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Organisation Hydrographique Internationale

IHO-TWCWG Outcomes

Ocean current & water level product specification in S-100 world
(alias S-111 & S-104)

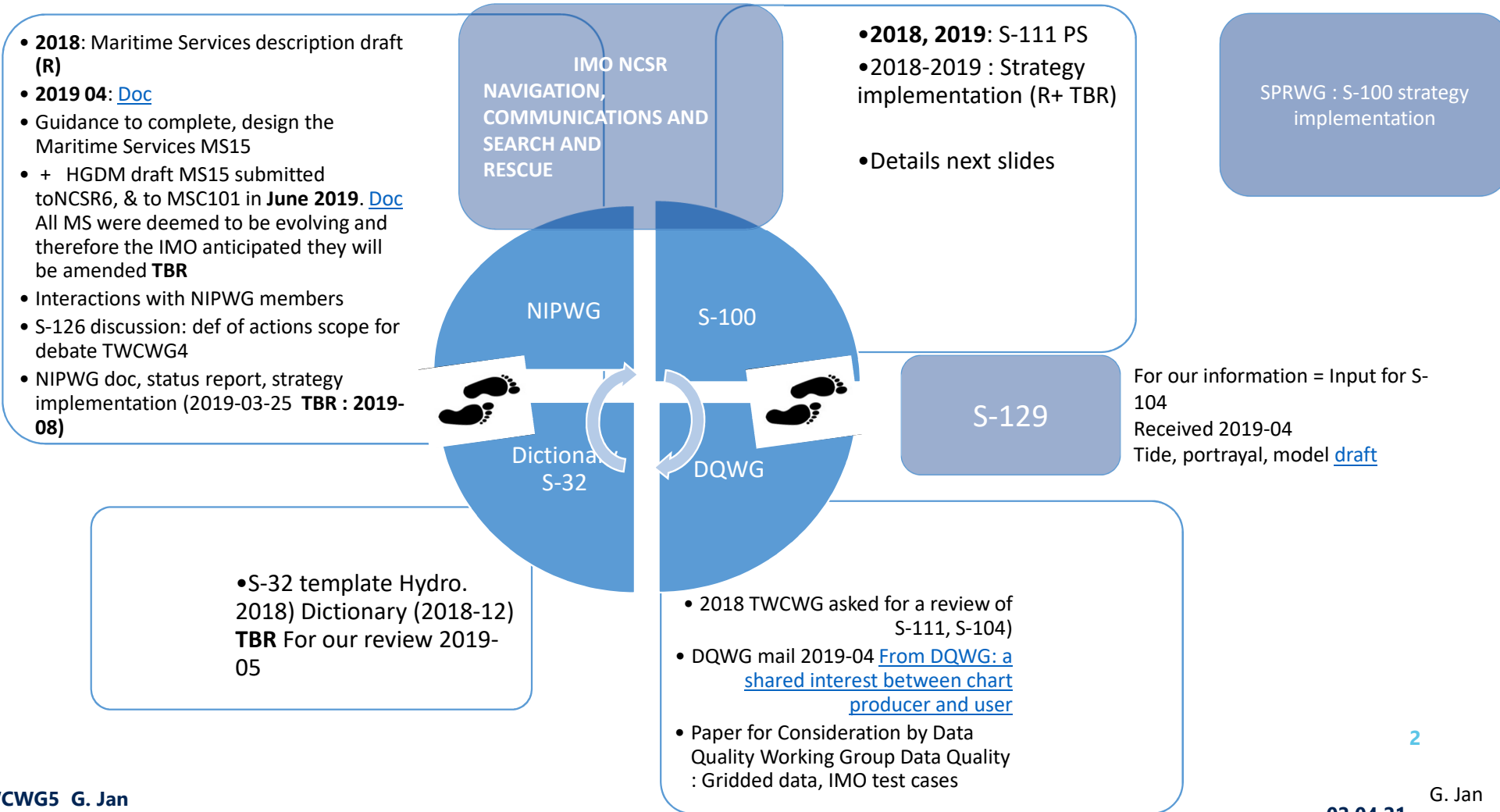


2021-01-29

TWCWG INTERSESSIONS ACTIVITIES 2019-2020



R: Reviewed by TWCWG
 TBR: review to be done by TWCWG





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TWCWG TIDE WATER LEVEL AND CURRENT WG

2020 Objective concern: Compatibility, consistency with the S-100WG guidance, HSSC WGs

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Ongoing consensus

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

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

- TWCWG chose NIPWG definition for trend that we apply to S-104
 - Include water level trend modification and appropriate metadata to DCEG
 - Finalize F&A
- Note: with the help of G. Seroka, Y. Baek, J. Wootton and J. Powell, TWCWG

HSSC11



HSSC12



HSSC13



S-104 ed. 2.0.0
(S-100 next ed.)

S-111 ed. 2.0.0
(S-100 next ed.)

✓ Ed.0.0.7 (2018)

S-104

✓ Ed.1.0.1 (2018.12)

S-111

Portrayal harmonization

Use cases (2 S-104, 1 S-111)

Target Ed.
1.0.0 (2021.04)

* To consider aligning the publication of S-104 Edition 1.0.0 to the next S-100 edition by 2021. <= > S-104 as a part of the S-100 Implementation Plan

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" .



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TWCWG TIDE WATER LEVEL AND CURRENT WG

The other core activities : 2019-2020 report & request to HSSC

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HSSC11



HSSC12



HSSC13



S-104 ed. 2.0.0
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✓ Ed.0.0.7 (2018)

S-104

Portrayal harmonization

Target Ed.
1.0.0 (2021.04)

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S-111

Use cases (2 S-104, 1 S-111)

• **Resolutions reviewed**

- **New data sets** for tidal amplitude pred. Analysis + A survey dedicated to this point

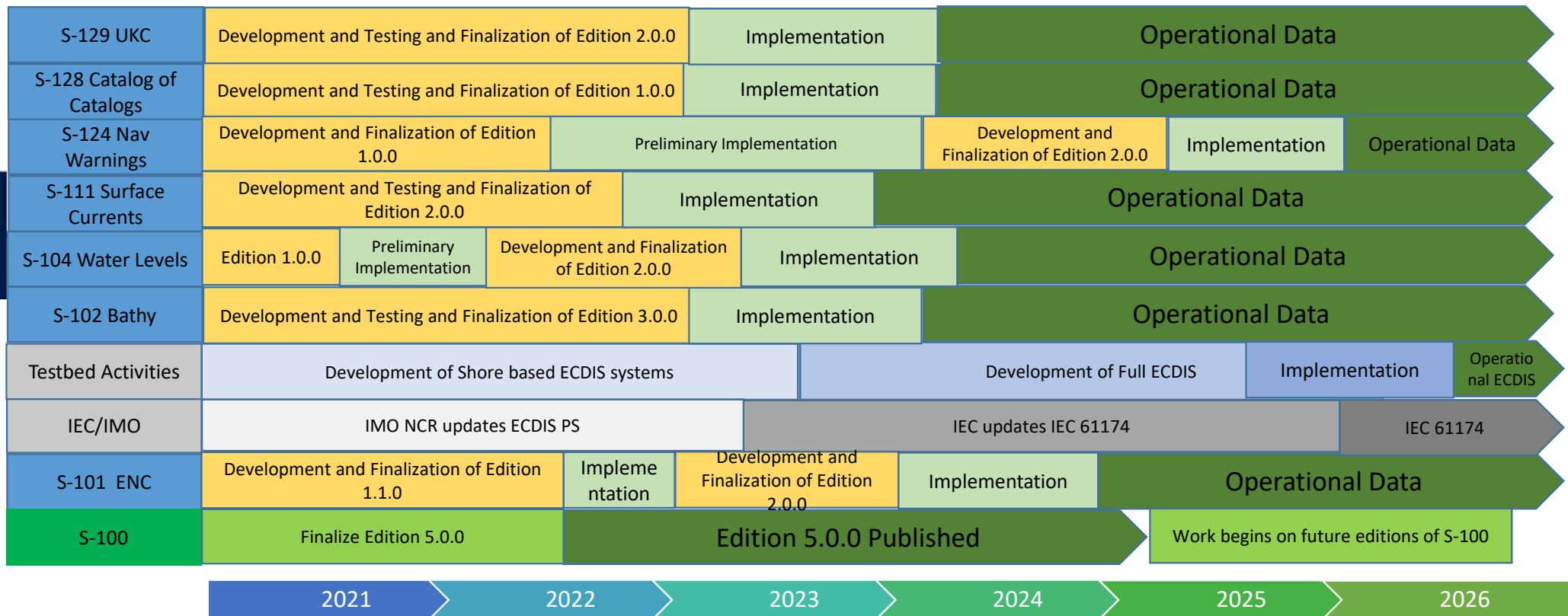
IHO& IOC Unesco GLOSS actions

- ✓ IHO review on GLOSS document
- ✓ Data archaeology meeting
- TWCWG talk
- 2022 : repeating IHO-TWCWG& IOC GLOSS meeting

• **Capacity building**

- ✓ 4 languages now for lessons on tide & hydrography
- New language CB?
- A place (~1 Giga O.) for sharing it with MS <https://cb.iho.int/>

High Level S-100 Product Development and Testbed Timeline (updated 2020-10)



Src: S-100

G. Jan



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

Milestones 2017-18 :
[Ed. 0.0.7](#)

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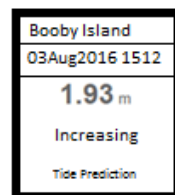
3.1 S-104 status. Products specification (PS) Water Level Information for Surface Navigation

- Dataset for tests ; Prototype S-104 data sets. Progression in the wake of S-111 aligned with the PSs, S-100WG.
- **2020 Objective concern:** Compatibility, consistency with the S-100WG guidance, HSSC WGs outputs. S-104 project team + G. Seroka, IHO Y. Baek and J. Wootton.
- A significant coordinating-work done to maintain the flow of the exchanges. 1 direct effect: significant progress on S-104 doc.

1. Finalize water level trend, includes appropriate metadata and possible small modifications to the Data Classification and Encoding Guide (DCEG)

2. TWCWG chose using NIPWG's registered definition in the S-104 DCEG. NIPWG's definition of trend is : "the tendency of water level to change in a particular direction"

3. Finalize registering Features and Attributes (F&A) into IHO GI Registry.



- S-104, describes how an HDF5-formatted file can contain water level data of four types: (1) time series at a stations, (2) forecasts on a regular grid, (3) data on an irregular grid.

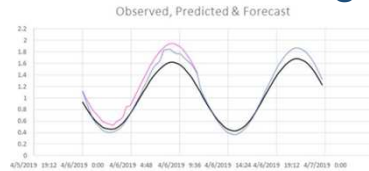


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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

3.1 S-104 status. Products specification (PS) Water Level Information for Surface Navigation

Booby Island
03Aug2016 1512
1.93 m
Increasing
Tide Prediction



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Timeschedule : 2020-12. -> Target approval for HSSC 2021. Portrayal Features Catalogue and S100 product metadata variables. From S-100 & TWCWG-S-104 project team, consensus found for removing from PS ed. 1.0 the NRT displaying not NRT data, not delivering but displaying. Ed.2.0.0 : Portrayal specification will be needed in Ed. 2.0.0, as interoperability with other S-1xx PS can be worked on at the S-100 level 1. (S100 ed.5?)



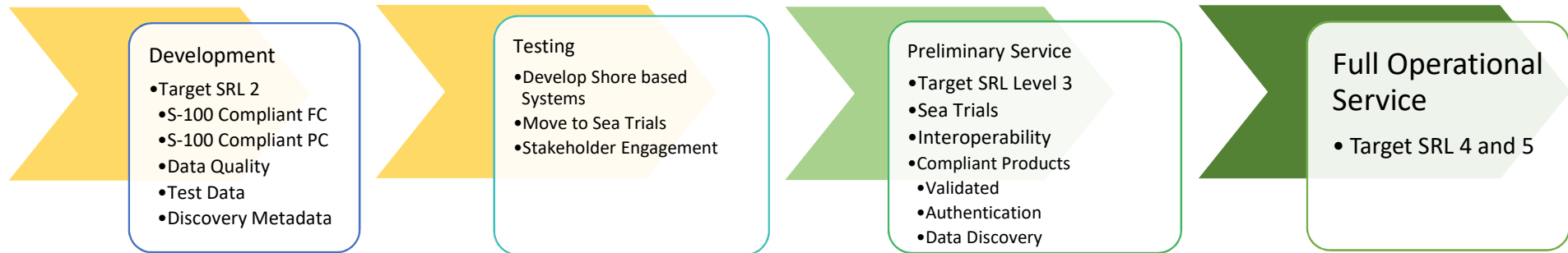
- Consensus : Sea level trend threshold value 0.2m is removed ; largely discussed before consensus
- We're faced with the data uncertainty to be contained in the PS, or not to be. That is the question.
 - Philosophy / We'll need to keep this in mind for the future products for navigation
 - TWCWGs' answer : End of October 2020
- Use cases: Today, 2 documents describing 2 uses cases provided by Germany, Spain use cases for S-104



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S-100 PRODUCT DEVELOPMENT TO OPERATIONS

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S-100 READINESS LEVELS

Que signifie un niv. De produit S-1xx dans le monde de la S-100?

Required Product Specification Component	Level 1 V1.0.0	Level 2 V1-2.0.0	Level 3 >v2.0.0	Level 4 >v2.0.0	Level 5 >v2.0.0
Main Document (Defines the relevant parts of S-100 that are required for a product specifications)	✓	✓	✓	✓	✓
A Default Encoding (e.g. 8211, GML, HDF5)	✓	✓	✓	✓	✓
S-100 Compliant Feature Catalogue	✓ (draft)	✓	✓ (final)	✓	✓
Data Classification and Encoding Guide	✓ (draft)	✓	✓ (final)	✓	✓
S-100 Compliant Portrayal Catalogue NOTE: Not every specification will need a portrayal catalogue		✓	✓	✓	✓
Data Quality Checks (Validation)		✓	✓	✓	✓
Test Data Sets		✓	✓	✓	✓
Exchange Catalogue and Discovery Metadata		✓	✓	✓	✓
Encryption/Digital Signatures			✓	✓	✓
Interoperability			✓	✓	✓
Alerts and Indications				✓	✓
Operational Data					✓
*ECDIS Only					



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SOME ISSUES

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- What cells should be “tide aware”:
 - Route navigation planning, approaches, harbour?
- Size cell, water level increment report and display, smoothing, punctual info?
 - => S-100s' WG. (cf;WG matrix under the authority of IHO)
- Can semi automated methods of producing water level areas(e.g. gridding or tin derived depth areas)
 - => S-100:multi S-1XX (bathymetry, water level, under keel clearance, ENCWG, DQWG, NIPWG)
- Respect: From the IMO Performance Standards for ECDIS: “It should not be possible to alter the contents of the ENC or SENC information.”

NIPWG: NAUTICAL INFORMATION PROVISION

DQWG: Data Quality

TWCWG: Tide water level and current

NCWG: NAUTICAL CARTOGRAPHY

S-111 Use Cases

- [G. Seroka, K. Hess, U.S. \(NOAA Office of Coast Survey\)](#)
- [S-111 Test Case Germany](#)
- [Version 0.1 IHO TWCWG 17 March 2021](#)

[S-104 Test Case Germany](#)

- [Slides \(Germany\)](#)
- [S-104 Test Case Spain](#)
- [Show cases TWCWG S104 AIS 0.1](#)
- [From TWCWG4: Extract](#)
- Slides during session