



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

## **Report of the Data Quality Working Group**

DQWG Chair Edward HANDS

**Agenda Item 5.5A**



IHO

# WORKING GROUP UPDATES

International  
Hydrographic  
Organization

New Chair ( Edward Hands, NO) and Vice Chair (Lingzhi Wu, CN) since HSSC 13

DQWG has met once since HSSC 13

17<sup>th</sup> DQWG meeting – Feb 2022  
VTC Event - 38 delegates

17 member states  
2 representatives from the RENCs  
5 Expert contributors

The following subWG have met during  
this period

- CATZOC SubWG
- Product Specification SubWG





IHO

# PROGRESS DURING THE PERIOD

International  
Hydrographic  
Organization

## Review S-1xx Product Specifications (Ed 1.0.0 or higher)

- This was **high priority** work item and a subWG comprising of the DQWG Vice Chair, and representatives from NL,SE and UNH.
- The subWG has conducted a review of the data quality chapters of 8 published S-1xx PSs including: S-101, S-102, S-111, S-121, S-122, S-123, S-127 and S-129.
- The recommended data quality measures of each S-1xx PS were identified and checked.
- A cross check matrix was prepared for the different S-1xx products in accordance with IHO publication S-97 Ed 1.1.0 - IHO Guidelines for Creating S-100 Product Specifications.
- A report is being prepared to set out the key findings and recommendations for the individual Product Specifications.
- A template for the DQ chapter of S-1xx Product Specifications is being prepared.
- The subWG will continue to review new and amended product specifications.



IHO

# PROGRESS DURING THE PERIOD

## Review S-1xx Feature Catalogues

- The aim: conduct a crosscheck review of S-1xx FC against S-101 to identify differences and highlight any potential interoperability issues.
- Original plan had been to await 1.1.0 of the S-101 Feature Catalogue.
- Ed 1.0.2 of the S-101 Feature catalogue was delivered April 2022.
- Following discussions with the chair of the S-101 PT agreed that the review work would begin as soon as Ed 1.0.2 was made available.
- Tool Developed by NOAA to convert XML to XLSX format for ease of interpretation.
- Tool enables inconsistencies within S-101 and with other S-1xx based Feature Catalogues to be identified.
- subWG established to conduct the review – lead by Vice Chair.
- Tool has been used to convert Ed 1.0.2 of S-101 FC and review work is underway – expected completion end of October 2022.



IHO

International Hydrographic Organization

Number	Feature type	Number	Attribute or Role Type	Type	Number	Association	Role Ref	Number	Feature or Information	Type
8.5	Quality of Bathymetric Data	3.65	categoryOfTemporalVariation	S						
		3.77	dataAssessment	S						
		3.86	depthRangeMaximumValue	S						
		3.87	depthRangeMinimumValue	S						
		4.3	featuresDetected	C						
		3.104	fullSeafloorCoverageAchieved	S						
		4.28	surveyDateRange	C						
		4.42	zoneOfConfidence [m:{1,∞}]	C						
		4.9	information [m:{0,∞}]	C						
			composition	association ref	6.2	QualityOfBathymetricDataComposition	defines	7.5	SpatialQuality	I
8.6	Sounding Datum	3.213	verticalDatum	S						
		4.9	information [m:{0,∞}]	C						
8.7	Vertical Datum of Data	3.213	verticalDatum	S						
		4.9	information [m:{0,∞}]	C						

S-1xx Product Specification Converter - Version 1.0.0

Convert

Convert XML to XLSX...

Progress / Status

Completed saving to Excel workbook file.

Log messages:

```

14-Mar-2022 11:26:43 - Started converting XML file: C:\Users\hanedw\Desktop\FC review\2022.02.28] S-101_1.0.2(Interim V1).xml
14-Mar-2022 11:26:43 - Reading input XML file...
14-Mar-2022 11:26:43 - Initializing Excel workbook...
14-Mar-2022 11:26:44 - Populating 'How To Read' worksheet...
14-Mar-2022 11:26:44 - Populating 'Simple attributes' worksheet...
14-Mar-2022 11:26:45 - Populating 'Complex attributes' worksheet...
14-Mar-2022 11:26:46 - Populating 'Roles' worksheet...
14-Mar-2022 11:26:46 - Populating 'Associations' worksheet...
14-Mar-2022 11:26:46 - Populating 'Information types' worksheet...
14-Mar-2022 11:26:46 - Populating 'Feature types' worksheet...
14-Mar-2022 11:26:54 - Completed populating all worksheets.
14-Mar-2022 11:27:09 - Saving to Excel workbook file (be patient; this may take a while)...
14-Mar-2022 11:27:49 - Completed saving to Excel workbook file.
14-Mar-2022 11:27:49 - Saved data to Excel workbook file: C:\Users\hanedw\Desktop\FC review\2022.02.28] S-101_1.0.2(Interim V1).xlsx

```

IHO Data Quality Working Group

National Ocean Service Office of Coast Survey

Items in standard text are mandatory  
*Items in italic text are optional.*

S = Simple Attribute  
C = Complex Attribute  
I = Information types  
F = Feature types



IHO

# PROGRESS DURING THE PERIOD

International  
Hydrographic  
Organization

## Review S-100 Section 4C

- Revision of S-100 Part 4c to bring it up-to-date with changes to ISO standards to make it consistent with S-97 part C which is based on ISO 19157.
- Although it is too late to get the revision into Edition 5.0.0 of S-100 it has been agreed that it can go in as a clarification post edition 5 since it is not extending anything.
- Chair has been working on the changes hoped to have it complete before summer 2022.
- Attempt to establish a Drafting group at DQWG 17 – no volunteers at this stage.



IHO

# PROGRESS DURING THE PERIOD

International  
Hydrographic  
Organization

## Survey- CATZOC Guidance Document

- This is also a **high priority** work item.
- SubWG established DQWG 16 comprising of Chair and representatives from CA, DK, FR, NL, UK, US, CSMART, UNH.
- 3 meetings of the SubWG and work by correspondence.
- Best practice examples for CATZOC allocation from 10 HO's
- Conversion matrices developed through collaboration between UNH and SHOM.
- HSWG provided valuable input following review of draft version 0.2.
- Version 0.3 is currently out for review with subWG.
- Planned to have final draft ready end of summer 2022 for presentation to HSWG ahead of submission to HSSC 15.



IHO

# PROGRESS DURING THE PERIOD

International  
Hydrographic  
Organization

## Translation of S-67

- Chinese language version of S-67 was now finished and has been added to the official IHO Catalogue of Publications.
- China MSA will maintain its updates in Chinese to ensure its consistency with the latest English language version.
- Work ongoing on the French language version – completion expected summer 2022.





IHO

# PROGRESS DURING THE PERIOD

International  
Hydrographic  
Organization

## Support to other IHO working Groups

- Primary focus assisting with a considerable redrafting of B-12 document and specifically to chapter 4, which relates to Data Quality.
- Intended that the Survey to CATZOC guidance document will provide valuable input to the required CSB Guidance paper once completed.
- Chair attended the following meetings:
  - CSBWG11(September 2021)
  - S-101 PT 8 (December 2021)
  - S-1001WG6 (January 2022)
  - CSBWG12 (Mar 2022)
  - Meetings of the HSSC ISO 9001 Cell
  - MASS PT meetings



IHO

# WAY FORWARD

International  
Hydrographic  
Organization

- The first priority is to finalise the Survey to CATZOC guidance document as this is a high priority HSSC task. Guidance to CSBWG will follow from this work.
- Complete review of Feature Catalogues and report findings to relevant WG.
- Continue to follow developments in autonomous shipping.
- The DQWG will have an increasingly important role in the future with a greater requirement for active participation from Member State representatives.



**IHO**

# **PROBLEMS OR OUTSTANDING ISSUES**

International  
Hydrographic  
Organization

- Chair vacancy (per 01 June 2022)
- Secretary vacancy

**IHO**

# WORK PLAN

International  
Hydrographic  
Organization

Task	Work Item	Priority	Start Date	End Date	Status
B.2	Development of a minimum standard for Data Validation in S-1xx based products.	M	2018	2024	P
B.3	Review S-1xx based PS (Ed.1.0.0 or higher)	H	2021	2022	O
B.4	Review S-1xx Feature Catalogues	M	2021	2023	O
C.1	Review S-100 Section 4C.	L	2022	2024	O
D.2	Provide guidance documentation how to populate CATZOC values	H	2021	2023	O
G.1	Monitor development of autonomous shipping by the industry	M	2020	2022	O



**IHO**

# **ACTIONS REQUESTED FROM HSSC**

International  
Hydrographic  
Organization

The HSSC is invited to:

- a. Note the report
- b. Endorse the work plan presented
- c. Encourage IHO member states to actively support the work of the DQWG