HSSC2-05.1A

2nd HSSC MEETING
Rostock 26-29 October 2010

Report of the TSMADWG to HSSC 2

Transfer Standard Maintenance and Application Development Working Group

Submitted by:	Chairman, TSMADWG
Related Documents:	List of Actions from CHRIS20, CL 36/2009, HSSC2-05.1C
Related Projects:	NA

Chair:	Barrie Greenslade, UKHO
Vice Chair:	Jean-Luc Deniel, SHOM
Secretary:	Anthony Pharaoh, IHB
Member States:	Australia, Brazil, Canada, Denmark, Finland, France, Germany, Japan, Republic of Korea, Netherlands, Norway, Republic of South Africa, Sweden, United Kingdom, United States of America.
Expert Contributors:	The International Centre for ENCs (IC-ENC), PRIMAR Stavanger, Caris, ESRI (USA), Furuno (Finland), GEOMOD (France), Jeppesen Marine, HAS Systems (Australia), IDON Technologies (Canada), IIC Technologies (Canada), SevenCs (Germany), TKartor (Sweden), and Transas (Russia).

1 Meetings Held During Reporting Period

a. TSMAD 19 26-30 Oct, 2009, Sydney
b. 2nd S-101 Stakeholders Workshop 9-11 March 2010, Taunton
c. TSMAD 20 3-7 May, 2010, Rostock (joint meeting with DIPWG)
d. TSMAD S-101 Sub-WG Meeting 17-19 Aug, 2010, Taunton

2 Work Program

Progress continues on the work items assigned by HSSC as follows:

2.1 S-100

S-100 Edition 1.00 was published in January 2010. It is anticipated that a new version 2.0.0 will be prepared in 2011 to add the content of Part 9 (Portrayal), amend the maintenance procedure and make minor corrections and clarifications as a result of the ongoing development of S-101.

2.2 S-101 ENC Product Specification

S-101 is the new Electronic Navigational Chart product specification that is based on S-100. The intent of S-101 is to utilize the flexibility of S-100 to allow the IHO and Member States to respond to the changing needs of the mariner. S-101 will include machine readable feature catalogues and portrayal catalogues that will facilitate updating of changes to shipboard systems.

2.2.1 S-101 Progress

A final draft of the text for Phase 1 of the S-101 project will be finalised at TSMAD 21 in November following the editing session which took place during S-101 Focus Group meeting in August

Phase 1 includes the following:

- XML Feature Catalogue which mainly contains current S-57 features and attributes plus a small number complex attributes.
- XML Portrayal Catalogue which will mainly contain the equivalent to S-52 PL 3.4.
- Use of the new version of the ISO/IEC 8211 based encoding.
- S-57 to S-101 converter.
- Deliverable: S-101 .000 file and updates (no catalogue).

The XML Feature Catalogue has been constructed using web based software which enables the catalogue to be built using items from the IHO GI Registry database. The catalogues are, in turn, stored in a database and can be edited and new versions exported in XML as and when required. This will soon be made available for testing.

The XML Portrayal Catalogue has been delayed due to the slow progress of ISO 19117. However this standard is now nearing completion and is stable enough for DIPWG to have completed the draft models for the Portrayal domain of the IHO GI Registry and the XML portrayal catalogue. The intention is to now develop the portrayal domain in the registry and the equivalent to the feature catalogue builder.

The S-57 to S-101 converter is being developed by ESRI (USA) under contract to NOAA, and an open source version will eventually be handed over to the IHO for universal use.
The converter is probably the most important part of the S-101 Phase 1 package because not only will it enable the production of test data, it will expedite the transition from S-57 to S-101 in the production and ECDIS environments.

The focus group discussed the urgent requirement to develop a test bed for S-101. The minimum requirement would be a viewer capable of importing data, the catalogue XML files and testing the new portrayal including the new improved pick report requirements. This would enable better quality test data for distribution to OEMs and eventually be used to demonstrate the advantages of the later phase S-101 content to users and encourage essential feedback.

2.3 S-58

A new edition of S-58 has been produced, primarily to provide modified checks to test the encoding of EXPSOU (exposition of sounding) as a result of issuing Encoding Bulletin 27.

Consequently, S-58 Edition 4.2 corrects tests 1768 and 1769, and removes test 1796. Other feedback received since edition 4.1 has also been discussed, and if agreed, required changes have been included in this new edition.

2.4 S-10X Hydrographic Survey Product Specification and S-10X Product Specification for Auxiliary Informational Layer Integration

In the past year significant progress has been made since the acceptance into the TSMAD Work Program of the S-10X Product Specification for Auxiliary Informational Layer Integration at HSSC1. The US and Canadian project leaders of the two work items have liaised to produce a new draft of each specification. The drafts are currently being reviewed by TSMAD members.

2.5 Generic Template Product Specification for Marine Information Overlays

Work is ongoing. Information gathering discussions took place at the 2nd S-101 Stakeholder Workshop and development of S-101 is proving a useful resource. There is also a dependency on the projects described in 2.4 above.

3 TSMAD Outreach

3.1 2nd S-101 Stakeholder Workshop

An industry wide attendance discussed various subjects based on a S-101 draft using the concepts developed from the “green field” approach taken at the first workshop. The report of this workshop can be found at http://www.iho-ohi.net/mtg_docs/industry/s-101_workshop_10/index.htm

3.2 ISO TC211

The ISO 19100 standards have been used as the base standards for the development of the S-100 Universal Data Model and the IHO GII Registry, and are relevant to the standards development work of TSMAD. Since the HSSC1 meeting ISO Technical Committee 211 convened meeting in Quebec City, Canada (2-6 November 2009) and Southampton, United Kingdom, (24-28 May 2010). Other bodies that are actively engaged in the work of ISO/TC 211 include national standardization organizations, the OpenGIS Consortium (OGC), several international bodies and United Nations (UN) agencies. TC211 presently comprises 32 Participating (P) members, 31 Observing (O) members and 50 liaison members.

Since the HSSC1 meeting, the following new projects of relevance to IHO standards development work were registered

19101 Geographic information — Reference model
19160 Addressing
19159 Calibration and validation of remote sensing imagery sensors and data
19130-2 Imagery sensor models for geopositioning — Part 2: SAR, InSAR, Lidar and Sonar
19135-2 Procedures for item registration — XML Schema Implementation

The following new liaison members were accepted.

Object Management Group (OMG)
Organization for the Advancement of Structured Information Standards (OASIS)
Energistics (Energy Standards Resource Centre)

ISO/TC211 has developed an outreach plan which aims to promote the awareness, adoption, and advocacy of ISO/TC 211 standards in user communities in order to allow these communities to take advantage of the considerable international investment in the development of these standards. Further information on the work of ISO/TC211 is available from the following web site http://www.isotc211.org/

3.3 DGIWG

During the past year there hasn't been a direct attendance by TSMAD to DGIWG meetings. The TSMAD/DGIWG representative who also fulfills the role of DGIWG secretariat will continue to appraise TSMAD of any cooperative requirements for the foreseeable future.

3.4 UN DOALOS

TSMAD have continued liaising with DOALOS and a S-100 based draft product specification has been prepared in support of their UNCLOS requirements.
Also, the features and attributes which will support the product specification are being prepared for future proposals to the IHO GI Registry.

4 Progress on HSSC Action Items

Agenda Item	Subject	Action No	Actions	
3	Product Specification for Digital Paper Charts	HSSC1/1	**IHB/TSMAD Chair** to remove Task A.9 "*Develop S-57 to paper chart functionality and Print-on-Demand (POD) file transfer guidelines*" from the TSMAD Work Plan.	**Done**
6.1	MEP Product Specification	HSSC1/7	**IHB/TSMAD Chair** to remove Work Item D "*Develop Marine Environment Protection Programme based on S-100"* from the TSMAD Work Plan.	**Done**
6.1	UN-	HSSC1/9	**TSMAD** to continue assisting UN-	**Ongoing**

	DOALOS Product Specification		DOALOS in the development of an S-100 compliant product specification for a Law of the Sea feature code directory.	
6.1	UN-DOALOS Product Specification	HSSC1/10	**TSMAD Chair** to inform the Secretary of ABLOS of the ongoing development of an S-100 compliant product specification on a Law of the Sea feature code directory.	**Ongoing**
6.1	Auxiliary Informational Layer Integration	HSSC1/16	**IHB/TSMAD Chair** to add to the TSMAD Work Plan the following medium priority Work Item: "*Develop an S-10X product specification for „Auxiliary Informational Layer Integration"*".	**Done** New A.9
6.1	Grid referencing system for S-100	HSSC1/17	**IHB/TSMAD Chair** to add to the TSMAD Work Plan the following low priority Work Item: "*Investigate a suitable grid referencing system for S-100*"	**Done** New A.3
7.2	Generic Product Specification for MIO	HSSC1/39	**IHB/TSMAD Chair** to add to the TSMAD Work Plan the following medium priority Work Item: "*Develop a template Product Specification for Marine Information Overlays (MIO)*"	**Done** New A.1
6.10	Use of S-57 New Objects in place of CNTARE	20/6	**IHB/TSMAD Chair** to add to the TSMAD Work Plan the following medium priority Work Item: "*Study the possibility to encode information features as New Objects (see S-57 supplement) to avoid caution area objects (CNTARE) in some cases, e.g. to encode T&Ps*"	**Done –** HSSC1

5 Problems Encountered

EXPSOU. Although not specifically a S-57 issue, advice (Encoding Bulletin 27) was issued to overcome the failure of some ECDIS to properly implement the required standards in detecting isolated soundings. However, this issue did highlight a flaw in the TSMAD process for dealing with incoming problems requiring urgent attention. This was discussed in detail at TSMAD 20, the result of which is documented in paper HSSC2-05.1C

6 Recommendations

TSMAD recommends that HSSC 2 endorses the publication of S-58 4.2 and subsequently instructs IHO to submit a proposal for the adoption of the standard to Member States
HSSC 2 is invited to endorse the continued activity of TSMADWG and the recommended revised work plan.

7 Justification and Impacts

Not applicable.

8 Action Required of HSSC

The HSSC is invited to note this report and endorse the continuance of the Work Plan.

TSMAD Work Plan

TSMAD Tasks

A Maintain S-100 and Related projects

B Keep S-58 Recommended ENC validation checks up to date (IHO O3.1.1 refers)

C Support FAQ and encoding advice sections of IHO web site up to date (IHO O3.1.1 refers)

D Develop Marine Environment Protection Programme based on S-100

Task	Work item	Priority*	Milestones	Start Date	End Date	Status **	Contact Person(s)	Affected Pubs/Standard	Remarks
A	S-100	H	S-100 Published Jan 2010	2001	2010	C	Barrie greenslade (UKHO)		
A.1	Develop a template Product Specification for Marine Information Overlays (MIO)	M		2010		O	Barrie greenslade (UKHO)		
A.2	Develop S-101 ENC product specification	M		2006	Jan 12	O	Julia Powell (NOAA)		
A.3	Investigate a suitable grid referencing system for S-100"	L		2010		O	Tony Pharaoh (IHB)		
A.7	Develop S-100 Bathymetric Content Specification.	H	1st Draft 2010	2001		O	Wade Ladner (NAVO)		
A.8	Develop S-100 Portrayal Component	H		2006		O	CSMWG		

* * P = Planned, O = Ongoing, C = Completed

Task	Work item	Priority*	Milestones	Start Date	End Date	Status **	Contact Person(s)	Affected Pubs/Standard	Remarks
A.9	Develop an S-10X product specification for Auxiliary Informational Layer Integration.	M	1st Draft 2010	2010		O	Lynn Patterson (CHS)		
A.10	Liaise with Non-IHO Constituents, e.g. Inland ECDIS, Marine Navigation Industry, DGIWG, AML, WMO Ice, and GIS Industry.	H		2004	-	O			
A.11	Study the possibility to encode information features as New Objects (see S-57 supplement) to avoid caution area objects (CNTARE) in some cases, e.g. to encode T&Ps"	M				O			
B.1	Keep S-58 Recommended Validation Checks up to date	H		2003	-	O	Guy Uguen (SHOM)		
C.1	Support FAQ and Encoding Bulletins	H		2003	-	O	Jeff Wooton (AHS)		

TSMAD Meetings

TSMAD

Date	Location	Activity
29 Sep – 3 Oct 03	Wollongong, Australia	10th Meeting

11-12 November 04	IHB, Monaco	11th Meeting
10-11 November 05	Wollongong, Australia	12th Meeting
18-22 September 06	Wellington, New Zealand	13th Meeting
4-8 June 07	UKHO, Taunton	14th Meeting
14-18 January 08	IHB, Monaco	15th Meeting
5-9 May 08	Cape Town, South Africa	16th Meeting
8-12 September 08	Seattle, USA	17th Meeting
4-8 May 09	Ottawa, Canada	18th Meeting
26-30 Oct 09	Sydney, Australia	19th Meeting
3-7 May 10	Rostock, Germany	20th Meeting
29 Nov-3 Dec 10	Victoria, Canada	21st Meeting

TSMAD S-100 Sub-WG

Date	**Location**	**Activity**
25-29 April 05	Univ. of NH, USA	1st Meeting
7-9 November 05	Wollongong, Australia	2nd Meeting
15-19 May 06	Brest, France	3rd Meeting
18-22 September 06	Wellington, New Zealand	4th Meeting
27-1 December 06	Silver Spring, USA	5th Meeting
23-27 April 07	Ottawa, Canada	6th Meeting
17-21 September 07	Hamburg, Germany	7th Meeting
2-4 September	Taunton, UK	8th Meeting

Annex A

M-3 TR K2.21

TRANSFER STANDARD MAINTENANCE AND APPLICATIONS DEVELOMENT W.G. (TSMAD) – Terms of Reference

1. Objective

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) the S-101 IHO ENC Product Specification;

b) 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 …..

(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.

c) 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.

d) 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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e) 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.