

16th CHRIS MEETING
Ottawa, Ontario, Canada, 28-31 May 2004

**REPORT OF THE TRANSFER STANDARD MAINTENANCE AND
 APPLICATIONS DEVELOPMENT WORKING GROUP (TSMAD)**

<i>Submitted by:</i>	Michael Brown, USA
<i>Executive summary:</i>	Report on the work undertaken and progress made by the Transfer Standard Maintenance and Applications Development Working Group, since CHRIS15, and future plans.
<i>Actions to be taken:</i>	CHRIS to note the report, and endorse the future plans.
<i>Related documents:</i>	CHRIS letter No. 2/2004 (call for reports)
<i>Related Projects:</i>	Not applicable

1. Meetings and Leadership.

1.1 TSMAD held its tenth meeting in October 2003, hosted by the Australian Hydrographic Office in Wollongong, Australia. Its sub-working group tasked with the development of S-57 Edition 4.0 met in the same time frame (TSMADSubWG5) and then again in March 2004 (TSMADSubWG6) at the National Oceanic and Atmospheric Administration offices in Silver Spring, Maryland, USA.

1.2 Mr. Don Vachon (Canada) resigned from the TSMAD vice-chairman and Sub-Working Group chairman positions. Mr. Barrie Greenslade (UK) volunteered to take the Sub-WG chairman position pending approval from his office, which was subsequently given. The TSMAD secretary, Mr. Ian Halls (HSA Australia) was to ask that the CHRIS chairman request nominations for the vice-chair position. This was accomplished by CHRIS Letter 4 of 2003 and the election of Mr. Barrie Greenslade (UK) was announced in CHRIS Letter 1 of 2004.

1.3 Dr. Chris Drinkwater (UK) handed over chairmanship of TSMAD to Mr. Michael Brown (US), chairman elect, at the conclusion of TSMAD10.

1.4 TSMAD11 will be held at the IHB, Monaco, during the week of November 8-12, 2004.

2. S-57 Edition 3.1

2.1 The two new Web services that were launched last year, 'Frequently Asked Questions (FAQ)' and 'S-57 Encoding Bulletins' have begun to post information for ENC producers. Several questions raised by users during the past few months have been addressed by the TSMAD panel appointed to review them, and the answers posted to the IHO ENC FAQ Web site.

Several issues were addressed by “S-57 Encoding Bulletins,” including guidance on how to encode: deep water route centerlines, recommended route centerlines, and fishing facilities. Guidance on ESSA, PSSA and archipelagic sea lanes is currently being developed for posting.

2.2 At the direction of CHRIS15, TSMAD10 discussed the recommendations in the IC-ENC paper on ENC Consistency. The recommendations were adopted and a small drafting group, headed by Dr. Mathias Jonas, was formed to develop a Circular Letter for approval and distribution by CHRIS. This Circular Letter has been forwarded as a separate proposal to CHRIS16.

3. S-57 Edition 4.0

3.1 As previously noted the TSMADSubWG met twice since the last CHRIS meeting. After a steep learning curve with the ISO TC211 standards, work on the Edition 4.0 base documents is starting to move forward at a faster pace.

3.2 Status of individual Edition 4.0 work items:

Work Item 2.1 - Registry (Object Catalog): TSMAD have played a significant role during the past year in developing both ISO19135 (feature registries) and ISO19126 (feature data dictionaries and catalogues).

It is proposed that when ISO19135 reaches IS status the IHO formally apply to become a ISO approved registry owner.

A draft data dictionary of IHO maintained features has been prepared which, after review, will be used to populate a register. Similar registers will be available for use by the organizations responsible for ICE, AML and OEF features. It was also decided to use the registry to hold product specific feature catalogue registers.

A mechanism which includes a database with user and administrative interfaces is being developed by DGIWG. The source code could be made available to IHO either as is or with minor amendments depending on suitability.

Work Item 2.2 - ENC Product Specification: The future ENC Product Specification (PS) was discussed in detail during the TSMADSubWG5 meeting. The conclusions of that discussion were included in SubWG report, Annex C, published on the IHO Web site in February 2003. Several points of note include: work on the ENC PS for Edition 4.0 will have to wait until a significant portion of the main standard is finalized; it was proposed that the ENC PS will be a separate, stand-alone document (S-XX) rather than an annex of S-57; and, the first version of the Edition 4.0 ENC PS will be based on the Edition 3.1 ENC PS with all pending corrections applied.

Work Item 2.3 - Raster and Matrix Data Model: This work item has been renamed to ‘Imagery and Gridded Data’ to more accurately reflect the subject. A first draft of this section was submitted for review at TSMADSubWG6. After discussion US delegates to forward further items for inclusion after which the draft will be distributed on a wider basis.

Work Item 2.4 – Time Varying and 3D Data: The group responsible for this work item studied requirements for this type of data and recommended that most of the requirements could be included in Work Item 2.3. The remaining ‘3-D vector’ and temporal data elements will be addressed by Work Item 2.6 once the basic 2-D data model is completed.

Work Item 2.5 – Meta Data: An initial mapping of existing S57 metadata to ISO 19115 metadata elements has been started. The work item group will refine this mapping and use it to identify where new ‘ISO style’ metadata elements will have to be created to accommodate S-57 as well as introducing new metadata into S-57 to correct some deficiencies in Edition 3.1 and to accommodate future products.

Work Item 2.6 – S-57 Base Document: Work on this item is progressing and being coordinated with DGIWG to facilitate future interoperability and take advantage of the similar work going on in that community. Several drafts of the spatial profile and application schema have been submitted and reviewed. A presentation on GML by Ron Lake of the Galdos company, introduced the group to one method of data encoding which will be a significant piece of future work for this item. It was useful in demonstrating the potential wider scope in the use of S-57 Edition 4.0.

Work Item 2.7 – Bathymetric Data Content Specification: Little work has been done on this item aside from continuing to identify required elements for encoding hydrographic survey data. Two papers and a shore presentation on the ‘Open Navigation Surface Working Group’ and the ‘Bathymetric Attributed Grid Object’ were provided to the group to inform this work item.

Work Item 2.8 – Portrayal: Display of data was briefly discussed as it is included as part of the ISO TC211 suite of standards being implemented for Edition 4.0. ENC display will obviously be an issue for work between TSMAD and C&SMWG. Display for other products may be an issue to be addressed under this work item in the future.

Work Item 2.9 – Paper Chart Product Specification: This work item was approved by CHRIS15 and has been added to the TSMADSubWG agenda. Work to date has focused on metadata and cartographic object requirements for data to be used in paper chart production.

3.3 A new work item, 2.10 Liaison with Non-IHO Constituents, was formulated at TSMAD10 and has been submitted to CHRIS as a separate proposal.