

## Report of the Data Quality Working Group

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| <b>Submitted by:</b>      | Chairman, DQWG  |
| <b>Related Documents:</b> | IHO Circular Letter 25/2016 (8th Meeting of the HSSC) |
| <b>Related Projects:</b>  |   |

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| <b>Chair:</b>                            | Mr Antti Castrén, Finland   |
| <b>Vice-Chair:</b>                       | Mr Sean Legeer, USA   |
| <b>Secretary:</b>                        | (vacant)  |
| <b>Member States:</b>                    | Australia, Brazil, Finland, France, Italy, Netherlands, Norway, Sweden, UK, USA |
| <b>Expert Contributor Organisations:</b> | Teledyne CARIS  |
| <i>see Annex A for full details</i>      |   |

### Meetings Held During Reporting Period

DQWG11 / Arlington, May 10-12 2016  
 Next meeting (DQWG12) / The Hague, June 13-15 2017 (tentative)

### Work Program

Main achievement during the reporting period was the finalization of S-101 Quality of Bathymetric Data model and the decision tree driving the combined attribute value. In addition, the group has produced guidance on vertically stacked bathymetric quality as well as on temporal variation of data quality.

There was a presentation in DQWG11 on crowd sourced bathymetry by CSBWG and DQWG gave input to CSBWG's work.

### Progress on HSSC Action Items

There were two action items arising from HSSC7 which were DQWG was identified as an actor.

Action HSSC7/19 which dealt with Fuzzy areas was addressed and feedback sent to NIPWG. DQWG identified at least four categories of uncertain areas which require different approaches in data model and visualisation.

Action HSSC7/25 which dealt with Data supply chain certification. The concept was studied and discussed, but consensus of IHO's role was not reached. The overall importance of integrity of data supply chain from very beginning to the end user was endorsed.

### Problems Encountered

Time resources of active members, chair included, for this work have been most significant problem. The group also lost a very valuable resource when long time secretary and multi-WG member informed that he could not participate in group's work as significantly as before.

## **Conclusions and Recommended Actions**

DQWG seeks for an opportunity to finalize remaining open issues in first half of 2017 and then evaluate the relevance of continuing as a permanent WG. The group members have identified a number of S-1xx products as having data quality aspects. There's a need for a road map of DQ matters within the products regardless of how the work is organized.

Remaining open issues are referred in the work plan.

## **Justification and Impacts**

Even if the group recommends discontinuity the need for expertise in data quality matters doesn't disappear, but form of organizing the efforts could possibly be achieved by project teams or other organisationally lighter methods. The risk is that the member states might not be that ready to allocate time and travel budget for ad hoc team members.

## **Action Required of HSSC**

The HSSC is invited to:

- a. Note the report
- b. Endorse the work plan 2016-2017

## 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                            | <a href="mailto:adriano@chm.mar.mil.br">adriano@chm.mar.mil.br</a>                 |
|                | Julierme GONÇALVES PINHEIRO                        | <a href="mailto:pinheiro@chm.mar.mil.br">pinheiro@chm.mar.mil.br</a>               |
| Finland        | Antti CASTRÉN (chair)                              | <a href="mailto:antti.castren@fta.fi">antti.castren@fta.fi</a>                     |
| France         | Gaël MORVAN  | <a href="mailto:gael.morvan@shom.fr">gael.morvan@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<br>(correspondence) | <a href="mailto:asunext.hidro@gmail.com">asunext.hidro@gmail.com</a>               |
| Netherlands    | Rogier BROEKMAN                                    | <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   | <a href="mailto:ulf.olsson@sjofartsverket.se">ulf.olsson@sjofartsverket.se</a>     |
|                | Kennet SWAHN                                       | <a href="mailto:kennet.swahn@sjofartsverket.se">kennet.swahn@sjofartsverket.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  | <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> |

## DQWG Proposed Work Plan – 2016 to 2017

## DQWG Tasks

- A. Review ISO 19113, Geographic Information-Quality Principles, ISO 19114, Geographic Information-Quality Evaluation Procedures, and ISO 19115, Geographic Information - Metadata and propose relevant enhancements and amendments for incorporation in S-100 "IHO Universal Hydrographic Data Model" (IHO Task 2.5.2)
- B. Monitor and further develop quality indicators for hydrographic data (IHO Task 2.5.2)
- C. Maintain and extend as needed existing quality indicators in S-57 "IHO Transfer Standard for Digital Hydrographic Data", including the education of both the mariner and the cartographer, and the development of documentation (IHO Task 2.5.2)
- D. Maintain and extend as needed the presentation of data quality, as provided in S-52 "Specifications for Chart Content and Display Aspects of ECDIS" and its Presentation Library (IHO Task 2.5.2)
- E. Investigate ways of ensuring that ECDIS displays provide a clear warning or indication to the mariner on the quality of the underlying survey data, through appropriate use of the attribute CATZOC and/or improvement of the existing display capabilities (IHO Task 2.5.2)
- F. Propose new data quality topics and other applications for consideration by HSSC (IHO Task 2.5.2)
- G. Maintain and extend data quality related elements of S-100 "IHO Universal Hydrographic Data Model" (IHO Task 2.5.2)
- H. Maintain and extend data quality related elements of S-101 "ENC Product Specification" and other S-100-based Product Specifications (IHO Task 2.5.2)
- I. Conduct the annual meetings of DQWG (IHO Task 2.5.1)

| Task | Work Item  | Priority<br>H-high<br>M-medium<br>L-low | Milestones | Start Date | End Date | Status<br>P-planned<br>O-ongoing<br>C-Completed | Contact Person                  | Affected Pubs/Standard | Remarks   |
|------|--|---|------------|------------|----------|---|---------------------------------|------------------------|---|
| A.1  | Review ISO 19113, 19114, 19115 and 19157 and make recommendations for inclusion in S-100 | H                                       | DQWG12     | 2010       | 2017     | O   | Rogier Broekman,<br>Sean Legeer | S-100                  | Keeping S-100 data quality in line with ISO standards requires periodical revisiting in the future. |

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| B.4 | Develop the hierarchy approach by formalizing the hierarchy and the algorithm that drive the display | H | HSSC8                      | 2013 | 2016 | C |                              | S-101      |   |
| C.4 | Investigate possible methods for how to educate practicing mariners on data quality issues.          | M | DQWG12                     | 2010 | 2017 | O | Rogier Broekman, Mike Prince |            | Investigate in liaison with training institutions the adequacy of existing HO documentation on the quality aspects of the practical use of ENC's. IHO CL 51/2013 issued on this topic. To include the recommendations of HSSC5-INF4, interface with IMO/HTW (Action HSSC5/45 refers). |
| E.1 | Develop logic for indicators in current and proposed approaches.                                     | H | DQWG9                      | 2010 | 2014 | C |                              | -          |   |
| E.2 | Demonstrate methods to mariners.   | M | Follows S-100 demonstrator | 2012 | 2016 | C |                              | S-101, S-4 | Visualisation aspects of data quality to be moved to NCWG with DQWG assistance  |
| E.3 | Demonstrate methods to mariners  | M | Follows E.1                | 2014 | 2016 | C |                              | S-101, S-4 | Visualisation aspects of data quality to be moved to NCWG with DQWG assistance  |
| F.1 | Investigate areas of quality concern (other than survey / bathymetry)                                | M | DQWG9                      | 2010 | 2016 |   |                              | S-1xx      | Included into H.1   |
| F.2 | Investigate data quality related topics concerning crowd sourced hydrographic information            | M |                            | 2016 | 2016 | C | Antti Castrén                | S-44?      | Topic covered. Further work to be included to HSWG  |

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| F.3 | Investigate data quality related topics concerning satellite derived bathymetry                        | M |        | 2015 | 2016 | C | Antti Castren | S-44?        | Topic covered. Further work to be included to HSWG   |
| G.1 | Create and maintain general guidelines regarding data quality within IHO                               | H |        |      |      |   |               | S-100, S-10x | Included to A.1  |
| H.1 | Liaise with other working groups and create road map with timeline for data quality items within S-10x | H | DQWG12 | 2015 | 2017 | O | Antti Castrén | S-10x        | This roadmap will also have impact on organizing method of the data quality work.<br><br>The liaison includes also various smaller issues. |
| I.1 | Conduct the annual meeting of DQWG   | H | DQWG12 | 2015 | ?    | O | Antti Castrén |              | Conduct annual meeting in late spring each year.   |