19th Meeting of the Data Quality Working Group (DQWG)
Video-teleconference (VTC), 25 – 26 March 2024

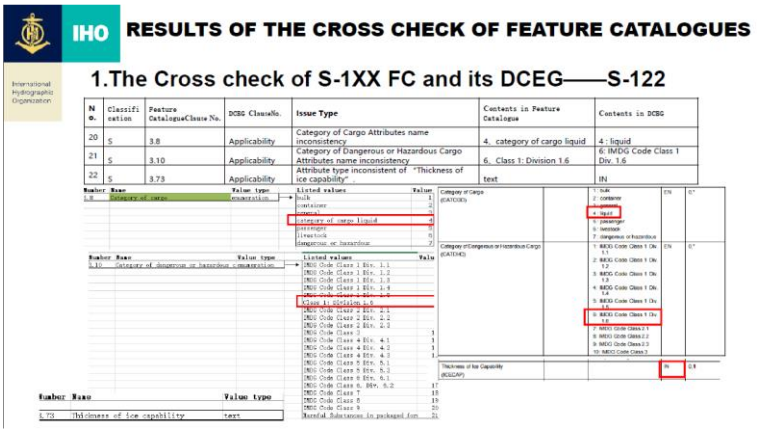
Contribution to the IHO Work Programme 2024	
Task 2.1.2.6	Organize, prepare and report meetings of DQWG
Task 2.4.8 & 2.4.9	Maintain S-67 – Mariner's Guide to Accuracy of Depth Information in ENCs
Task 2.8.6	Ensure that data quality aspects are addressed in an appropriate and harmonized way for all relevant standards

The 19th meeting of the Data Quality Working Group (DQWG) was held as a remote video-teleconference (VTC) event from the IHO Secretariat, Monaco, from 25 to 26 March.

The meeting was chaired by Mr Lingzhi Wu (China). Thirty-two registered delegates representing 16 Member States (Brazil, Canada, China, Denmark, Egypt, Finland, France, India, Indonesia, Netherlands, New Zealand, Norway, Russian Federation, South Africa, United Kingdom[1] and United States), one representative of the RENCs (PRIMAR), five expert contributors (IEHG[2], Portolan Sciences, SevenCs, CSMART Carnival, and University of New Hampshire) attended the meeting. The IHO Secretariat was represented by Assistant Director Yves Guillam.

The DQWG noted the reports from NIPWG and TWCWG on data quality matters: NIPWG confirmed its intention to use S-97 Part C on their S-1xx Product Specifications when moving to Ed. 2.0.0; the consequences of the focus of S-104 Product Specification, now limited to water levels adjustments to be applied in conjunction to S-102, were also noted. The Chair presented a report on the outcome of the implementation of the cross check of data quality chapters of S-100 based product specification and spotted those Product Specifications that are not harmonized, or do not comply with S-97. Feedback will be reported to the developers as appropriate.

Throughout a very comprehensive presentation, the Chair reported on the work of the Feature Catalogue SubGroup (France, US, SevenCs) of the DQWG. The SubWG conducted the cross-check of feature catalogues of S-121 Ed. 1.0.0, S-122 Ed. 1.0.0, S-123 Ed. 1.0.0, S-124 Ed. 1.0.0, S-127 Ed. 1.0.0, S-128 Ed. 1.0.0, S-130 Ed. 1.0.0 and S-131 Ed. 1.0.0.



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In addition, the results of the review of S-1xx feature catalogues reported in the previous meeting (DQWG18) were updated against S-101 Ed 1.2.0.

In response to HSSC[3] who had encouraged Member States to start populating appropriate POSACC / SOUACC values in existing S-57 ENCs for relevant spatial objects in preparation of the conversion to S-101 ENCs, PRIMAR provided some interesting statistics. The DQWG thanked PRIMAR for this action but suggested some further analysis, prior to HSSC16 if possible, to quantify the order of magnitude of encoding increase (total number of soundings for example).

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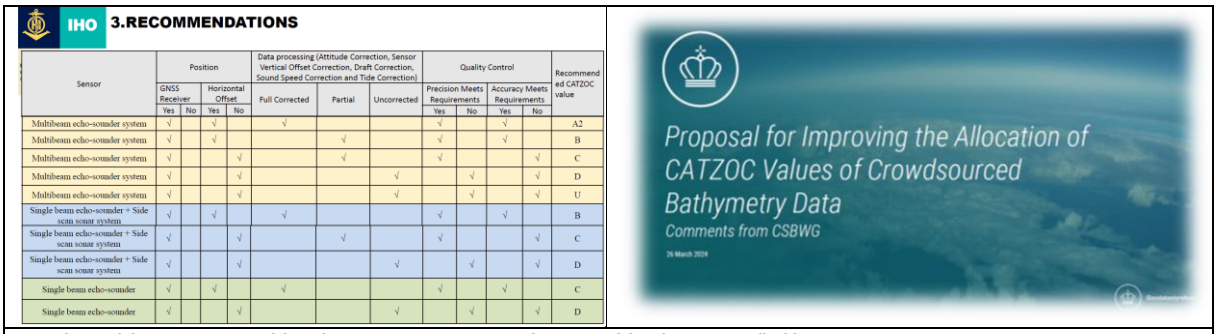
[1] Including Chairs of the Tides, Water Levels and Surface Currents Working Group (TWCWG), of the ENC Standards Maintenance Working Group (ENCWG), and of the S-101 Project Team (S-101PT).
[2] Inland ENC Harmonization Group.
[3] @HSSC15/55 refers.

Following up on a decision made by HSSC, the DQWG and ENCWG finally prepared a new proposed Ed. 2.0.0 of S-66 - *Facts about Electronic Charts and Carriage Requirements*, which amalgamates into one single publication: S-66, S-67 Edition 1.0.0 - *Mariners' Guide to Accuracy of Depth Information in Electronic Navigational Charts (ENC)*, Basic information for ECDIS users on ECDIS mandate and electronic charts ENC & RNC, ENCWG Information Papers, ENC and ECDIS Cyber Security Guidelines. ENCWG and DQWG are currently reviewing the proposed Ed. 2.0.0 of S-66, aiming to submit it to the endorsement of HSSC at their meeting in May 2024.

There were fruitful discussions initiated by the Chair about Ed. 1.0.0 of S-68 - *Guidelines and Recommendations for Hydrographic Offices for the Allocation of CATZOC/QoBD[4] from Survey Data* aiming to design a work plan towards a future Ed. 2.0.0. The meeting agreed that there was a need to engage in the development of a new Edition 1.1.0 as a first step, since the testing and experiment phase cannot be considered as completed[5]. The Chair of the ENCWG suggested also that this publication should be considered as an appendix to S-65 in the future. Still in the context of a future edition of S-68, an initial proposal was made for improving the allocation of CATZOC values *from crowdsourced bathymetric data* (and not only from systematic hydrographic surveys). Noting the comments received from several parties including the Crowdsourced Bathymetry Working Group (CSBWG) well reported by the representative of Denmark, the meeting agreed that more work was needed before inclusion into S-68. The involvement of the CSBWG (B-12 custodian) and HSWG (S-44 custodian) was highly recommended.



IHO 3.RECOMMENDATIONS

Sensor	Position				Data processing (Attitude Correction, Sensor Vertical Offset Correction, Draft Correction, Sound Speed Correction and Tide Correction)			Quality Control				Recommended CATZOC value
	GNSS Receiver		Horizontal Offset		Full Corrected	Partial	Uncorrected	Precision Meets Requirements		Accuracy Meets Requirements		
	Yes	No	Yes	No				Yes	No	Yes	No	
Multibeam echo-sounder system	√		√		√			√		√		A2
Multibeam echo-sounder system	√		√			√		√		√		B
Multibeam echo-sounder system	√			√		√		√			√	C
Multibeam echo-sounder system	√			√			√		√		√	D
Multibeam echo-sounder system	√			√			√		√		√	U
Single beam echo-sounder + Side scan sonar system	√		√		√			√		√		B
Single beam echo-sounder + Side scan sonar system	√			√		√		√			√	C
Single beam echo-sounder + Side scan sonar system	√			√			√		√		√	D
Single beam echo-sounder	√		√		√			√		√		C
Single beam echo-sounder	√			√			√		√		√	D

On the table 2 proposed by the DQWG on crowdsourced bathymetry (left),
"*the Danish Geodata Agency[6]:*
• *Supports the creation of guidelines on how to assess quality of CSB data for nautical charting.*
• *Suggests the involvement of both the CSBWG and HSWG, also to keep the guidelines aligned with B-12 and S-44 publications.*
• *Suggests to focus the guidelines on CSB data collected using SBES, exploring the impact on quality for various processing steps."*

The Chair presented a review of proposed amendments to S-97 Part C, as well as a report on "*Recommendations on the data quality evaluation of S-100 products*". The IHO Secretariat and the Chair of the S-101PT questioned whether these recommendations, when finalized, would end up in S-158 or instead rolled into S-97. This will be shared with the S-100WG Chair at HSSC-16.

The critical importance of data quality in MASS navigation machine readable systems is well recognized. The Chair presented his views on the possible contribution of the DQWG to the activities of the MASS Project Team. He offered to establish a SubGroup to discuss these issues with MASS PT in order to draft a guideline document to explain how to implement data quality evaluation from a MASS user's perspective. The SubGroup has received no adhesion to date.

[4] Quality of Bathymetric Data.
[5] Very few feedback from IHO Member States, except from those Members of the DQWG.
[6] Also as Member of DQWG, CSBWG and HSWG.

Thanks to the official nomination received from China (MSA), Mr Lingzhi WU (China) was re-elected at the meeting as Chair of the DQWG in application of the Rules of Procedure (1st meeting after the Assembly), while the position of Vice-Chair remains vacant (no nomination received so far).

The participants welcomed the provisional offer from the Chair of the DQWG to host the next meeting from 11 to 13 March 2025 in China (dates, location and venue to be confirmed no later than September 2024).

Participants in the DQWG-19 VTC Meeting