

5th CSPCWG MEETING
Sydney, 18-21 November 2008

Paper for Consideration by CSPCWG

Report to CSPCWG5 on TSMADWG Activities

Submitted by:	Australia (Jeff Wootton)
Executive Summary:	Report on TSMADWG Activities Since CSMWG4.
Related Documents:	Minutes TSMAD15, TSMAD16 and TSMAD17
Related Projects:	None

Introduction / Background

The IHO Transfer Standards Maintenance and Application Development (TSMAD) Working Group is a Working Group of the IHO CHRIS. Its primary objectives are to:

- Maintain the IHO Transfer Standard for Digital Hydrographic Data (S-57).
- Develop, maintain and extend the new IHO Geospatial Standard for Hydrographic Data (S-100), including management and maintenance of the IHO Hydrographic Feature Data Dictionary, and development and maintenance of the new ENC Product Specification (S-101).
- Monitor the development of other related international Standards.

Since CSPCWG4, TSMAD has held 3 meetings:

- TSMAD15 at IHB, Monaco – 14-18 January 2008;
- TSMAD16 in Cape Town, South Africa – 05-09 May 2008;
- TSMAD17 in Seattle, USA – 08-12 September 2008.

The main focus of these meetings was the ongoing development of the draft Standard S-100, and the commencement of the development of the new ENC Product Specification S-101. The following is a summary of the activities of these meetings, with particular emphasis on activities that may be of relevance to CSPCWG. Minutes of the meetings may be found on the TSMAD page of the IHO web site.

Analysis / Discussion

TSMAD15: The principle agenda item for this meeting was the completion of the draft version of S-100 so that it could be published for evaluation purposes. Consequently, the meeting was broken up into 3 sub-groups. Group 1 addressed existing TSMAD issues including the review of national proposals, ENC Encoding Bulletin actions, review of completed components of S-100, development of use cases for the new S-100 Information Type and Complex Attributes, and investigating possibilities for solving S-57 workarounds in S-100. Groups 2 and 3 divided the incomplete S-100 components between them and, on completion of each component, forwarded it to Group 1 for review. The following issues that are of interest to CSPCWG were discussed:

- S-57 Object Classes not symbolised on ECDIS (*TSMAD15-6.1A*): A number of S-57 Object Classes (when encoded using certain allowable primitives and in some cases certain attribute values) do not display on ECDIS. Opinions raised during discussion ranged from all encoding should be displayed (if a HO feels that it is important enough to encode, then it should be important enough to be displayed) to maintaining the current display (these objects when encoded using these primitives are not important to navigation). The group addressed each Object Class individually, and determined whether the feature should be displayed or not displayed. It was agreed that the resultant recommendations be submitted to the next CSMWG meeting for further action.
- Report on CSPCWG4 (*TSMAD15-6.2*): The following points of interest were discussed by the meeting:
 - Mangrove areas: The meeting agreed that the encoding of mangrove areas in intertidal areas was allowable in S-57, and should be carried through to S-101.

- Offshore renewable energy installations: An ENC Encoding Bulletin is to be compiled giving guidance on encoding these features on ENC's.
- Procedures for new and revised routing measures: As well as discussions by CSPCWG, this issue had also been discussed previously by the JTEWG and TSMAD, and was the subject of a draft ENC Encoding Bulletin.
- Letter from Tidal Committee: It was decided that no further action be taken by TSMAD until at least the TR is approved by MS.
- INT1 – K31 (fouls): TSMAD agreed that there is an inconsistency in the Standards between the definition for obstruction (OBSTRN) and including the value CATOBS = 7 (foul ground) as an enumerate, resulting in a conflict between S-57 and M-4.
- Report to TSMAD regarding the review of M-4 (*TSMAD15-6.3*): This paper, and all other papers submitted by Chris Roberts for TSMAD15, were only minimally addressed due to the focus of the meeting on the completion of the draft S-100. It was decided that all issues relating to new features in M-4 were to be evaluated by the ENC Encoding Bulletin Sub-Working Group coordinator for possible ENC Encoding Bulletin action, and that the coordinator be the POC for future CSPCWG Letters (info to TSMAD Chair). It was also decided that the issues raised by the “M-4 detailed changes for S-100” spreadsheet would need to be considered by a sub-group of TSMAD for possible proposals for the S-100 Hydrographic Register, and AU would continue to update the spreadsheet for future CSPCWG and TSMAD meetings. It was also agreed that the TSMAD Chair would raise the possibility of a coordinator role within the IHB for all the CHRIS WG's, as the Chairs of these WG's only meeting once a year was not considered to be sufficient.
- ENC Encoding Bulletins (EB): During the meeting, the following ENC EB's were approved for release and published on the IHO website:
 - EB15/FAQ14 Linear Maritime Jurisdiction Features
 - EB16/FAQ15 Disputed EEZ
 - EB17/FAQ16 AIS in ENC
 - EB18/FAQ17 180° Meridian of Longitude
 - FAQ18 DGPS Station
 - EB19/FAQ19 IALA Emergency Wreck Buoy
 - EB20/FAQ20 Use of Underscore in ENC Cell Names
 - EB21 External Text Files in National Language

The ENC Encoding Bulletin Sub-Working Group coordinator reported that there are still a number of EB Actions outstanding, including an EB related to the changes to M-4 regarding the specifications for the depiction of wrecks, which has been causing some issues with members of the Sub-Working Group.

- Additional Group 1 activities: A brief review of the Hydro content of the S-100 Feature Data Dictionary was done, with discussions on items with no definitions (consisting mainly of the “category of” attributes) for which a definition was required, candidates for retiring and re-defining of structured attributes to date types, complex or structured text attributes. The group held a brain-storming session to develop use cases for complex attributes, with some useful work being done, but better scoping required. An attempt was also made to evaluate the TSMAD Deferred Actions List for possible candidates for proposals for S-100, but this was abandoned in favour of an action for the TSMAD Chair to promulgate a TSMAD Letter requesting all TSMAD members that had submitted papers that are on the TSMAD Deferred Actions List to re-evaluate their proposals for possible submission as an S-100 proposal.

The meeting concluded with both TSMAD and the IHB satisfied that sufficient progress had been made on the draft S-100 to ensure publication by early March 2008.

TSMAD16: The main focus of this meeting was the development of the S-101 ENC Product Specification within S-100. There was also an effort made to collate all actions from TSMAD14 and TSMAD15 and discuss progress on these actions as the focus on the completion of S-100 at TSMAD15 resulted in no discussion on outstanding actions at that meeting. The meeting was also conducted in conjunction with CSMWG18, therefore there were a number of CSMWG delegates and industry representatives at TSMAD16. It was agreed at the conclusion of the week that the more diverse expertise and opinion of the combined group was a bonus to the meeting. The following issues that are of interest to CSPCWG were discussed:

- World wide grid system of ENC's for Navigation Purpose 1 and 2: It was suggested that world-wide small scale ENC coverage in the Navigation Purpose 1 and 2 bands could be administered by

the IHB (similar to the way INT paper charts are administered by the IHB) and based on a grid system. Further investigation is required through the IHB, RHCs and the issue could be raised at CHRIS20.

- Temporary and Preliminary Notices to Mariners: Application of T & P NtM's as Updates to ENC's had been raised at the last JTEWG meeting as there is inconsistency between HOs as to how they are handled, and it has become the major issue reported to the RENCs by end users. Some HOs apply all T & P to their ENC's as Updates, some HOs apply selected T & Ps only and some HOs do not apply them at all. It was decided that this needed to be investigated further and a consistent approach adopted. Liaison with CSPCWG was also suggested considering the development of the new maintenance section of M-4.
- SCAMIN (*TSMAD16-5.1*): Within the S-57 ENC Product Specification, the inconsistent use of the attribute SCAMIN on ENC's has proven to be one of the most difficult problems to resolve. Various attempts have been made by TSMAD to implement a recommended practice for the population of SCAMIN, but this has proved to be extremely difficult as the Product Specification does not mandate the use of SCAMIN (therefore a HO cannot be forced to use it), and those HOs that use SCAMIN have adopted their own rules, which would cause a significant resource problem if they were forced to change to a standard rule. The main recommendation of this paper was the consideration of having SCAMIN application handled at the display end of the process, i.e. having SCAMIN applied to features by the ECDIS system. The general consideration of the meeting was that taking control of when an object is displayed in ECDIS out of the hands of the HO and putting it in the hands of the ECDIS manufacturers was not a good idea. It was interesting to note that the Baltic Sea Regional Hydrographic Commission had established an ENC Harmonisation Working Group (BSEHWG) to address ENC consistency issues (including SCAMIN) amongst the Baltic States. The final report of the BSEHWG would be published soon, and all TSMAD members were encouraged to read the report.
- S-100 Feature Data Dictionary: It was reported that the IHO Hydro Register would soon be opened for new proposals. The intention of the initial content of the FDD was only those features, attributes and enumerates that exist in S-57. Any new features, attributes and enumerates are to be proposed to the Register as a maintenance operation, thereby preserving the history of the proposal. This includes all extensions to S-57 Ed 3.1.
- S-100/S-101 Wiki/Forum: It was decided to establish forums for S-100 and S-101 utilising Google Groups to promote correspondence discussions between TSMAD meetings. The forums would be coordinated by the IHB.
- S-101 Stakeholders User Requirements Workshop (*TSMAD16-7.1*): The workshop was held in March 2008, and was seen to be an extremely productive exercise. The main issues addressed at the workshop and tabled for discussion at the meeting were:
 - Implementation of dynamic tides: Stakeholders would like to see dynamic tides implemented – to be discussed by CSMWG (later discussions indicated that this may be a separate Product Specification in S-100).
 - S-101 Discovery Metadata: This should replace the information currently in the ENC Exchange Set Catalogue File, and contain additional information to aid the mariner.
 - 5MB cell size: This may need to be relaxed. Requires further investigation.
 - Navigational Purpose: For S-101 ENC's, Navigational Purpose would be retained for catalogue and data discovery purposes only. ECDIS load priority for S-101 ENC's would be determined by Compilation Scale.
 - Compilation Scale: The meeting agreed to adopt the existing list of radar range based scales, as per the ENC consistency proposal circulated in IHO CL 108/2007, as the Compilation Scales for S-101 ENC's. It was suggested that an additional large scale would be required for berthing cells.
- S-101 ENC Product Specification: Discussions related to:
 - Thematic layers: S-57 does not make use of the concept of layers for grouping various types of content within an ENC (there is only Group 1 (Skin of the Earth) and everything else is Group 2).
 - Scale independent and scale dependant data layers. This may reduce the multiple encoding and multiple updating burden on HOs.
 - Data Capture and Classification Guide: This will be the replacement document for the S-57 Use of the Object Catalogue for ENC in the S-101 Product Specification.
- ENC Encoding Bulletins (EB): The following ENC EB was approved for release and published on the IHO website:

- EB22/FAQ21 Content of the Exchange set
- The following ENC EB's were discussed by the ENC Encoding Bulletin Sub-Working Group during the meeting, with further work required to be done:
- Traffic Separation Schemes (promulgation of changes to routing measures).
 - Soundings (population of EXPSOU on soundings).
 - Bathymetry in areas of minimal depiction of detail on paper charts.
 - Sector lights (PEL – High Precision Oscillating Directional lights(?)) **CSPCWG to note.**
 - Wrecks (resulting from M-4 changes).
- A joint meeting was then held by TSMAD and CSMWG, prior to CSMWG18. Detail of this meeting that are relevant to CSPCWG is contained in the Report on CSMWG Activities.

TSMAD17: The main focus of this meeting was to evaluate and address the consolidated IHO MS review comments for the draft S-100, with the aim of publishing Version 1.0 of S-100 in mid-2009. The meeting also progressed the development of the S-101 ENC Product Specification. The following issues that are of interest to CSPCWG were discussed:

- The BSEHWG report (as mentioned at TSMAD16) was tabled for information.
- CATZOC proposal (*TSMAD17-6.1*): Concerns were raised as to the defining characteristics of ZOC A1 and A2 coverage being too restrictive, resulting in some nations being reluctant to use these categories. The recommendation in the paper was to amend the wording from “All significant seafloor features detected and depths measured” to “Most significant seafloor features detected and depths measured”. Concern was raised as to defining “most”. It was decided to refer all recommendations from the paper to the next informal meeting of the DQWG.
- T & P Notices to Mariners (*TSMAD17-7.1*): This paper was presented for information and expands on the discussion at TSMAD16 on inconsistent application by HOs of T & P NtM's. The paper is to be submitted to CHRIS20.
- S-100 Committee Draft meeting: This meeting consumed 2 full days of TSMAD17 and involved the evaluation of the consolidated IHO MS review comments for the draft S-100. The evaluation was completed and most of the issues raised dealt with during the meeting or by break-away groups.
- Governance and management arrangements for the IHO information registry (*TSMAD17-8.4*): This paper was presented for information and attempts to highlight some of the impacts on IHO resources and proposes management arrangements required for the IHO Geospatial Infrastructure Information Registry. The paper is to be submitted to CHRIS20.
- S-101: Discussions centred on:
 - Refining the scope of S-101, given some of the discussions held at previous TSMAD meetings (thematic layers, scaleless ENCs, complex attributes etc.).
 - Project plan: Identification of known issues that need resolving and assign actions accordingly.
 - Deficiencies in S-57: Identifying deficiencies and develop proposals on how they can be remedied.
 - Refinement of the use of the S-100 and S-101 Wiki/Discussion Forums.
 - Distribution and Metadata.
 - Data Capture and Classification Guide. It was suggested that the fundamental nautical cartographic rules for compiling ENCs be incorporated in the Guide, so that encoders do not need to go to a difference product specification (i.e. M-4) to find them. This requires further investigation and discussion. A new Wiki Group is to be established to focus on the development of the Guide.
- Publication of S-100: It is the intention of the TSMAD Chair to submit the final draft of S-100 to the Extraordinary IHC in June 2009 for MS vote at the meeting, as progressing a vote via IHO Circular Letter may get insufficient MS involvement.
- Next meeting: TSMAD18 will be held in Ottawa, Canada and hosted by CHS in May 2009, in conjunction with CSMWG19.

Conclusions

Continued liaison between CSPCWG and TSMAD is a necessity in the ongoing review of M-4 and the development of S-100 and S-101.

Recommendations

Further discussions by CSPCWG may be required on a suitable term to replace PEL in M-4.

Justification and Impacts

No major impacts on CSPCWG projects arise from this report.

Action required of CSPCWG

The CSPCWG is invited to:

- a. endorse this report.
- b. note issues within the report of interest to CSPCWG.