



13th Meeting of the Hydrographic Services and Standards Committee

Report of the Data Quality Working Group

Agenda Item 05.5A

HSSC-13, VTC Event, 3 – 7 May 2021



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS

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16th meeting – Feb 2021

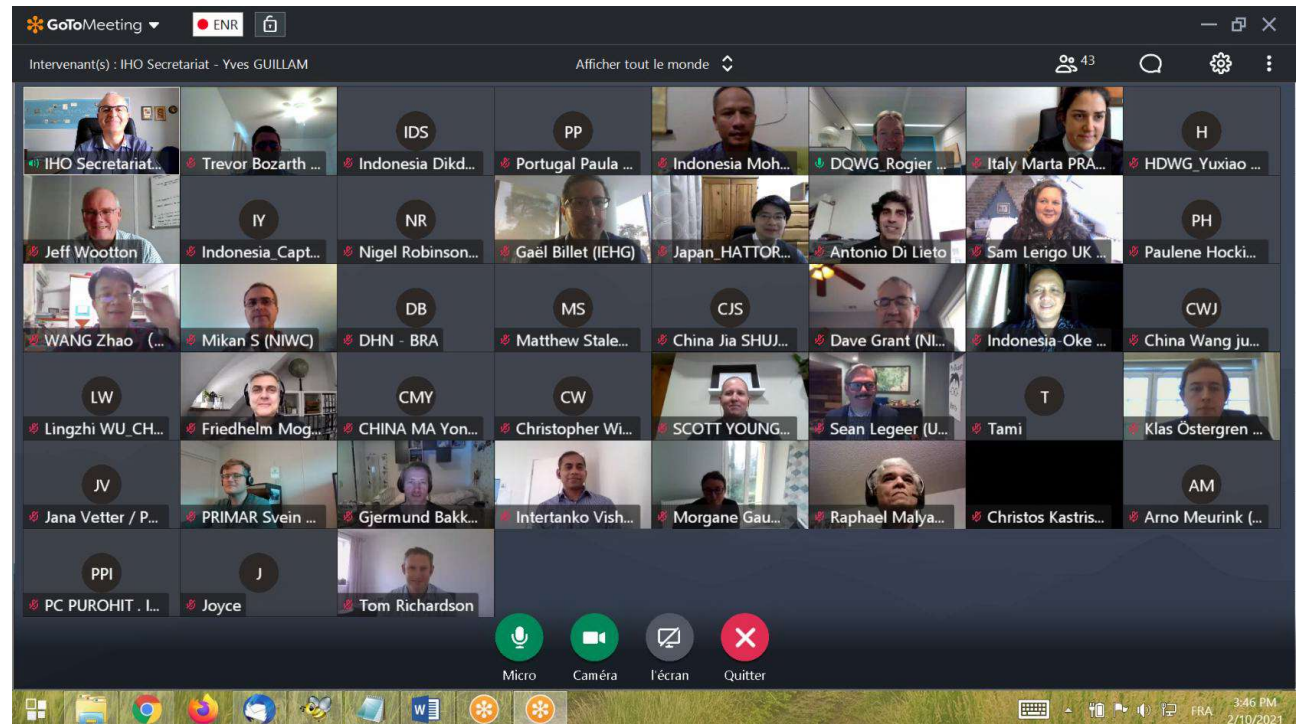
VTC Event – 46 delegates

18 Member States

2 RENCs

7 Expert Contributors

2 Stakeholders





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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS REVIEW S-1XX BASED PRODUCT SPECIFICATIONS

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1. Review of the S-101 Feature Catalogue against Data Classification Encoding Guide.
2. Work by correspondence (Sep-Nov 2020).
3. Inconsistencies (>300) identified and reported to S-101PT.



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Reference Documents

Last Update: **4 February 2021**

Quick Reference S-1xx Feature Catalogue	version dated 1 February 2021 (.zip)
S-101 ENC Product Specification, Appendix C, Feature Catalogue, Edition 1.0.0, September 2020	Drafted (.pdf) by DQWG as reference document for review process of S-1xx based Product Specifications (September 2020)
National Methodologies: from survey data to CATZOC values	Australia , Brazil , Finland , France (eng. ; fra.) , Italy , Japan , Netherlands , Norway v2 , United Kingdom , USA
Quality of Bathymetric Data - Decision Tree (as designed for S-101)	under discussion with S-101 PT (as of 4 Feb 2021)
Data Validation ISO Principles	Presentation

S-1xx Quick Reference created (manually)

FC.xml -> easy readable and manageable Excel sheets

Allows easy human understanding between different S-1xx FCs



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS EXAMPLE OF S-101 FC IN EXCEL FORMAT

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US-NOAA has developed software that automatically converts xml format into Excel layout below (freely available soon).

Number	Feature type	Number	Attribute	Type	Number	Attribute	Type	Number	Attribute	Type
8.106	Deep water route	3.68	<i>categoryOfTrafficSeparationScheme</i>	S						
		4.2	<i>featureName</i>	C						
			aggregation	association ref	6.9	DeepWaterRouteAggregation	consistsOf	8.104	DeepWaterRouteCentreline	F
								8.105	DeepWaterRoutePart	F
			aggregation	association ref	6.13	TrafficSeparationSchemeAggregation	componentOf	8.115	<i>TrafficSeparationScheme</i>	F
			association	association ref	6.5	AidsToNavigationAssociation	consistsOf	8.162	BeaconCardinal	F
								8.163	BeaconIsolatedDanger	F
								8.161	BeaconLateral	F
								8.164	BeaconSafeWater	F
								8.165	BeaconSpecialPurposeGeneral	F
								8.155	BuoyCardinal	F
								8.159	BuoyEmergencyWreckMarking	F
								8.160	BuoyInstallation	F
								8.156	BuoyIsolatedDanger	F
								8.154	BuoyLateral	F
								8.157	BuoySafeWater	F
								8.158	BuoySpecialPurposeGeneral	F
								8.166	Daymark	F
								8.167	LightFloat	F
								8.168	LightVessel	F
								8.41	Landmark	F
								8.48	Pile	F

standard = mandatory field

Italic = optional field



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS - SUBWGs

CATZOC guidance / CSB
data inclusion

DQWG

review PS

review FCs



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS GUIDANCE TO HYDROGRAPHIC OFFICES (1)

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1. The DQWG considered a request received from the CSBWG seeking some support to promote the use of crowd sourced bathymetry in nautical charts, in particular when there is no other data available.
2. Develop some guidelines and recommendations to Hydrographic Offices based on best practices to allocate CATZOC values (or S-101 ZOC values) from survey data qualified in application of the new Ed. 6.0 of S-44 - IHO Standards for Hydrographic Surveys.



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS GUIDANCE TO HYDROGRAPHIC OFFICES (2)

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1. DQWG subWG held [VTC meeting \(April 2021\)](#)¹
2. Draft paper “[Guidelines and recommendations for HOs to allocate CATZOC values](#)” and [presentation](#).
3. Related documents / standards: S-4, S-44, S-57 UOC, S-67, S-101, S-102, B-12, C-51, INSPIRE D2.8.II.1 Data Specification on Elevation.

¹<https://iho.int/en/dqwg-vtc-2021>



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS GUIDANCE TO HYDROGRAPHIC OFFICES (3)

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1. Process flow from ping to chart

- Data capture, associated accuracy and evaluation according to S-44 Ed. 6.0.0
- Data storage in vector format (depth contours / soundings / depth areas) and associated uncertainty values.
- Data storage in grid format and associated uncertainty values.
- Data quality measures and recommended target results (validation).
- Assigning appropriate CATZOC values.
- Added value of CSB data.



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SELF-CONSISTENCY OF ELEVATION (DEPTH) DATA

- Elevation data in the different spatial representation types should maintain integrity and positional consistency, at least when coming from the same data provider and at the same compilation scale.
 - S-101 contours/soundings should match S-102 grid data.
 - S-101 accuracy values should match S-102 accuracy values (i.e. the accuracy associated with a sounding, should have the same value as an S-102 node at that exact same location).



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PRINCIPAL ACTIVITIES AND ACHIEVEMENTS TRANSLATION OF S-67

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- Translation of IHO Standard Mariners' Guide to Accuracy of Depth Information in Electronic Navigational Charts (ENC) (Edition 1.0.0, September 2020) into Spanish completed, French and Chinese are work in progress.



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TOPICS FOR CONSIDERATION BY HSSC / LIAISON WITH OTHER WGs/PTs

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- Autonomous shipping and Data Quality – mindmap ([DQWG16-09.2A](#))
- Accuracy of Chart and Land Survey Vertical Datums ([DQWG16-INF.03](#))
- Chair attended the following meetings:
 - S-101PT6 (Feb 2021)
 - S-102PT8 (Mar 2021)
 - TWCWG5 (Mar 2021)
 - CSBWG10 (Mar 2021)
- Implementation of ISO-9001 principles for development of S-101 Ed.2.0.0 by HSSC Vice-Chair, DQWG Chair, S-101PT Chair, two subject matter experts from Sweden. (ref [HSSC13-05.5B](#))



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PROBLEMS OR OUTSTANDING ISSUES

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1. Chair vacancy (per 01 June 2021)
2. Vice Chair vacancy
3. Acting Secretary.

Norway has nominated a candidate for Chair position
China has nominated a candidate for Vice-Chair position

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FUTURE WORK PROGRAMME

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Task	Work item	Priority	Milestones	Start Date	End Date	Status
B.2	Development of a minimum standard for data validation in S-1xx products	M	S-101 Ed.2.0.0	2018	2024	P
B.3	Review S-1xx based PS (Ed.1.0.0 or higher)	H	DQWG17	2021	2022	O
B.4	Review S-1xx FCs (Ed.1.0.0 or higher)	M	S-101 Ed.1.1.0	2021	2023	O
C.1	Review S-100 section 4C	L	S-100 Ed.5.0.0	2022	2024	P
D.2	Provide guidance documentation how to populate CATZOC values	H	DQWG17	2021	2022	O
G.1	Monitor development of autonomous shipping by the industry	M	DQWG17	2020	2022	O



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ACTIONS REQUESTED FROM HSSC

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1. Note this report.
2. If no other candidates at end of HSSC13, DQWG IHO MS present are requested to approve Chair and Vice-Chair nominees.

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