

## Report of the Data Quality Working Group

<b>Submitted by:</b>	Chairman, DQWG
<b>Related Documents:</b>	IHO Circular Letter 35/2017, 50/2017 DQWG12-08.1A HSSC9-05.5B, 05.5C, 05.5D
<b>Related Projects:</b>	

<b>Chair:</b>	Mr Rogier Broekman, Netherlands
<b>Vice-Chair:</b>	Mr Sean Legeer, USA
<b>Secretary:</b>	Mr. Mike Prince, Australia
<b>Member States:</b>	Australia, Brazil, Finland, France, Italy, Mexico, Netherlands, Norway, Sweden, UK, USA
<b>Expert Contributor Organisations:</b>	Teledyne CARIS, Eivind Mong, Chris Howlett
<i>see Annex A for full details</i>	

### Meetings Held During Reporting Period

DQWG12 / The Hague, June 13-15, 2017  
Next meeting (DQWG13) / Monaco, Jan 15-19, 2018

### Terms of Reference

At meeting 12 the members discussed the present ToR's and associated tasks from HSSC-8. The end result from this discussion was that there is an ongoing role for managing and coordinating the quality aspects of many attributes. The members decided that it should be recommended to HSSC at its 9<sup>th</sup> meeting, that the DQWG continues as a WG with new ToRs to clearly identify the role of the WG (See Doc. HSSC9-05.5B).

### Work Program

US has performed internal guidance on the population of CATZOC values in ENC's. US presented this at the meeting and encouraged other members to follow up on this exercise. NL has done this post-meeting. This method could lead to developing best practise guidance on how to manage CATZOC by HOs. Other HOs would be invited to share their experience, with the aim for the DQWG to draft some guidelines.

The WG has performed a review on S-100 section 4C with ISO and INSPIRE standards on quality. This paper is now available for S100-WG.

A prospective information paper (DQWG12-08.1A) on data quality indicators for bathymetric data to be displayed on ECDIS was introduced to DQWG aiming to revise the principles of data quality classification resulting in a less complex and more intuitive solution, and to search for more intuitive options for their symbolization. This was discussed at the meeting and further developed by correspondence, resulting in a paper for consideration by HSSC-9 (See Doc. HSSC9-05.5C: Proposal for portrayal of bathymetry quality in S-101).

AU has drafted a proposal for HSSC-9: "Mariners guide to accuracy and reliability of electronic navigational charts (ENC)." This paper addresses the task of educating both the mariner and cartographer and is submitted for endorsement at HSSC-9 as a new IHO publication S-67 (See Doc. HSSC9-05.5D).

## Progress on HSSC Action Items

There were two action items arising from HSSC8 assigned to DQWG.

Action HSSC8/38 which dealt with the importance of populating ENCs with assessed CATZOC values (1 to 5). Internal guidance on the use of CATZOC is developed by two members with more to follow. In the workplan for 2018, work items are identified to collect common practise by HO's, develop guidelines on best practise how to populate ENCs with assessed CATZOC values and a guideline how the transition from S-57 CATZOC values to S-101 Quality of Bathymetric Data can be handled.

Action HSSC8/39 which dealt with the visualization of bathymetric uncertainties data in S-101 and develop appropriate recommendations on the way forward. This has been drafted and a proposal is made to HSSC-9: "Proposal for portrayal of bathymetry quality in S-101."

## Problems Encountered

Slow progress in between meetings. This has been addressed after meeting 12 by promoting working by correspondence using DQWG Letters via the website. The group consists of 11 members states of which 6 have participated in live meetings over the past years. One member has indicated to change from correspondence member to active member. Another member has indicated to change from active member to correspondence member.

## Conclusions and Recommended Actions

1. The DQWG recommends the continuation of the activities of this working group under new TORs that have been drafted with the objective **"to ensure that the data quality aspects are addressed in an appropriate and harmonized way for all S-100 based product specifications."**
2. The WG has drafted a proposal how to display data quality that may actually be adopted by the industry and mariners. This proposal needs first to be considered by the NCWG.
3. The need to produce ENCs with assessed values for CATZOC / Quality of Bathymetric Data will increase in the future. Harmonization on the data model and guidance of this practise is needed. It is recommended that the DQWG prepares guidelines on the matter.
4. If agreed, HO's are invited to share their experience on the population of CATZOC values in ENCs. This information will not be published but used to develop guidelines (see paragraph 3 above). It is a critical pre-condition to ensure a smooth transition from S-57 to S-101.
5. To fulfil these goals Members States interested in delivering a contribution to these developments are invited to register by mid-December, in the DQWG-13 meeting (January 2018).

## Justification and Impacts

The need for expertise in data quality matters is likely to gain importance in the future with new developments ahead in E-navigation. Harmonized implementation of data quality in S-101 is needed. ISO and other international standards on data quality should be monitored and checked against S-100 based products to allow for interchange of information. HO's will need guidance on how to implement data quality registers in their digital products.

**Action Required of HSSC**

The HSSC is invited to:

- a. Note the report
- b. Approve proposal in section 1 under the new DQWG TORs
- c. Endorse proposals in sections 2 to 4
- d. Consider proposal in section 5
- e. Approve the work plan 2018-19 which is consistent with the new TORs

## Membership of DQWG

Member State	Name of Delegate	email
Australia	Mike PRINCE	<a href="mailto:mike.prince@defence.gov.au">mike.prince@defence.gov.au</a>
Brazil	Adriano VIEIRA DE SOUZA (correspondence)	<a href="mailto:adriano@chm.mar.mil.br">adriano@chm.mar.mil.br</a>
	Julierme GONÇALVES PINHEIRO (correspondence)	<a href="mailto:pinheiro@chm.mar.mil.br">pinheiro@chm.mar.mil.br</a>
Finland	Antti CASTRÉN	<a href="mailto:antti.castren@fta.fi">antti.castren@fta.fi</a>
France	Nicolas DAVID	<a href="mailto:nicolas.david@shom.fr">nicolas.david@shom.fr</a>
Italy	Carlo MARCHI (correspondence)	<a href="mailto:carlo.marchi@marina.difesa.it">carlo.marchi@marina.difesa.it</a>
Mexico	Juan José VILLANUEVA Hernández (correspondence)	<a href="mailto:asunext.hidro@gmail.com">asunext.hidro@gmail.com</a>
Netherlands	Rogier BROEKMAN (CHAIR)	<a href="mailto:r.broekman.01@mindef.nl">r.broekman.01@mindef.nl</a>
Norway	Kjetil WIRAK (correspondence)	<a href="mailto:kjetil.wirak@statkart.no">kjetil.wirak@statkart.no</a>
Sweden	Ulf OLSSON (correspondence)	<a href="mailto:ulf.olsson@siofartsverket.se">ulf.olsson@siofartsverket.se</a>
	Kennet SWAHN (correspondence)	<a href="mailto:kennet.swahn@siofartsverket.se">kennet.swahn@siofartsverket.se</a>
United Kingdom	Edward HOSKEN	<a href="mailto:edward.hosken@ukho.gov.uk">edward.hosken@ukho.gov.uk</a>
USA	Whitney ANDERSON	<a href="mailto:whitney.e.anderson@nga.mil">whitney.e.anderson@nga.mil</a>
	Brian HEAP	<a href="mailto:brian.r.heap@nga.mil">brian.r.heap@nga.mil</a>
	Sean LEGEER (VICE CHAIR)	<a href="mailto:sean.legeer@noaa.gov">sean.legeer@noaa.gov</a>

Observer Organisation	Name of Delegate	email
Teledyne CARIS	Karen COVE	<a href="mailto:karen.cove@caris.com">karen.cove@caris.com</a>
	Eivind MONG	<a href="mailto:eivind@mail4mong.name">eivind@mail4mong.name</a>
	Chris HOWLETT	<a href="mailto:chris.m.howlett@btinternet.com">chris.m.howlett@btinternet.com</a>

## DQWG Proposed Work Plan – 2018

## DQWG Tasks

- A. Provide WG and PT a checklist aiming to develop, when appropriate, data quality components within product specifications
- B. Periodically review S-100 based product specifications to ensure the data quality aspects have been referred to DQWG
- C. Monitor new developments of ISO and other international standards, check against S-100 based product specifications and advise accordingly
- D. Provide guidance on data quality aspects to hydrographic offices, in particular to ensure harmonized implementation
- E. Provide data quality educational material for the use of mariners
- F. Advise on the ways ECDIS displays data quality information of product specifications
- G. Investigate and advise on possible legal aspects of data quality in product specifications
- H. Propose new data quality topics for consideration by HSSC
- I. Conduct the annual meetings of DQWG (IHO Task 2.5.1)

Task	Work Item	Priority H-high M-medium L-low	Milestones	Start Date	End Date	Status P-planned O-ongoing C-Completed	Contact Person	Affected Pubs/Standard	Remarks
A.1	Develop checklist on data quality components	M	HSSC9	2018	2019	P	Rogier Broekman	All S-100	Ensure harmonized implementation of data quality in S-100 products
B.1	DQWG to create a work item to undertake a global review of Quality of horizontal measurement values and their definitions by the DQWG and consider a workshop to address the issue.	H	DQWG13	2018	2019	P	Rogier Broekman	S-101 DCEG	
C.1	Review S-100 section 4C	H	DQWG12	2016	2017	C	Rogier Broekman	S-100 Edition 3.0.0	Handover to S-100WG
D.1	Collect best practise of the use of CATZOC from HO's	H	HSSC9	2018	2019	P	Rogier Broekman		
D.2	Provide guidance documentation on how to populate CATZOC values	H	HSSC9	2018	2019	P	Rogier Broekman		Ref IHO CL50/2017
D.3	Provide guidance documentation on the transition from S-57 CATZOC to S-101 QoBD	H	HSSC9	2018	2019	P	Rogier Broekman		Ref IHO CL50/2017

E.1	Prepare impact paper for submission at HSSC10 for S-67 Mariners guide to accuracy of ENC v0.5.	M	HSSC10	2018	2019	P	Rogier Broekman	S-4, S-57	Upon approval of S-67 concept at HSSC9.
E.2	Investigate possible methods for how to educate practicing mariners on data quality issues.	M	HSSC10	2017	2019	O	Rogier Broekman, Mike Prince	S-4, S-57	IHO CL 51/2013 issued on this topic. To include the recommendations of HSSC5-INF4, interface with IMO/HTW (Action HSSC5/45 refers).
F.1	Continue development of Portrayal of bathymetry quality in S-101	H	HSSC9	2017	2019	O	Rogier Broekman	S-101 DCEG	Liaise with NCWG, S-100WG.
G.1	Investigate legal aspects of data quality in European framework INSPIRE	M	DQWG13	2018	2019	P	Rogier Broekman		
H.1	Liaise with other working groups and create road map with timeline for data quality items within S-10x	M	DQWG13	2015	2020	O	Rogier Broekman	S-10x	Draft roadmap is given in DQWG Letter 02/2017.