



# 13<sup>th</sup> Meeting of the Hydrographic Services and Standards Committee

## Report of the TWCWG

### Agenda Item HSSC13-05.7A

HSSC-13, IHO Secretariat, Monaco + VTC, May 2021



# IHO MISSION

International Hydrographic Organization

- To monitor developments related to tidal, water level and current observation, analysis, prediction, vertical and horizontal datums;
- To develop and maintain the relevant IHO standards, specifications and publications for which it is responsible in liaison with the relevant IHO bodies and non-IHO entities;
- To develop standards for the delivery and presentation of navigationally relevant surface current/water level information;
- To provide technical advice and coordination on matters related to tides, water levels, currents and vertical datums.



4<sup>th</sup> meeting of the Tides, Water Level and Currents Working Group (TWCWG) Busan, Republic of Korea – 8-10 April 2019

Chair:	Gwenaële Jan, (Shom, France)	New Chair:	Christopher Jones (UKHO, GB)
Vice-Chair:	Peter Stone (NOAA, USA)	New Vice-Chair:	Ruth Farre (SAN, South Africa)
Secretary:	David Wyatt, IHO	New Secretary:	To be nominated
Expert Contributor Organisations:	CCOM-UNH, SPAWAR Atlantic, C-Map, IOC-GLOSS		

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# TWCWG TIDE WATER LEVEL AND CURRENT WG

2021 Objective concern: Compatibility, consistency with the S-100WG guidance, HSSC WGs

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### Ongoing consensus

- 1. Trend definition , 2. threshold value for trend removed, uncertainty on trend (TBC). 3. Consensus for not including NRT Portrayal in ed 1.0.0

### Choice & tasks to be done now to target ed.1.0.0

- TWCWG chosed NIPWG definition for trend that we apply to S-104
- Include water level trend modification and appropriate metadata to DCEG
- Finalized F&A

HSSC11



HSSC12



HSSC13



S-104 ed. 1.0.0  
(S-100 Ed.4.0.0)

S-111 Ed 2.0.0 be  
compliant with S-  
100 Edition 5.0.0

✓ Ed.0.0.7 (2018)

S-104

Portrayal harmonization

Target Ed.  
1.0.0

✓ Ed.1.0.1 (2018.12)

S-111

Use cases ( S-104, 1 S-111)

**Datum separation:** not included in S-104 Ed 1.0.0, included in Ed 2.0.0. Visual diagrams to explain concept will be done and shared within TWCWG.

**Uncertainty:** Delay methods and the possible inclusion of uncertainty as Feature Attribute until Ed 2.0.0. Should be progressed and resolved well before Ed 2.0.0 is submitted. (see also 2020 exchanges on decision and debates regarding to uncertainties)

### Acronym and definition

- DCEG: Data Classification and Encoding Guide.
- F&A: Features and Attributes into IHO GI Registry.
- Trend definition : "the tendency of water level to change in a particular direction" .



## S-111

**Non-uniform time interval data:** include support in S-111 as in S-104  
Have S-111 Ed 2.0.0 be compliant with S-100 Edition 5.0.0, not Ed 4.0.0

**File name 4-character producer code:** use 4-character instead of 2-character codes, but need to coordinate when S-100 allows for 4-character codes in Producer Code Register (in S-100 Ed 5.0.0?)

**Group\_F (including fillValue):** after S-100 WG discussion of UoM is concluded, S-111 and S-104 should conform. Require fillValue, code, [uom.name](#), etc. to be certain values in Group\_F for consistency across all S-111 products

## S-104

**Real-time AIS use case:** use cases were provided (+ 1 on AIS use case (S-104 project team), will be sent to S-100/IIC for S-100 real-time data development

**Portrayal:** leave in PS with note that no XML portrayal catalogue is provided in Ed 1.0.0 and implementation not expected for Ed 1.0.0.

Have S-104 compliant with S-100 Ed 4.0.0, but note that efforts were made to accommodate known Ed 5.0.0 draft at time of publication

**File name 4-character producer code:** same as for S-111 above

**Group\_F (including fillValue):** same as for S-111 above

**Water level trend threshold:** more discussion needed offline to determine optimal place for this metadata variable in HDF5 file



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## **PROGRESS IN S-111 PS: RECENT TIMELINE**

- Dec 2018: **Ed 1.0.0** distributed by IHO
  - Under review by OEMs, software developers, test bed creators
- Apr 2019: TWCWG4
- Jun 2019: **Ed 1.0.1** accepted
- Sep 2019: attended 7th S-100 Test Strategy Meeting (Monaco)
- Dec 2019: **Ed 1.0.2** finalized
- Sep 2020: **Ed 1.1.0** finalized
- Mar 2021: attended 8th S-100 Test Strategy Meeting (VTC)
- **Ed 1.1.1** ready for TWCWG5

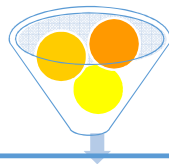
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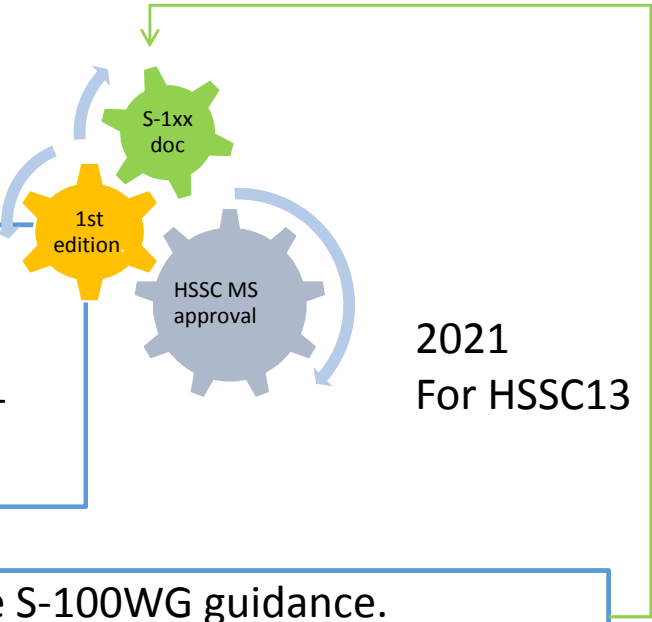
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## PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

- ✓ **S-111** : Current product specification : edition 1.1.1 (delivered at TWCWG5)
- \* **S-104** : water level product specification: Edition 1.0.0 aligned with S-100 Ed. 4.0.0



- S-111: PS Documentation developed with the S-100WG guidance.
- The PS is in compliance with the HDF5 file formatting as proposed at S-100WG.



S-104: PS Documentation developed with the S-100WG guidance.



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## **TWCWG REPORT TO HSSC13**

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- **TWCWG review recommended for August 2021 (DQWG presentation at TWCWG5)**
  - Vertical and horizontal datums: “The IHO Resolution on Datums and Benchmarks, Resolution 3/1919, as amended, resolves practices which, where applicable, should be followed in the determination of these vertical datum connections. This essential resolution 3/1919, as amended, is available in the IHO Publication M-3”
- **Capacity building :**
  - Translation Portugal to be finalized
  - Suggestion: translation in Chinese (Feasibility agreement from Chinese MS TWCWG during TWCWG5)
  - Point to be Survey and Mariners answers
- **Continue joint meeting IOC-GLOSS / IHO TWCWG**
  - IOC-GLOSS plans to organize meeting in 2023. HSSC12 validated a futur joint meeting IHO-TWCWG and IOC-GLOSS

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## TWCWG REPORT TO HSSC13

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### Tidal Predictions comparison action:

- Better way of comparing
  - Define scope or parameters to compare
  - Enter key input to common document/report?
  - Should be easy to include more results • «Native» country could compare prediction
- Similar approach for tidal streams/current : Need someone familiar with this to lead the work
- Additional analysis and collaboration is recommended

IHO resolutions : Submitted to HSSC13

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## ACTIONS REQUESTED FROM HSSC13

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1. To note the S-111 (ed. 1.1.1)
2. To consider aligning the publication of S-111 Edition 2.0.0 to S-100 edition 5.0.0.
3. To consider aligning the publication of S-104 Edition 1.0.0 to S-100 edition 4.0.0. <= >  
*S-104 as a part of the S-100 Implementation Plan*
4. To note the IHO resolutions update
5. To note the TWCWG report
6. To reappoint the TWCWG to continue its work under its current Terms of Reference (Annex C)
7. To endorse the draft Work Plan at Annex B of the report to HSSC-13.

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