

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 Tidal and Water Level Working Group

Submitted by:	Chairman, TWLWG
Related Documents:	Report of TWLWG3 meeting (available from IHO web site).
Related Projects:	None

Chair:	Stephen Gill, USA
Vice-Chair:	Zarina Jayaswal, Australia
Secretary:	Steve Shipman, IHB
Member States:	Australia, Brazil, Canada, Chile, China, Cuba, Denmark, Ecuador, Finland, France, Germany, India, Indonesia, Italy, Japan, Korea Rep of, New Zealand, Norway, Portugal, South Africa, Spain, UK, Uruguay, USA, Venezuela.
Expert Contributor Organisations:	Bohdan Pillich (Tidal Expert) IOC-GLOSS
<i>see Annex A for full details</i>	

Meetings Held During Reporting Period

TWLWG3 5 - 7 April 2011 Jeju Island, Republic of Korea

Next Meeting

TWLWG4 8 - 10 May 2012, Cape Town, South Africa

Work Program

The 3rd meeting of the TWLWG took place at the Hanwa Resort on Jeju Island, Republic of Korea from 5 – 7 April 2011 and was hosted by the Korea Hydrographic and Oceanographic Administration (KHOA). The meeting was attended by 28 representatives from 13 IHO Member States, the IHB and the IOC Global Sea Level Observing System (GLOSS).

During discussion on the Standard Constituent List (Task A) it was considered to be of merit to carry out a study of Tidal Predictions generated as a result of analysis of a “common data set” by different analysis software. A new task A.2 has been added to the draft work plan at Annex B

TWLWG has made contact with SNPWG regarding the work undertaken so far on the preparation of a “Standard for Digital Tide Tables”. The advice received from SNPWG should allow this work to progress.

A draft “Tidal Heights – Objects and Attributes Catalogue” has been prepared by Australia and this work is continuing in liaison with TSMAD and DIPWG.

Some initial work on the development of a “Standard for the Transmission of Real-Time Tidal Data” has been undertaken. Contact has been established with some companies manufacturing transmitting tide gauges and those members of TWLWG who also attend IALA meetings on the use of AIS binary messages, which can include some tidal information, are providing a link in order to avoid any duplication of effort.

The proof reading of the English translation of the Tidal Manual has been completed and the publication is now with the Institut Océanographique in Paris for finalisation and printing. This task has been deleted from the draft work plan.

TWLWG completed its review of the definition of Mean Sea Level and this has now been passed to the secretary of the HDWG who has entered it as a new work programme item on the HDWG draft work plan. TWLWG considers that some further work is required in its review of IHO resolution 3/1919 as amended, (Datums and Benchmarks) and the definitions of Low Water, Mean Water and High Water and this work is continuing. TWLWG reviewed all IHO resolutions related to tidal matters and in particular considered resolutions 5/1932 as amended (Extension of World Network of Tidal Observations) and 6/1932 as amended (Study of Mean Sea Level). TWLWG concluded that there was no requirement to amend resolution 5/1932 but decided that it was appropriate to more clearly define what was meant by the expression “long term” as used in the first paragraph of resolution 6/1932 on the “Study of Mean Sea Level”. A draft revision of this resolution is attached at Annex C for HSSC endorsement and subsequent submission to Member States for adoption.

The structure and contents of the short (5-day) course on “Tides for Hydrography” were passed to the CBSC and any further requirements from CBSC are awaited. This task has been deleted from the draft work plan.

Following the consideration of a presentation from the UK on “Global Sea Level Rise Effects” TWLWG considered it appropriate to include a new work programme item “The Study of long term data sets for the determination of global sea-level rise”. This is included in the draft Work plan as task H.

In the draft Work Plan, attached at Annex B, the completion dates for some items have been amended to reflect progress made to date.

Progress on HSSC Action Items

N/A

Problems Encountered

N/A

Any Other Items of Note

N/A

Conclusions and Recommended Actions

N/A

Justification and Impacts

N/A

Action Required of HSSC

The HSSC is invited to:

- a. note this report
- b. re-appoint the TWLWG to continue its work under its current Terms of Reference
- c. endorse the draft Work Plan at Annex B
- d. endorse the revised draft text of IHO resolution 6/1932, as amended, as set out in Annex C and instruct the IHB to circulate it to Member States for adoption.

TWLWG Membership

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Annex A to TWLWG Report to HSSC3

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Annex A to TWLWG Report to HSSC3

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Annex A to TWLWG Report to HSSC3

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1 TWLWG Work Plan

1.1 TWLWG Tasks

- A Maintain Standard Tidal Constituent List (IHO Work Programme 3.2.4 refers)
- B Prepare a Standard for Digital Tide Tables (IHOTC Report to the XVIIth IHC as adopted)
- C Liaise with TSMAD on tidal matters relevant to the Dynamic Application of Tides in ECDIS and develop a Standard of the transmission of real-time tidal data (Action HSSC1/18)
- ~~D Monitor and assist in the preparation of English translation of the Tidal Manual prepared by the Institut Océanographique and SHOM (IHO funded the translation from French to English)~~
- E Review the various definitions of MSL and their relevance to Hydrographic Offices and review the IHO tidal resolutions to ensure that they are compatible with the requirements of non tidal areas such as the Baltic Sea.
- F Prepare and maintain an inventory of tide gauges used by Member States and to publish it on the IHO/TWLWG web site.
- ~~G Prepare structure and contents for a short course (maximum 5 days) on "Tides for hydrography" for the Capacity Building Sub-Committee~~
- H Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software.

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard
A.1	Maintain Standard Tidal Constituent List	H	No updates required in 2010	Continuous		O	Chris Jones*	

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard
A.2	Compare the tidal predictions generated as a result of analysis of a common data set using different analysis software.	H	Select Common data set Analyse using different software Predict common set of tides Compare results	2011 2011 2011 2012	2012 2012 2012 2012	P	Chris Jones* Juan Fierro Stephen Gill Tor Tørresen Phil MacAulay Ruth Farre Kwan Chang Lim Japan?	
B.2	Prepare a Standard for Digital Tide Tables	H	Prepare draft Standard	2009	2012	O	Stephen Gill* Chris Jones Zarina Jayaswal Ian Halls	
C.1	Liaise with TSMAD and DIPWG on tidal matters relevant to the Dynamic Application of Tides in ECDIS	H	Review Objects and Attributes required for water levels and streams (Passed to TSMAD April 2010) Prepare draft pages for Objects and Attributes. Prepare draft Product Specifications (S1**) for tidal data in S-100.	2009 2010 2012	2011 2012 2013	C O P	Ian Halls* Zarina Jayaswal Stephen Gill Chris Jones Juan Fierro Ruth Farre Dan Pillich Gigab Ha	
C.2	Develop a Standard for the transmission of real-time tidal data	H		2009	2012	O	Stephen Gill* Chris Jones Zarina Jayaswal Ian Halls Juan Fierro	

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard
D.1	Provide advice to the translator preparing the English text of the Tidal Manual prepared by the Institut Océanographique and SHOM	H	Completion of translation into English.	2003	2011	C	Stephen Shipman ²	
D.2	Proof read the English translation of the Tidal Manual prepared by the Institut Océanographique and SHOM	H	Proof reading of the English text.	2009	2011	C	Stephen Shipman ² Glen Rowe Ruth Farre Dan Pillich Zarina Jayaswal Juan Fierro Stephen Gill Chris Jones Chris Andreassen	
E.1	Review the various definitions of MSL and their relevance to Hydrographic Offices and review the IHO tidal resolutions to ensure that they are compatible with the requirements of non tidal areas such as the Baltic Sea.	H	Reviewed at TWLWG2- Further work undertaken at TWLWG3. Definition of MSL approved for submission to HDWG. Work on the IHO resolutions ongoing.	2009	2012	O	Jukka Varonen* Tor Tørresen Phil MacAulay Stephen Shipman Chris Jones Stephen Gill	
F.1	Prepare and maintain an inventory of tide gauges used by Member States and to publish it on the IHO/TWLWG web site.	H	Initial inventory from TWLWG members available on IHO web site. CL36/2010 sent to Member States seeking wider input.	Continuous		O	Stephen Shipman* Stephen Gill	
G.1	Prepare structure and contents for a short course (maximum 5 days) on "Tides for hydrography"	H	Delivery of course structure to CBSC. (Passed to CBSC – June 2010)	2009	2010	C	Stephen Gill ² Stephen Shipman	

Task	Work item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-completed	Contact Person(s) * indicates leader	Related Pubs/Standard
H1	The study of long term data sets for the determination of global sea level rise.	H		2011	2014	O	Chris Jones Jose Quijano France	

1.2 TWLWG Meetings (IHO Task 3.1.11 refers)

Date	Location	Activity
5 – 7 April 2011	Jeju Island, Rep of Korea	3 rd Meeting
8 – 10 May 2012	Cape Town, South Africa	4 th Meeting

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Secretary: Steve Shipman Email: sshipman@ihb.mc

Draft revision of resolution 6/1932, as amended. New text is shown in red italics.

STUDY OF MEAN SEA LEVEL	6/1932 as amended	26/1965	A6.5
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1 It is recommended that the IHB encourage Member States to carry out systematic, long-term tidal observations, *records of typically 40 years or longer*, in view of the importance of monthly and secular variations of mean sea level in connection with tidal prediction.

2 It is recommended that Member States make such data available for publication by the Permanent Service for Mean Sea Level of the International Council of Scientific Unions, since that service publishes regular monthly and annual values of mean sea level for tidal stations throughout the world.