HSSC3-05.1A rev1

3RD MEETING OF THE HYDROGRAPHIC SERVICES AND STANDARDS COMMITTEE
IHB, Monaco, 8-10 November 2011
(Chair Group Meeting on 7 November p.m.)

Report of the TSMADWG to HSSC 3

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, IIC Technologies (Canada), IDON Technologies (Canada), SevenCs (Germany), TKartor (Sweden), and Transas (Russia).

1 Meetings Held During Reporting Period

a. TSMAD 21 29 Oct – 3 Nov, 2010, Victoria, Canada
b. TSMAD 22 11-15 April, 2011, Seoul, Republic of Korea (joint meeting with DIPWG)
c. Joint TSMAD/IALA e-Nav Workshop – 4-6 May 2011, Taunton, UK

2 Work Program

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

2.1 S-100

S-100 Edition 1.00 is currently being used as the basis for several IHO product specifications. This has proved useful in that several minor adjustments have been

made to various models in order to accommodate the requirements of these products. Work continues to develop the content of Part 9 (Portrayal) in conjunction with DIPWG.

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.

2.3 S-101 Progress

S-101 is taking an iterative approach and is broken out into four phases. The phases are as follows:

Phase 1: S-57 content equivalent. It will contain only those features that are currently defined in S-57, but use complex attributes, information types and compound geometry.

This phase was completed in December 2010 and has provided the baseline for the S-57 to S-101 open source converter.

Phase 2: Enhanced Packaging and Data Loading Mechanisms. This phase builds on phase 1, yet adds in functionality for new support file formats and functionality to update text files. In this phase the entire set is packaged into a complete exchange set.

This phase continues to progress and should be completed by the end of December 2011, with TSMAD approval in January 2012. The anticipated phase 2 deliverables are:

S-101 Phase 2 Product Specification
S-101 Phase 2 Feature Catalogue
S-101 Phase 2 Portrayal Catalogue
S-101 Exchange set with updates

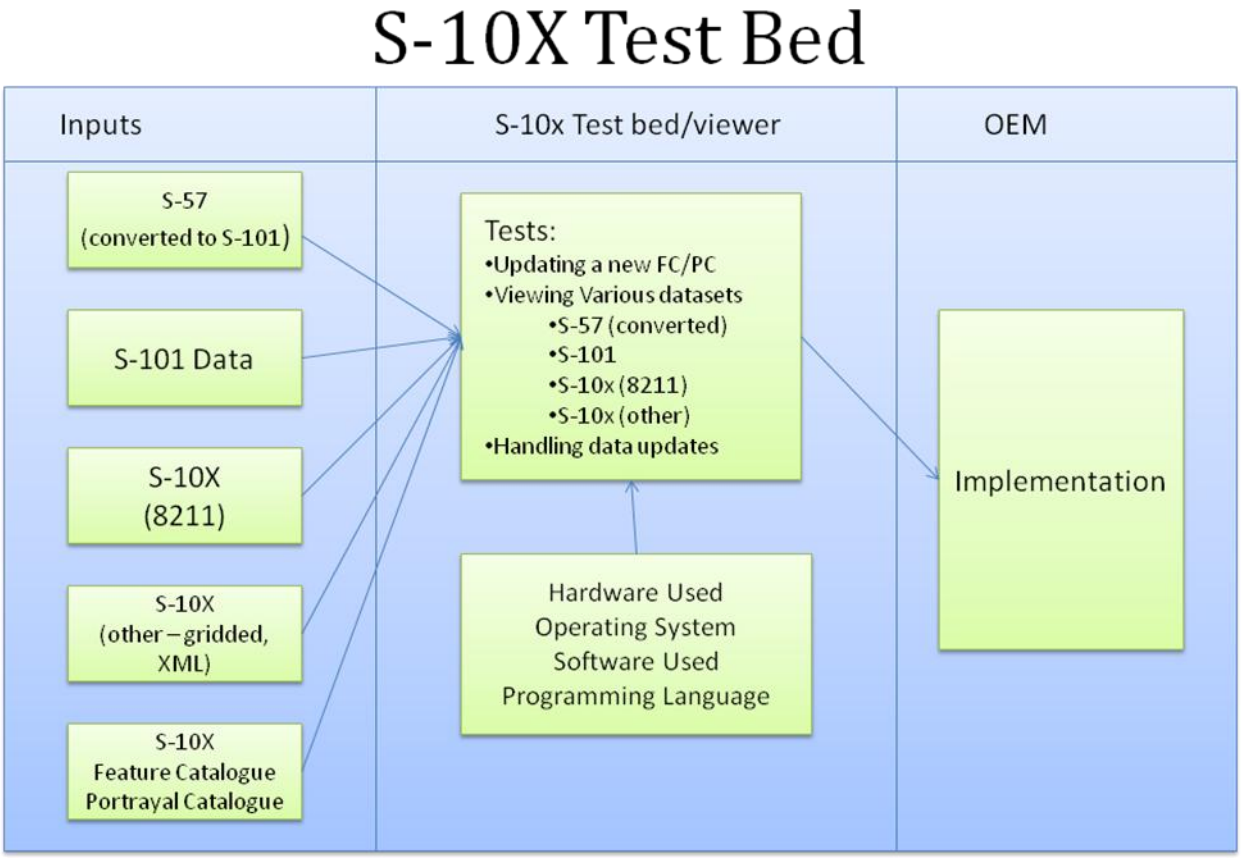
Phase 3: Extending the Model. This phase builds on the previous phases and extends the data model to include additional complex attributes and information types. In addition, this phase will explore the use of cartographic attributes.

Phase 4: Scalability. This phase represents Version 1.0 of S-101. By the completion of this phase the open source translator must be able to take an existing S-57 dataset and translate it into an S-101 dataset. TSMAD will provide the final S-57 to S-101 Feature Catalogue mapping.

It is expected that both Phase 3 and 4 will be completed by the end of 2012, however, this is predicated on the completion of the S-100 portrayal component and the S-101 portrayal catalogue builder.

2.3.1 S-101 Test beds

In order for S-101 to become an official standard it will need thorough testing prior to release. This will enable TSMAD to shake many of the issues in order to release a stable standard that can be implemented by the OEMs and by the MS.



2.3.2 S-101 Test beds

As part of the test bed process the United States (NOAA) and ESRI developed an open source converter to convert S-57 data to S-101 data that will be turned over to the IHO when completed. This work is an important step forward in providing initial test data for S-101, but also enabling the IHO to have a proper phase in date for S-101 as there will be a period of time where there will be S-57 and S-101 based ECDIS systems in operation.

2.4 S-102 Bathymetric Surface Product Specification

As reported at HSSC2 significant progress has been made and I am pleased to announce that the work is now complete following a final review by the relevant stakeholder communities. This is the first S-100 based product specification to be completed mainly due to the contribution of Wade Ladner (U.S.NAVOCEANO) who has led the project in recent time and the support he has received from Canada, in particular Marc Journault and IDON Technologies.

2.5 S-57

A new version of S-57 Appendix B1, Annex A Use of the Object Catalogue has been prepared and at the time of this report is subject to an IHO Member State vote of approval. The new version rationalises into one place the encoding advice previously contained in the ENC Encoding Bulletins and S-65.

2.6 S-64

A new version of S-64 has been produced concluding the action given to TSMAD at HSSC3. However as a result of more recent discussion regarding the usefulness of S-64 in providing a comprehensive enough platform for type approval and ECDIS developers, HSSC may wish to reconsider its immediate publication pending further review by TSMAD.

2.7 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.

3 TSMAD Outreach

3.1 Joint IALA / TSMAD e-Nav Workshop

The workshop's main aim was to discuss the use of S-100 and its registry in the future development of various e-Nav initiatives. The meeting discussed the underlying architecture of e-Nav and recognised the role S-100 could play. The meeting agreed on the use of the GI Registry and proposed possible improvements to it. It also established that IALA and IHO should cooperate further on the development of the registry and product specifications in support of e-Nav.

3.2 ISO TC211

The IHO is a class A liaison member of the ISO Technical Committee 211, and has contributed towards the development of the 19100 series of standards and technical specifications for many years. These standards are relevant to the work of TSMAD as they have been used as the base standards for the development of the S-100 Universal Data Model, the IHO GII Registry and S-10X product specifications.

Since the last HSSC meeting (26-29 October 2010), the IHO participated in the 32nd ISO/TC211 meeting which was held in Delft, The Netherlands between the 23rd and 27th of May 2011.

Some of the standards (of relevance to TSMAD and DIPWG), that are currently being developed or revised include; Portrayal services (19117-2), Portrayal finishing rules (19117-3), Catalogue services, metadata (19115), metadata - XML schema implementation (19139), and Spatial schemas (19107). Further information on the development activities of ISO/TC 211 is available from the ISO/TC211 web site at; http://www.isotc211.org/

ISO/TC211 also presents a "Standards in Action" workshop during its meetings. At the 32nd TC211 meeting (Delft, Netherlands) several presentations were provided describing how the19100 standards are being used thorough the world. These presentations are available for download from the standards in action web page; (http://www.nen.nl/web/Evenementen/Evenementenkalender/Workshop-Standards-in-Action.htm).

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.

4 Progress on HSSC Action Items

Agenda Item	Subject	Action No	Actions	
5.1.C	Encoding issues	HSSC2/5	**TSMAD** to incorporate process diagram for dealing with encoding issues in its business rules.	**Done**
5.1.D	USOC	HSSC2/6	**TSMAD** to prepare a revised version of S-57 Appendix B.1, Annex A *Use of the Object Catalogue for ENC* by incorporating all outstanding encoding bulletins and other relevant extant material.	**Done**
7.1.B	S-64	HSSC2/19	**TSMAD** to enhance the S-64 ECDIS test data set to help ECDIS testing authorities to identify some of the recently exposed potential implementation issues.	**Done**

5 Problems Encountered

Nothing to report.

6 Recommendations

TSMAD recommends that HSSC approves the publication of S-102.
HSSC is invited to approve the continued activity of the TSMADWG work plan.

7 Justification and Impacts

Not applicable.

8 Action Required of HSSC

The HSSC is invited to

a. Note this report
b. Endorse the Work Plan at Annex A.
c. Endorse the proposed revised Terms of Reference at Annex B.
d. Approve the final draft of S-102 and instruct IHB to submit to Member States for their endorsement.
e. Consider either approving the new version of S-64 for immediate publication, or tasking TSMAD to investigate expanding the standard to improve its usefulness for both OEMs and type approval authorities.

Proposed 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		
A.9	Develop an S-10X product specification for Auxiliary Informational Layer Integration.	M	1st Draft 2010	2010		O	Lynn Patterson (CHS)		

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

Task	Work item	Priority*	Milestones	Start Date	End Date	Status **	Contact Person(s)	Affected Pubs/Standard	Remarks
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
11-15 April 11	Seoul, Republic of Korea	22nd 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 B to HSSC3-05.1A

Proposed changes – in red – to the TSMAD TOR, as a result of Action HSSC2/5

TRANSFER STANDARD MAINTENANCE AND APPLICATIONS DEVELOPMENT WORKING GROUP (TSMAD)
Terms of Reference
Ref: 1st HSSC Meeting (Singapore, October 2009)

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. In the case of issues reported which may be data related, procedure described in Annex 1 must be adhered to;

(ii) maintain the S-100 IHO Universal Hydrographic Data Model as directed in Part 13 (S-100 Maintenance Procedures);

1 maintain the S-101 IHO ENC Product Specification;

2 participate in the Feature Concept Register, the Portrayal Register and the Metadata Register control bodies as defined in S-99;

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

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

(vii) 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. When meetings are scheduled, and in order

to allow any WG submissions and reports to be submitted to HSSC on time, WG meetings should not normally occur later than nine weeks before a meeting of the HSSC.

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.

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.

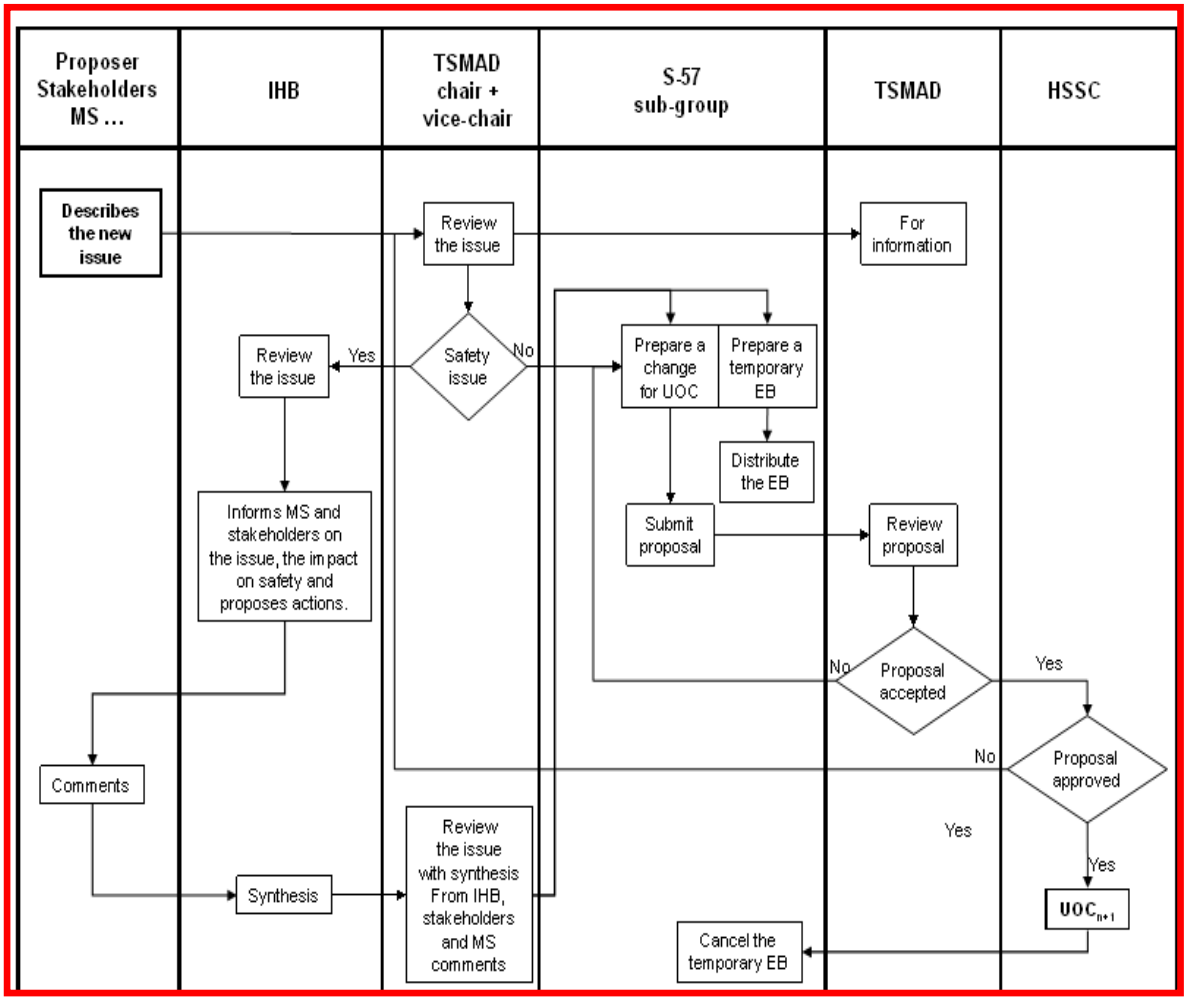
f) Expert Contributors shall seek approval of membership from the Chairman.

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.

Annex 1


Proposer Stakeholders MS ...
IHB
TSMAD chair + vice-chair
S-57 sub-group
TSMAD
HSSC
Describes the new issue
Review the issue
For information
Review the issue
Yes
Safety issue
No
Prepare a change for UOC
Prepare a temporary EB
Distribute the EB
Informs MS and stakeholders on the issue, the impact on safety and proposes actions.
Submit proposal
Review proposal
No
Proposal accepted
Yes
Comments
No
Proposal approved
Yes
Yes
Review the issue with synthesis From IHB, stakeholders and MS comments
Synthesis
UOC n+1
Cancel the temporary EB