3A	Report on DQWG Activities
<b>TSMAD22/DIPWG3</b> 06.4A	Report on TWLWG Activities
7. Activities of Other Organizations [Greenslade]	
8. Portrayal [Harmon]	
<b>TSMAD22/DIPWG3</b> 08.1A	Mariner Objects Colours
<b>TSMAD22/DIPWG3</b> 08.2A	Simplified vs Traditional Symbols [Harmon]
<b>TSMAD22/DIPWG3</b> 08.3A	Sector Lights [Coombes]
<b>TSMAD22/DIPWG3</b> 08.4A	Cursor Enquiry & Pick Reports [Coombes]
<b>TSMAD22/DIPWG3</b> 08.5A	S-101 Themes [Powell]
<b>TSMAD22/DIPWG3</b> 08.5B	Display Categories [Le Bihan]

<b>TSMAD22/DIPWG3</b>	08.5C	Display Priorities [Le Bihan]
<b>TSMAD22/DIPWG3</b>	08.6A	Corrections to ECDIS Chart 1 & S-52, Annex A, Section 15 [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.6B	Revised Chart 1 [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.6C	Improvement of Symbolization for RESARE and LNDMRK Feature Objects [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.6D	Contradictions in Presentation of Navigation (Mariners') objects between IHO Presentation Library and IEC 62288 [Jeppesen]
<b>TSMAD22/DIPWG3</b>	08.7A	P/ECDIS Chart 1 [Harmon]
<b>TSMAD22/DIPWG3</b>	08.8A	Proposal to Produce a New Version of S-52
<b>9. S-100 Portrayal</b>		
<b>TSMAD22/DIPWG3</b>	09.1A	Portrayal Register [Greenslade]
<b>TSMAD22/DIPWG3</b>	09.2A	Portrayal Catalogue [Richardson]
<b>TSMAD22/DIPWG3</b>	09.2B	Display Rules [Richardson]
<b>TSMAD22/DIPWG3</b>	09.3A	Portrayal Documentation [Harmon]
<b>10. ENC/ECDIS Matters</b>		
<b>TSMAD22/DIPWG3</b>	10.1A	Review of new version of the UOC [Wootton]
<b>TSMAD22/DIPWG3</b>	10.1B	Draft UOC Ed 3 [Wootton]
<b>TSMAD22/DIPWG3</b>	10.2A	ECDIS Test Data + Test Data Pack
<b>TSMAD22/DIPWG3</b>	10.3A	Overuse of Caution Areas
<b>11. S-101 Development</b>		
<b>TSMAD22/DIPWG3</b>	11.1A	S-101 Project Update March 2011
<b>TSMAD22/DIPWG3</b>	11.2A	S-101 Open Source Translator
<b>TSMAD22/DIPWG3</b>	11.3A	S-101 Consolidated Comments Phase 1
<b>TSMAD22/DIPWG3</b>	11.3B	S-101 Phase 2 Product Specification
<b>TSMAD22/DIPWG3</b>	11.3C	S-101 Content Management Guide
<b>TSMAD22/DIPWG3</b>	11.4A	S-101 Document Structure
<b>TSMAD22/DIPWG3</b>	11.5A	S-101 Scale Independent and Scale Dependent Analysis
<b>TSMAD22/DIPWG3</b>	11.6A	S-101 Display Scale
<b>TSMAD22/DIPWG3</b>	11.7A	S-101 Data Quality
<b>TSMAD22/DIPWG3</b>	11.8A	S-101 Exchange Set
<b>TSMAD22/DIPWG3</b>	11.9A	S-101 Support Files
<b>TSMAD22/DIPWG3</b>	11.11A	S-101 Text Placement
<b>TSMAD22/DIPWG3</b>	11.12A	S-101 Encoding Guide
<b>TSMAD22/DIPWG3</b>	11.13A	Update Information in S-101
<b>TSMAD22/DIPWG3</b>	11.14A	Tidal Information in S-101
<b>12. Any Other Business</b>		

<b>TSMAD22/DIPWG3</b>	INF1	Use of symbolization of ENC in ECDIS, compared with paper charts
<b>TSMAD22/DIPWG3</b>	INF2	Use of ENC and ECDIS in the Arctic area
13. Review of Meeting Actions [Greenslade / Harmon]		
14. Date and Venue of Next Meeting		
15. Close of Meeting		



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### List of Action Items.

No	Agenda	Action	
	3.F	Prepare a paper for the HSSC 3 meeting proposing that S-100 should have a special dispensation with respect to revisions and corrections to the standard.	BG
	3.F	TSMAD members are to discuss the case for reinstating a special dispensation for maintaining S-100 with respect to revisions and corrections to the standard.	all
	6.2A	Draft a paper for the TSMAD23 meeting proposing that a register for INT1 references be established in the S-100 Geospatial Information Registry.	JW
	6.2A	Develop an encoding bulletin and UOC guidance to help resolve confusion concerning the use of foul area / foul ground.	JW
	6.2A	Develop an encoding bulletin and UOC guidance outlining how to encode wave energy devices and wave farms.	JW
	6.2A	Prepare a paper for the next CSPCWG meeting regarding the registration of INT 1 reference numbers with a view to ensuring that discontinued numbers will not be reused.	JW
	6.2A	Develop an encoding bulletin and UOC guidance explaining the implications of CSPCWG amendments to INT1 references to small craft entries (yacht berths, yacht club ...) and the removal of all other references to INT1 Section U.	JW
	6.2A	Develop an encoding bulletin and UOC guidance for encoding CATSPM for floating waste bins. (JW)	JW
	6.2A	Develop an encoding bulletin and UOC guidance to provide guidance on the encoding of sub-surface ODAS devices.	JW
	6.2A	Develop an encoding bulletin and UOC guidance outlining how to encode floating wind turbines and wind farms.	JW
	6.2A	Develop a paper (for TSMAD 23) proposing how picture files should be formatted for optimal use in ECDIS systems.	RF
	6.2A	Circulate the rewrite of the entire paragraph 5 to review group for comment – response period of 1 week.	JW
	10.1B	Produce a paper for TSMAD 23 on Traffic separation schemes for inclusion in the next edition of the UOC.	JW
	10.1B	Provide information to IHB concerning the incorrect encoding of recommended routes (i.e. coordinate direction). Include information on how this could lead to safety related issues. There is also a requirement to identify other similar encoding issues and document	JW

		these with recommended actions that should be followed.	
	10.2A	Test Card to be sent out to OEMs for review.	TR
	10.5.3	Include all edits resulting from the meeting discussion, and the send out a revised version of the UOC to all TSMAD members for comment - (1 month for responses).	JW / TP
	10.2B	Complete the explanatory documentation for the Test Data Pack Ver 1.1 and prepare a submission for HSSC 3.	TR
	11.1A	A correspondence group is to be established to investigate the tasks identified in the presentation by JP on the phased approach for implementing the full functionality of S-100 ENC's Phase 2. TR to lead the correspondence group. (Members JW, TR, GU, (Netherland - possibly). JP to circulate items in the presentation to corresponding group members.	JP/TR
	11.2A	TR is to provide TD with an S-101 conformant feature catalogue name for the conversion SW pack. TD to incorporate new FC name into the next version of the converter application.	TR / TD
	11.2A	TR is to distribute a list of fields that are missing from the converter application to members of the distribution list for verification. Once verified, TR is to add these to the feature catalogue as outlined by HB during the meeting. HB to provide the distribution list members with a recommended solution for making this machine readable so that is can be added to S-100. Distribution list: Julia Powell; Holger Bothien; Hugh Astle; Ed Kuwalek Tom Richardson; Greenslade Barrie.	TR HB
	11.2A	Spatial attributes have not been included in the FC, and information types for both QUAPOS and POSACC therefore need to be added.	TR
	11.3A	Produce a new diagram for inclusion in S-101 to illustrate how masking works.	TR
	11.5A	Continue the investigation on Scale Dependent and Scale Independent cells - taking into account comments and feedback provided by the working group.	TR / EM
	11.6A	The implementation rules for chart loading in ECDIS are to be re-edited and distributed to TSMAD members for comment. After approval they are to be included in the business rules section of S-101 - Phase 2.	JP
	11.11A	Carry out further study on text placement for portrayal in ECDIS – paper to be produced for TSMAD 23.	TR, TM, KI, HA, HP,

			OW
	11.13A	Based on the decision that the <b>feature type</b> approach (with geometry and themes) was the best way to convey update information in S-101 ENC's / ECDIS, a further study needs to be carried out and reported to TSMAD 23.	TR
	12.1A	Distribute S-102 for wider stakeholder community review.	WL
	12.1A	BG to add the S-102 product specification to the TSMAD report to HSSC3, for endorsement.	BG
		Develop a paper (for TSMAD 23) proposing how picture files should be formatted for optimal use in ECDIS systems. For FAQ	RF
	INFO1	Get data covering a polar area for testing and for eventual inclusion in the TDS.	BG