HSSC10-05.5A

Report of the Data Quality Working Group

Submitted by:	Chairman, DQWG
Related Documents:	IHO Circular Letter 50/2017, 70/2017
Related Projects:	

Chair:	Mr Rogier Broekman, Netherlands
Vice-Chair:	Mr Sean Legeer, USA
Secretary:	Vacant
Member States:	Australia, Brazil, Canada, Denmark, Finland, France, Italy, Indonesia, Japan, Mexico, Netherlands, Norway, Sweden, UK, USA
Expert Contributor Organisations:	Teledyne CARIS, IC-ENC, PRIMAR, IHO Technical Standards Support Officer
	see Annex A for full details

Meetings Held During Reporting Period

DQWG13 / 15-19 January 2018, IHO Secretariat, Monaco
Next meeting (DQWG14) / 5-8 February 2019, IHO Secretariat, Monaco

Terms of Reference

HSSC approved the new DQWG TORs as proposed by the DQWG and amended during HSSC-9. The key priority of the DQWG is to ensure that the data quality aspects are addressed in an appropriate and harmonized way for all S-100 based product specifications.

The DQWG should i) develop and maintain a data quality checklist for product specification developers; ii) periodically review S-100 based product specifications to ensure the data quality aspects have been taken into consideration and provide input papers for WGs and PTs consideration if deemed necessary; iii) monitor periodically developments of ISO and other international standards regarding quality information, and advise the S-100WG accordingly; iv) provide guidance on data quality aspects to hydrographic offices, in particular to ensure harmonized implementation; v) provide data quality educational material for the use of mariners; vi) review appropriate methodology for the display of quality information to product specification developers; vii) propose new data quality topics for consideration by HSSC.

Work Program

In order to meet its key priority, at meeting 13 the DQWG drafted a Data Quality checklist. This checklist was further improved and then sent (08 March 2018) for a review by correspondence (ref DQWG Letter 01/2018). The comments will be received no later than 20 April 2018.

Based on the draft Data Quality checklist, Product Specifications for S-111 (Surface Currents) and S-127 (Traffic Management) were reviewed and forwarded in time for their annual meeting to the appropriate WG for their consideration. For S-102 (Bathymteric Surface) one of the S-102 group members was present at meeting 13 and received several recommendations for its Product Specifications during the meeting.

At meeting 13 the S-101 Data Classification and Encoding Guide (DCEG) was reviewed for Quality of Bathymetric Data, Quality of non-Bathymetric Data and Quality of Survey. Its results were directly handed over to the IHO Technical Standards Support Officer and included into the S-101 DCEG.

Among DQWG members experiences were shared how members allocate CATZOC values, difficulties arising during the allocation proces in S-57 and exchange national methodologies from survey data to CATZOC. These experiences will help to provide guidance to HOs to ensure harmonized implementation of Data Quality in S-101.

DQWG member Canada proposed recommendations towards the development of a minimum standard for data validation, including targeting the guideline for inclusion in S-100 to make it a common guideline for all product specifications utilizing S-100. The DQWG agreed on these recommendations and submitted action D.5 in the Work Plan.

Progress on HSSC Action Items

There were two action items arising from HSSC9 where DQWG was identified as a primary actor.

Action HSSC9/35 Proposal for Portrayal of Bathymetry Quality in S-101. DQWG Letter 02/2018 - Methodology for the display of quality information – was sent out for correspondence review by DQWG members on 23 March 2018. This Letter was also made known to the Chairs of NCWG, NIPWG, ENCWG and S-100WG. The comments will be received no later than 04 May 2018.

Action HSSC9/36 Proposal for a New Publication - Mariners' Guide to Accuracy and Reliability of ENC. S-67 draft version was delivered at HSSC9. It was then decided that feedback from other WGs should be included. The feedback came as general, technical or editorial. At meeting 13 it was decided that there were so many general comments on the paper that it would need serious rework. The title is now proposed to: “Mariners Guide to the Accuracy of Depth Information in Electronic Navigational Charts.” DQWG requests HSSC to postpone the submission of Edition 1.0.0 to HSSC-11.

Problems Encountered

Ambiguity on data quality educational material for the use of mariners -> paper charts, S-57 based charts and S-101 based charts. At present the goal is set at electronic charts in S-57 format. When S-101 goes live, this documentation will need updating.

Various definitions and meanings of the words accuracy and uncertainty in IHO documents and their usage.

There is a dilemma between harmonized encoding of quality information and the allowable input in the current datamodel. HOs use different workarounds, causing lack of harmonization. With the new datamodel, harmonized encoding will be possible but can only work if HOs agree within a regional hydrographic commission.

Conclusions and Recommended Actions

Good progress was made on the development of a data quality checklist for Product Specification developers. This should align the quality chapter of separate Product Specifications and promote interoperability. Providing data quality educational material is difficult as any inconsistencies on terms and definitions on quality are coming to the surface here.

DQWG will provide guidance on data quality aspects to hydrographic offices, in particular to ensure harmonized implementation. At meeting 14, the S57 to S-101 converter (data quality only) and guidance how to decide to allocate Quality of Bathymetric Data will be adressed.

HO’s are invited to share their experience on 1) the use of CATZOC on ENC’s, 2)their national methodologies from survey data to CATZOC, 3) national methodologies how to generalize quailty information at various scales (Usage Bands). Input can be send to the Chair of DQWG.

Justification and Impacts

Once the Data Quailty Checklist is complete, it can be used by HSSC WG Chairs to:

a. Add specific instructions to their developers when they inform them on the existence of the Data Quality Checklist;
b. Share the checklist inside their respective WGs;
c. Include the DQ Checklist into the product specifications contract document (together with any other specific requirements), if and when the development is outsourced

Action Required of HSSC

The HSSC is invited to:

a. Note this report
b. Approve the title of S-67
c. Agree to postpone Edition 1.0.0 of S-67 to HSSC-11.
c. Agree to the proposal to develop a minimum standard for data validation in S-100.
c. Endorse the work plan 2018-2020

Annex A

Membership of DQWG

Member State	Name of Delegate	email
Australia	Mike PRINCE	mike.prince@defence.gov.au
Brazil	Paulo Matos (correspondence)	paulo.matos@marinha.mil.br
	Ana Mileze (correspondence)	ana.mileze@marinha.mil.br
Canada	Andrew LEYZACK	andrew.leyzack@dfo-mpo.gc.ca
	Eivind MONG (correspondence)	eivind.mong@dfo-mpo.gc.ca
Denmark	Nigel Robinson	nkeir@gst.dk
Finland	Jyrki MONONEN	jyrki.mononen@fta.fi
France	Nicolas DAVID	nicolas.david@shom.fr
Italy	Carlo MARCHI (correspondence)	carlo.marchi@marina.difesa.it
Indonesia	Cap AMRIL	koorsahli@pushidrosal.id
	Cap Haris DJOKO N	diropssurta@pushidrosal.id
	LCdr Dikdik SATRIA M	dqwg@pushidrosal.id
	Lt Gede YUSSUPIARTHA	dqwg@pushidrosal.id
Japan	Satoshi SATO	analysis@jodc.go.jp
Mexico	Juan José VILLANUEVA Hernández (correspondence)	asunext.hidro@gmail.com
Netherlands	Rogier BROEKMAN (CHAIR)	r.broekman.01@mindef.nl
Norway	Daria MULYARENKO	daria.mulyarenko@kartverket.no
Sweden	Ulf OLSSON (correspondence)	ulf.olsson@sjofartsverket.se
	Kennet SWAHN (correspondence)	kennet.swahn@sjofartsverket.se
United Kingdom	Aaron Pullen	Aaron.Pullen@ukho.gov.uk
USA	Whitney ANDERSON	whitney.e.anderson@nga.mil
	Joshua Clayton	joshua.r.clayton@nga.mil
	Brian HEAP	brian.r.heap@nga.mil
	Sean LEGEER (VICE CHAIR)	sean.legeer@noaa.gov

Observer Organisation	Name of Delegate	email
Teledyne CARIS	Karen COVE	karen.cove@caris.com
IC-ENC	Thomas RICHARDSON	thomas.richardson@ic-enc.org
PRIMAR	Svein SKJAEVELAND	svein.skjaeveland@ecc.no
IHO Secretariat	Jeff Wootton	tsso@iho.int

Annex B

DQWG Proposed Work Plan – 2019-2020

DQWG Tasks

A. Develop and maintain a data quality checklist for product specification developers
B. Periodically review S-100 based product specifications to ensure the data quality aspects have been taken into consideration and provide input papers for WGs and PTs consideration if deemed necessary
C. Monitor periodically developments of ISO and other international standards regarding quality information, and advise the S-100WG 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. Review appropriate methodology for the display of quality information to product specification developers
G. Propose new data quality topics for consideration by HSSC

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	H	HSSC11	2018	2019	O	Rogier Broekman	All S-100	To be used when checking S-100 product specifications
B.1	Review S-101 Data Classification Encoding Guide	H	DQWG13	2018	2018	C	Sean Legeer	S-101 DCEG	Workshop DQWG13
B.2	Development of a “minimum” standard for data validation in S-1xx based products	H	HSSC11	2018	2019	P	Rogier Broekman	All S-100	HSSC9/16
C.1	Review S-100 section 4C	H	DQWG14	2017	2019	O	Rogier Broekman	All S-100	Related to DQ Checklist
D.1	Collect best practise of the use of CATZOC from HO’s	H	HSSC9	2018	2019	C	Sean Legeer	S-101 DCEG	Ensure harmonized encoding
D.2	Provide guidance documentation on how to populate CATZOC values	M	HSSC11	2018	2019	P	Rogier Broekman	S-101 DCEG	Ref IHO CL50/2017

D.3	Provide guidance documentation on the transition from S-57 CATZOC to S-101 QoBD	M	HSSC11	2019	2020	P	Sean Legeer	S-101 DCEG	Ref IHO CL50/2017
D.4	Collect best practice on how to assess ZOC from surveys	M	DQWG14	2018	2019	O	Rogier Broekman	S-101 DCEG	Ensure harmonized encoding.
D.5	Development of a Minimum Standard for Data Validation	M	DQWG14	2018	2020	P	Eiving Mong	All S-100	After completion of Data Quality Checklist
E.1	Submit edition 1.0.0 of S-67 for endorsement by HSSC.	H	HSSC11	2018	2019	P	Sean Legeer	S-4, S-57	HSSC9/36
E.3	Consider a video version of S-67 when approved by MS	L	HSSC12	2019	2020	P	Rogier Broekman	S-101 DCEG	HSSC9/36
F.1	Continue development of Portrayal of bathymetry quality in S-101	H	HSSC11	2017	2019	O	Rogier Broekman	S-101 DCEG	HSSC9/35
F.2	Invite industry partners (ECDIS producers) and end users to get their input on methodology for the display of quality information	H	DQWG14	2018	2019	P	Rogier Broekman	All S-100	DQWG Letter 02/2018