11th CSPCWG/1st NCWG Meeting
Rostock, Germany, 27-30 April 2015

Paper for Consideration by CSPCWG/NCWG

Report to CSPCWG11 on TSMAD Activities

Submitted by:	CSPCWG Chair
Executive Summary:	Report on TSMAD Activities Since CSPCWG10.
Related Documents:	1. Minutes TSMAD28/DIPWG6; TSMAD29/DIPWG7; 2. HSSC6-05.1A – TSMAD Report
Related Projects:	S-4/INT1 Development and Maintenance

Introduction / Background

The IHO Transfer Standards Maintenance and Application Development (TSMAD) Working Group was a Working Group of the IHO HSSC. Its primary objectives were 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 S-100 Geospatial Information Registry, and development and maintenance of the new ENC Product Specification (S-101), including the S-101 Feature and Portrayal Catalogues.
- Monitor the development of other related international Standards.

Since CSPCWG10 TSMAD had held two meetings:

- TSMAD28 in Sydney, Australia – 31 March – 04 April 2014 (in conjunction with DIPWG6);
- TSMAD29 in Ottawa, Canada – 02-06 February 2015 (in conjunction with DIPWG7).

Additionally, the following TSMAD Sub-Working Group meetings and workshops were held:

- TSMAD DCEG Sub-WG Meeting: 27-28 March 2014, Wollongong, Australia.
- TSMAD S-100/S-101 Test Strategy Meeting: 16-18 September 2014, Arlington, USA.

The TSMAD29 meeting was the final meeting of the TSMAD, which has been replaced by the S-100WG and the ENCWG as a result of the HSSC re-structure of its technical Working Groups.

Analysis / Discussion

Documents published since CSPCWG10:

- S-57 Appendix B.1, Annex A – Use of the Object Catalogue for ENC (Edition 4.0.0) (IHO CL 46/2014 refers).
- S-57 Supplement No. 3 (IHO CL 46/2014 refers).
- S-58 – Recommended ENC Checks (Edition 5.0.0) (IHO CL 46/2014 refers).
- S-64 – IHO Test datasets for ECDIS, Edition 3.0.0 (IHO CL 81/2014 refers).

In addition, the following documents have been submitted to HSSC6 for approval to proceed to IHO Member State vote for adoption:

- S-100 – Universal Hydrographic data Model (Edition 2.0.0) – IHO CL 19/2015 refers.

Discussion Topics of the TSMAD of interest to CSPCWG/NCWG since CSPCWG10:

- S-100: Edition 2.0.0 includes numerous clarifications, corrections and extensions intended to accommodate the requirements of new S-100 based Product Specifications. The major extension for this Edition is the inclusion of Part 9 – Portrayal Model.

  Initial test cases have been developed for implementation in S-100 test beds. These test cases have been developed principally for the implementation of S-101 Feature and Portrayal Catalogues and S-101 datasets in an S-100 ECDIS, but by extension will be expanded to include interaction with other S-100 based Product Specifications.

  The S-100 Geospatial Information Registry will continue to be managed by UK; however the IHB will

investigate the implementation of a Registry Manager role at the Bureau during 2016. The HSSC also endorsed the proposal of TSMAD for a Registry based procedure for the allocation of S-100 Product Specification identifiers, which will require an amendment to S-99 – Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry (refer HSSC6-05.1B).

It has been noted by IALA that S-100 does not currently cater for data streaming. IALA is expected to submit a proposal for the next edition of S-100 to include an encoding format for data streaming.

- S-101: The draft S-101 ENC Product Specification documentation was "baselined" in April 2014, allowing for the development of draft S-101 Feature and Portrayal Catalogues; and development of S-101 datasets for use in S-100 test beds. In order to facilitate the creation of the Feature Catalogue, KHOA has done a significant amount of work in developing a Feature Catalogue Builder; while the development of a Portrayal Catalogue Builder has been progressed by IHB contract.

  The TSMAD/S-101 Project Team continues to liaise with the DQWG to develop a new data model for bathymetric data quality in S-101 ("CATZOC replacement").

  As a result of the proposed CSPCWG changes to S-4 and INT1 in regard to maintained/dredged areas, a review of some of the enumerate values for the Quality of Sounding attribute will be required.

  Discussion took place at TSMAD29/DIPWG7 regarding maximum authorized draught and a proposal from Italy that this information may be shown in lieu of physical bathymetry. This will be covered as a separate agenda item at CSPCWG11/NCWG1.

  As part of a discussion on methods of improving consistency between the S-101 Data Classification and Encoding Guide and the S-101 Feature Catalogue, ROK gave a demonstration of the latest version of its "Digital Reference Tool for Cartographers". This is the subject of a separate Information Paper at CSPCWG11/NCWG1.

  The planned operational release date for S-101 as included in the S-101 Roadmap is the end of 2018, however this is considered to be a "best guess" considering the amount of work that remains to be done.

- S-102: An update to the S-102 Bathymetric Surface Product Specification is required to incorporate changes to the Bathymetric Attributed Grid (BAG) Specification which forms the basis for S-102; and to extend the Product Specification to include S-102 portrayal.

- S-112: The first draft of S-112 – Dynamic Water Level Data Transfer Product Specification, was presented at HSSC6 and subsequently at TSMAD29/DIPWG7. This draft has been prepared by the UKHO with the assistance of MPA Singapore, utilising practices used within the Malacca and Singapore Straits Marine Electronic Highways project. The intention is to utilise an application-specific AIS message broadcasting meteorological and oceanographic specific information, part of which is water level information, to supply tidal polygon correction information as measured in real-time. Further work is required, in terms of both the draft S-112 and S-100 itself, and it is expected that this will form a significant part of discussions at the next TWCWG meeting. It is intended that this Product Specification could be used in both S-57 and S-100 ECDIS.

- S-57: New ENC Encoding Bulletins have been issued to address:
  - Encoding lights on emergency wreck marking buoys (clarification);
  - Encoding seasonality where the start or end of the period is defined as the "last day in February" (clarification);
  - "Holes" in ENC coverage where a larger navigation Purpose ENC exists (clarification);
  - Encoding IMO Areas to be Avoided (ATBA) (clarification).

  It is considered that the issues addressed in these Encoding Bulletins do not impact on S-4 or INT1.

  Guidance on encoding the equivalent of paper chart (T) and (P) Notices to Mariners has been strengthened in the latest draft Use of the Object Catalogue for ENC. Further discussion related to this is the subject of a separate Paper for CSPCWG11/NCWG1.

- S-58: Edition 5.0.0 includes what is considered to be a "minimum validation check standard" to which all ENC must conform to be considered to be suitable for use in ECDIS.

  A Revision (5.1.0) of S-58 is in preparation to address some consistency issues that were identified after publication of Edition 5.0.0. It is intended that S-58 Edition 5.1.0 will be published prior to, and enter into force concurrent to, publication of the New Edition of IEC 61174 - Marine Navigation and Radiocommunication Equipment and Systems – Electronic Chart Display and Information Systems (ECDIS) – Operational Performance Requirements, Methods of Testing and Required Test Results. This will be subject to IHO Member State approval.

- S-64: As for S-58, a Revision (3.1.0) is in preparation to address some minor omissions and inconsistencies. Also as for S-58, it is intended that S-58 Edition 5.1.0 will be published prior to, and enter into force concurrent to, publication of the New Edition of IEC 61174.

- CGHR Outcomes: The Correspondence Group on HSSC Restructure (CGHR) recommendations, as approved at HSSC6, saw the replacement of the TSMAD with the S-100WG and the ENCWG. As a result, TSMAD29 was the final meeting of the TSMAD. Elections for the Executive for the new Working Groups were held, and confirmation of commitment of Member States to the Working Groups as indicated in responses to IHO CL /2014 obtained (with amendments). The Executives of the new Working Groups are:
    - S-100WG: Chair – Julia Powell (US); Vice-Chair – Yong Baek (ROK); Secretary – Eivind Mong (Jeppesen Marine).
    - ENCWG: Chair Tom Mellor (UK); Vice-Chair – Vacant; Secretary – Tony Pharaoh (IHB).

  It is anticipated that the NCWG will work in close association with the ENCWG and the S-101 Project Team (S-100WG). It was stressed that members of other HSSC Working Groups would be welcome to participate in the S-101 Project Team if they are interested.

Conclusions

None.

Recommendations

Liaison between NCWG and S-100WG/ENCWG is a necessity in order to address emerging navigational requirements in a multi-product environment.

Justification and Impacts

No immediate impacts on NCWG projects arise from this report.

Action required of CSPCWG/NCWG

The CSPCWG is invited to:

a. **Note** this report.

b. **Note** issues within the report of interest to NCWG.