**19th MEETING OF THE DATA QUALITY WORKING GROUP**

**25 - 26 March 2024 –VTC**

**DRAFT MINUTES**

1. **Opening and Administrative Arrangements**

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

The meeting was chaired by Mr Lingzhi Wu (China). 27 registered delegates representing 17 Member States (Brazil, Canada, China, Denmark, Egypt, Finland, France, India, Indonesia, Italy, Netherlands, New Zealand, Norway, Russian Federation, South Africa, United Kingdom[[1]](#footnote-1) and United States), 1 representative of the RENCs (PRIMAR), 6 expert contributors (IEHG[[2]](#footnote-2), H2i, Portolan Science, SevenCs, Carnival Australia and University of New Hampshire) attended the meeting. The IHO Secretariat was represented by Assistant Director Yves GUILLAM.

Chair expressed his warm welcome to all of the participants. In particular, he expressed a special gratitude to TWCWG chair, ENCWG chair, DQ focal points in NIPWG and CSBWG for their upcoming wonderful reports.

At the invitation of the Chair, Assistant Director Yves GUILLAM gave a welcome speech. He welcomed the representatives of the 17 Member States participating in the meeting. He highlighted the importance of the work of the DQWG and thanked all expert contributors for their valuable contributions.

Chair opened the meeting, shared some meeting protocols, and invited participants to introduce themselves one by one in order stated by Chair.

Assistant Director Yves GUILLAM reminded that there would be an agenda for the election of Chair, Vice-Chair and Secretary according to DQWG Terms of Reference because the meeting is the 1st WG meeting after the 3rd ordinary Session of the Assembly.

Chair presented the DQWG 18 final Minutes, and reported that this Minutes has been circulated to all members for review before the meeting.

**[Decision 19/01]DQWG approved** the draft agenda as presented at the meeting.

**[Decision 19/02]DQWG approved** the DQWG 18 Final Minutes.

Mr. Scott YONGBLUT provided a summary of the status of all current DQWG actions. The outstanding actions were discussed and updated accordingly, see Annex A.

The working group discussed revisions to the Terms of Reference for gender inclusive language.

**[Decision 19/03] DQWG endorsed** the amendments to DQWG ToRs.

**[Action 19/01] Chair** to submit DQWG ToRs to HSSC for approval.

The meeting emphasized the importance of keeping the membership list up to date and invited all members to send updates to the Chair or Secretariat.

**[Action19/02] DQWG Members were invited** to update the DQWG Membership list and contact details.

Before the first health break, all participants turned on their cameras and took some good group photos.

1. **Matters Relating to Upper IHO Bodies / Other WGs/PTs**

**2.1 HSSC Presentation at C-7**

Chair shared some information on new progresses of HSSC15 from the perspective of the DQWG. The key issues highlighted were:

* The HSSC Chair Group meeting on HSSC inputs to the revised IHO Strategic Plan had been held in February 2, 2024. Draft inputs had been uploaded in HSSC-16 Webpage.
* We have a new version 3.0 of the S-100 implementation roadmap.
* It is necessary to speed up DQWG work items related to S-100 implementation roadmap. E.g. review of DQ chapter and FCs, DQ evaluation of S-100 products, etc.
* S-130 is the first PS whose DQ chapter are developed based on the recommended DQ template.
* The number and name of S-66 will remain, while S-67 will be withdrawn, because many IMO instruments refer to S-66.
* S-68 Ed 1.0.0 have been released by IHO.

**2.2 Timeline for the Phase 1 Product Specifications**

Mr. Scott YONGBLUT gave a brief report on the timeline for the phase 1 product specifications.

**2.3 Decisions and Actions from HSSC15**

DQWG noted HSSC15 decisions and actions that will affect this working group.

The progress and status on The HSSC15 List of Decisions and Actions related to DQWG are as follow:

*Action HSSC15/55 - HSSC encouraged Member States to start populating appropriate POSACC / SOUACC values in existing S-57 ENCs for relevant spatial objects in preparation of conversion to S-101 . RENCs are invited to provide status report on the progress of the encoding.*

**Status:** Mr. Svein Skjaeveland (PRIMAR) presented a report “Progress POSACC/SOUACC encoding” in DQWG19. One explanation for increase in M\_QUAL could be re-scheming resulting in more ENCs. Increase in OBSTRN, SOUNDG, UWTROC, WRECKS can potentially be explained as HOs follow up on HSSC14/59 action. However, the increase is very low (<0.7%) for all objects encoded with POSACC/SOUACC in PRIMAR Database. it is important to take into consideration that HOs may consider the POSACC/SOUACC encoding on those objects to be limited to areas of navigational significance, like shallow, narrow areas for example.

*Action HSSC15/56 - HSSC commended the DQWG supported by the HSWG for the development of Ed 1.0.0 of Guidelines and Recommendations for Hydrographic Offices for the allocation of CATZOC/QoBD Values from Survey Data.*

**Status:** No actions need to be taken.

*Action HSSC15/57 - HSSC approved Ed. 1.0.0 of S-68 for initial implementation, testing and evaluation. IHO Member States invited to provide their initial feedback to the DQWG. S-68 Ed. 1.0.0 has been approved by Member States and released on the IHO Website.*

**Status:** S-68 Ed 1.0.0 has been approved by Member States and released on the IHO Website. No feedback has been received.

*Action HSSC15/58 -**HSSC noted that Guidance to be provided to the CSBWG will be a sub-set of the Guidelines from “Survey to CATZOC” (in preparation).*

**Status:** DQWG19 will discuss CATZOC allocation of CSB Data with the support of CSBWG.

**2.4 HSSC ISO 9001 Cell update**

DQWG noted the new progress on HSSC ISO 9001 Cell presented by Chair.

Chair stated that DQWG would like to provide more support to the development of S-101 Ed 2.0.0 within the framework of ISO 9001 cell.

Chair expressed his regret that he had never attend any ISO 9001 cell meeting before. He would send an email to the Vice Chair of the HSSC to get his email address added to ISO 9001 cell email list.

**2.5** **NIPWG Report**

Chair invited Mr. Raphael Malyankar (DQ focal point) to give a presentation on behalf of NIPWG.

The presentation mainly covers as follow:

* S-122 and S-123 were developed before S-97 Part C was prepared. It is the reason why the DQ Chapters in both of the two PSs don’t conform to S-97 Part C.
* DQ Chapters in PSs developed by NIPWG will still use published DQ guidance in S-97 Ed. 1.1.0 until DQWG's latest proposals for data quality Chapters in Product Specifications are approved by the S-100 WG for inclusion in S-100.
* Some feature catalogues were prepared before the relevant lHO Gl Registry tools were stable. Therefore, differences between these feature catalogues and lHO Gl Registry are not errors or anomalies.

The Chair expressed his appreciation for the wonderful presentation, and explain that the review result of DQ Chapters and FCs are recommendations and suggestions and decisions should be made by NIPWG. At the same time, thanks were given to NIPWG Chair Mr. Eivind MONG (Canada) and the NIPWG for their kindly consideration of DQWG documents submitted to NIPWG.

The Chair hoped to continue to deepen the cooperation between DQWG and NIPWG, especially in the validation of S-100 products and the development of DQ evaluation guidelines.

**2.6 TWCWG Report**

The Chair invited TWCWG Chair Mr. Christopher JONES to give a presentation on behalf of TWCWG.

The presentation mainly covers the progress on the development of S-104 and S-111, Uncertainty in attributes in S-104&S-111, and discussion of DQWG documents in TWCWG7.

**DQWG** noted the feedback from TWCWG related to the Cross-check Results of feature catalogues in S-104 and S-111.

The Chair expressed his appreciation to Mr. Christopher JONES for the excellent presentation. At the same time, thanks were given to the TWCWG for their consideration of DQWG documents.

The Chair hoped to continue to deepen the cooperation between DQWG and TWCWG, especially in the validation of S-100 products such as the S-104 and S-111 and the development of DQ evaluation guidelines.

1. **Review S-100 Based Product Specifications for DQ Elements**

**3.1 Progress on Cross Check of DQ Chapter of S-1xx PSs**

According to the action DQWG 18/05, S-100 Product Specification subWG, comprised of Chair, NL, SE, US and UNH, has implemented the cross heck of DQ chapters of 7 published S-100 PSs.

A few points should be noted:

* There is no DQ chapter in S-421.
* Similar to the previously reviewed product specifications, DQ chapters of S-124, S-130, S-131, S-201, S-240 and S-401 are not in harmonized way.
* DQ chapters of S-124, S-131, S-201, S-240 and S-401 do not conform to the S-97.
* S-124, S-201 and S-401 do not implement the table C-7-1-Recommended data quality measures of S-97.

**[Decision 19/04] DQWG approved** the report on cross check of DQ chapter of S-1xx PSs.

**[Action 19/03] Chair** tofeedback Cross-check results to developers of PSs.

**[Action 19/04] SubWG** to continue review of new and amended Product Specifications and report results to DQWG20. **Members** are invited to join the subWG (**Chair, NL, SE, US, UNH**).

**3.2 Recommended Template of Data Quality Chapter of S-1xx Data Product Specifications**

Chair reported that the template of DQ Chapter has been updated to the Edition 1.1.0.

Chair expressed his appreciation to Mr. JEFF WOOTTON for improving this document and to Mr. Sean LEGEER for reporting the document to S-100WG8 on behalf of DQWG. S-100WG had invited DQWG to submit this document to S-100WG9 meeting for inclusion in S-100 Ed 6.0.0.

**[Action 19/05] Chair** to submit the template as revision proposal for Appendix D of S-100 Part 11, to the S-100WG for consideration and possible inclusion in Ed. 6.0.0 of S-100.

1. **Provide Data Quality Educational Materials for the Use of Mariners**

**4.1 Merging S-66 and S-67 into a single IHO publication**

**DQWG noted** ENCWG Chair Mr. Thomas Mellor’s report on merging S-66 and S-67 into a single IHO publication and expressed the gratitude to Mr. Thomas Mellor.

The Chair also expressed his appreciation to all DQWG S-66 review subWG members (Chair, SE, US, PRIMAR, NO, IT) for their excellent work and great contributions.

Professor Christos KASTRISIOS from University New Hampshire (UNH) had been included as a new member of DQWG S-66 review subWG.

**[Decision 19/05] DQWG approved** S-66 Ed. 2.0.0 to be posted on HSSC16 website.

**[Action 19/06] All Members –** call out to seek comment on S-66 Ed. 2.0.0 until HSSC16 – **April 15th 2024 as deadline**. If comments are received, a Rev1 of Proposed Ed.2.0.0 will be uploaded on the HSSC16 webpage.

**[Action 19/07] SubWG** to continue to upgrade S-66 to a new edition and feedback to DQWG19.**Members** are invited to join the subWG (**Chair, SE, US, PRIMAR, NO, IT, UNH**).

1. **Guidance to WGs and HOs on DQ aspects**

**5.1 Review of S-1xx Feature Catalogues**

Chair reported that the Review of S-1xx Feature Catalogues subWG comprised of Chair, US, France and SevenCs has implemented the Cross check of feature catalogues of S-101 Ed 1.2.0, 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, S-131 Ed 1.0.0.

The results of the review of S-1xx feature catalogues reported in DQWG18 had been updated to S-101 Ed. 1.2.0, and made some recommendations accordingly.

An automated ‘cross-check’ script has been developed by SHOM.

**[Decision 19/06] DQWG approved** the Report on the Review of S-1xx Feature Catalogues.

**[Decision 19/07] DQWG approved** the SHOM Report on the Review of S-101 FC and DCEG.

**[Action 19/08] SHOM with support from Chair & IHO Secretariat** – to consider sharing the automated ‘cross-check’ script with the broader IHO GitHub for further development and broader application in the development community. Yong BAEK would be the person to contact to contribute it to the IHO Infrastructure repository.

**[Action 19/09] Chair to feedback** Cross-check results to developers of PSs.

**[Action 19/10] SubWG** (led by Mr. Hugo CHONAVEL) to continue the review of new and amended Product Specifications and report results to DQWG19. **Members are** invited to join the subWG (CN, US, FR, SevenCs).

**5.2 Discussion on the 3-year implementation plan of S-68 (2024-2026)**

DQWG noted Chair’s Report on Discussion on the 3-year implementation plan of S-68（2024-2026）.

According to the plan, the chair recommended to:

* Establish a DQWG work item to Invite Member States to test S-68 and feedback the result to DQWG meeting.
* Establish a DQWG work item to Invite Member States to report their national allocation scheme of CATZOC to DQWG.
* Invite RENCs to analyze and report the status of CATZOC allocation within their region. Request HSSC to liaison with lRCC so that a relevant work item could be considered to include in the agendas of RHCs.
* Establish a DQWG work item to Monitor the status of CATZOC allocation in global ENCs and provide guidance on demand.

**[Action 19/11] Chair** to report the draft plan to HSSC16.

**5.3 Discussion on the development of** **S-68 Edition 2.0.0**

**DQWG noted** the Report.

When it comes to S-68 Edition 2.0.0, aspects to consider:

* Add a new chapter relevant to degradation to S-68.
* More details about feature detection.
* Develop a spreadsheet to translates the new S-44 matrix parameters into3.CATZOC
* Improve the allocation of CATZOC values of CSB data.4.
* A new chapter to describe How to update the existing CATZOC value based on new data.
* Terminology.
* Refine the procedure of CATZOC allocation.
* How to handle the differences in CATZ0C allocation schemes between adjacent countries.
* Recommendation on how to transfer to the CATZOC allocation scheme based on S-68.

**[Decision 19/8] DQWG agreed to** establish a new SubWGto continue the development of S-68 Ed 1.1.0 with a possible eventual S-68 Ed 2.0.0. **Members** are invited to join the subWG.

**[Action 19/12] Chair to request** HSSC16 to recommend a reminder to Member States to provide feedback to DQWG on the test of S-68 Ed. 1.0.0.

**DQWG noted** a reminder from IHO Secretariat about the future possibility of integration/combination of S-68 with S-65 which is anticipated to be tabled at HSSC16 by the ENCWG.

**5.4 Discussion on the CATZOC Value of CSB Data**

DQWG noted the Report “Proposal for Improving the Allocation of CATZOC Values of Crowdsourced Bathymetry Data” presented by the Chair.

DQWG noted the “Comments from CSBWG” presented Mr. Giuseppe Masetti and expressed gratitude to him and CSBWG.

**[Decision 19/9] DQWG agreed to establish a new SubWG** to continue the development of CATZOC allocation scheme for CSB Data. **Members** are invited to join the subWG (Chair, DK, UK, H2i, Docktech)**.**

**[Action 19/14] Chair to connect** HSWG Chair and CSBWG Chair and discuss the cooperation in thedevelopment of CATZOC allocation scheme for CSB Data.

**5.5 The progress of the encoding of** **POSACC/ SOUACC**

DQWG notedthe Report *“Progress POSACC/SOUACC encoding”* presented by Mr. Svein Skjaeveland (PRIMAR) and thanked him for the excellent report.

S101PT Chair Mr. Tom Richardson asked if PRIMAR would also include more details to show what producers are increasing encoding, to determine if this increase coming from a small sub-set of ENC Producers.

**[Action 19/15] PRIMAR** to consider further analysis to quantifyorder of magnitude of encoding increase (total # of soundings for example). Prior to HSS16 would be most welcomed.

**[Action 19/16] Chair with the support of PRIMAR** to report the progress to HSSC16.

**5.6 Discussion on the review of S-100** **Part4a metadata invited by S-100WG**

DQWG noted the invitation from S-100WG.

**[Decision 19/10] DQWG agreed to**review of S-100 Part4a metadata according to the new ISO standard.

1. **Revision of S-100 Part 4c and S-97 part C**

**6. 1 Review the amendments of S-100 Part 4c**

DQWG noted the report presented by Chair and review the recommended amendments of S-100 Part 4c.

**[Decision 19/11] DQWG approved** the amendments of S-100 Part 4C.

**[Action 19/17] Chair** to submit the recommended amendments of Part 4C to S100WG for inclusion in Ed. 6.0.0.

**6.2 Review the amendments of S-97 Part C**

Chair reported that the subWG comprised of Chair, NL and PRIMAR had completed the review of S-97 Part C in accordance with ISO 19157. DQWG noted the report and review the recommended amendments of S-97 Part 4c.

**[Decision 19/12] DQWG approved** the amendments of S-97 Part C.

**[Action 19/18]** **Chair** to submit the amendments of S-97 Part C to the S100WG for inclusion in Ed. 6.0.0.

1. **S-100 Validation and DQ**

**7.1 Data quality evaluation of S-100 products**

A draft guidelines on the data quality evaluation of S-100 products has been presented by Chair in DQWG19.

**[Decision 19/13] DQWG noted and approved** the Report *“Data quality evaluation of S-100 products”*

**[Action 19/19] Chair** to connect with **S-100WG Chair** to share this presentation (*“Data quality evaluation of S-100 products”)* and then determine a way forward for recommendations on the data quality evaluation of S-100 products.

1. **MASS and DQ**

**8.1 Report from MASS PT**

DQWG discussed data quality issues related to MASS.

Chair suggested to establish a joint subWG with MASSWG to draft a guideline document to explain how to implement data quality evaluation from a MASS user’s perspective.

The Chair emphasized the essential role of data quality efforts in the future of the MASS world. The need for keep monitoring the progress of MASS was also expressed.

**[Decision 19/14] DQWG noted and approved** the Report *“New Progress on MASSPT and Related DQ Issues”*

**[Action 19/20] DQWG Chair** to share *“New Progress on MASSPT and Related DQ Issues* presentation with Chair of MASSPT”. A Joint subWG may be established after discussion, and members will be welcomed to join the subWG.

1. **Discussion of DQWG Work Plan**

**9.1 Work Plan**

Chair presented the draft work plan of DQWG (2023-2024).

**[Decision 19/15] DQWG noted and approved** the proposed Work Plan for 2024-25 conditional on completion of **Action 19/21.**

**[Action 19/21] Chair** to confirm Task B.3 with S-100WG and other WG(s) developing product specifications. Work plan item # D1 (1.1.x) & D3 (DQWG20) will also need to be updated.

1. **Any Other Business**

**10.1 Election of Chair, Vice Chair and Secretary**

Assistant Director Yves GUILLAM thanked China and Canada for nominating the candidate of Chair and Secretary respectively, and welcomed candidates for the vacant Vice-Chair position.

**[Decision 19/16] DQWG Chair** Mr. Lingzhi WU has been reelected and acclaimed as Chair and was congratulated by Members and IHO Secretariat. **DQWG Secretary** Mr. Scott YONGBLUT will continue as Secretary through DQWG20.

**[Action 19/22] Members** are invited to considering taking the position of Vice Chair and submit the nomination letter to Chair and IHO secretariat via Member States.

1. **Date and Venue of the Next Meeting**

**11.1 DQWG20 (2025)**

Chair reported that China MSA was willing to host the DQWG-20 meeting, but it was not a final decision.

**[Decision 19/17]- DQWG agreed** that the next meeting is scheduled to be a physical meeting in China in 2025 (proposed dates would be the week of March 11-13 2025 – city to be confirmed – all final details to be confirmed before September 2024 if the meeting will be hybrid or face-to-face).

**11.2 DQWG21 (2026)**

**[Action 19/23]- Member States** are invited to consider hosting DQWG21 and otherwise it will default to IHO Secretariat in Monaco.

The decision on the date and venue of DQWG21 was delayed to the next meeting.

1. **Review of DQWG19 List of Actions and Decisions**

DQWG reviewed the draft List of Actions and Decisions presented by Mr. Scott YONGBLUT.

**[Decision 19/18] DQWG agreed** to have the DRAFT *Review of meeting actions and decisions* posted on the IHO DQWG web-page for consideration/comments from Members.

1. **Closure of the Meeting**

Chair announced that all of the agendas had been finished, and express his gratitude to IHO Secretariat for their professional and wonderful arrangement, and thanked all participants for their actively participation and fantastic contributions to the meeting, which is much valuable. He wished all participants a good health and prosperity.

At the end, he declared the meeting closed.

**Annex A – Status of DQWG18 Actions**

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| **Action Number** | **Action** | **Delegate** | **Target date** | **Status** |
| 18/01 | DQWG Members were invited to update the DQWG Membership list and contact details. | All | *Permanent* |  |
| 18/02 | Monitor the progress of IHO ISO 9001 Cell and report Data Quality matters back to the group in order to improve risk mitigation: S-98/consistent data quality information across S-101/S-1xx ECDIS Route Monitoring products in particular. | Chair | DQWG 19 | Done. |
| 18/03 | Arising from TWCWG7  (28 Feb – 02 Mar 2023). Provide comments back to the TWCWG and to use the guidance included in Part C of S-97 as the template for comments. | Chair & PRIMAR | DQWG 19 | Done –TWCWG7. |
| 18/04 | Report to CSBWG14 or Ms. Jennifer Jenckson, the “Survey to CATZOC” Guidelines Ed.1.0.0 (to be published in 2023). | Chair | CSBWG14 (16-18 August 2023) | Done. The CSBWG Chair Ms. Jennifer Jenckson has been informed that "Guidelines and Recommendations for Hydrographic Offices for the allocation of CATZOC" Edition 1.0.0, which will be beneficial to evaluate the quality of CSB data and promote the application of CSB data, has been finished by DQWG and will be submitted to HSSC15 for approval as a new IHO Publication S-68. |
| 18/05 | SubWG to continue review of new and amended Product Specifications and report results to DQWG19. Members are invited to join the subWG. | Chair, NL, SE, US, UNH | DQWG 19 | The cross check of DQ chapters of 7 published S-100 PSs including S-124, S-130, S-131, S-201, S-240, S-401 and S-421 has been implemented – shared with subWG members via email on Jan 22nd 2024. |
| 18/06 | Submit the template as revision proposal for Appendix D of S-100 Part 11, to the S-100WG for consideration and possible inclusion in Ed. 5.1.0 of S-100. | Chair | S-100WG8 (13 - 17 November 2023) | Done. Mr. Sean LEGEER(USA), on behalf of Chair, has reported the template in S-100WG8. |
| 18/07 | Papers from S-100WG, NIPWG and TWCWG - report results to DQWG19 and to invite WGs to nominate a DQ focal point in their WGs and him/her to participate in the activities of the DQWG. | Chair | DQWG 19 | Done–TWCWG7, S-100WG8, NIPWG vtc02-2023.  DQ focal point: Raphael Malyankar (NIPWG) |
| 18/08 | DQWG agreed to establish a subWG to review the draft S-67 new edition and recommend edits to produce a first credible output for Mariners. Plan is to submit proposed draft S-67 Ed. 2.0.0 to HSSC-15 | Chair, SE, US, PRIMAR, NO, IT | HSSC15 (15 April 2023) | Done. New S-66 has been submitted to DQWG19. |
| 18/09 | Regarding S-1xx Feature Catalogues - Chair to feedback the review results and recommendations to S-1xx developers respectively. Members of S-1xx PTs to be invited to participate in the next review before submission of Ed. 2.0.0 in any case. | Chair | DQWG19 | Done–TWCWG7, S-100WG8, NIPWG vtc02-2023. |
| 18/10 | DQWG agreed to continue the cross check of other released S-1xx FCs. | Chair, US, FR, SevenCs | DQWG19 | Done. A Report has been submitted to DQWG19. |
| 18/11 | Regarding S-101PT, RENCs to consider providing stats on the progress of the encoding of POSACC/ SOUACC to the DQWG Chair prior to HSSC16 (Action HSSC14/59 refers) for an assessment of S-57 readiness. | Chair, RENCs | HSSC16 | Done. |
| 18/12 | Submit the Document Edition 1.0.0 of a new Publication S-68 to HSSC 15 for approval, including reservations and add a short paragraph on the cartographic aspects in the foreword. SE to draft the short paragraph and provide it to the Chair. | Chair, SE | HSSC15 (15 April 2023) | Done – HSSC15 |
| 18/13 | Regarding ‘Survey to CATZOC” document, Chair to recommend to HSSC15 the continuation of this task and subWG to continue the work and update the document. | Chair, subWG | HSSC15 (15 April 2023) | Done – HSSC15 |
| 18/14 | Chair to liaise with IHO Secretariat to release the Guidelines and recommendations for Hydrographic Offices for the allocation of CATZOC on the IHO Website after HSSC15 approves the document. | Chair, IHO Secretariat | DQWG19 | HSSC15/57: HSSC approved Ed. 1.0.0 of S-68 for initial implementation, testing and evaluation.  IHO Member States were invited to provide their initial feedback to the DQWG. |
| 18/15 | Chair to liaison with S-100WG to inform that the DQWG has started a review and revision of S-100 Part 4c. | Chair | End of March 2023 | Done. S-100WG Chair has been informed that the DQWG has started a review and revision of S-100 Part 4C and S-97 Part C and the results will be submitted to S-100WG for consideration. |
| 18/16 | Chair to liaise with the S-100WG to inform that the DQWG has started a review and revision of S-97 Part C. | Chair | End of March 2023 | Done. S-100WG Chair has been informed that the DQWG has started a review and revision of S-100 Part 4C and S-97 Part C and the results will be submitted to S-100WG for consideration. |
| 18/17 | DQWG agreed to establish a subWG to review S-100Part 4c and S-97Part C but to limit the work to critical DQ issues only. | Chair, NL and PRIMAR | End of March 2023 | Done. Two proposals has been submitted to DQWG19. |
| 18/18 | DQWG agreed to upload the ISO definitions on the DQWG webpage as a working document. NL to provide the draft covering note and a disclaimer if appropriate. | NL, Chair, IHO Secretariat | March 2023 | Done. |
| 18/19 | DQWG agreed to consider the DQ requirements of MASS. Members are invited to feedback their comments and recommendations to DQWG Chair, when appropriate. | Chair, All DQWG Members | DQWG19 | On progress. |
| 18/20 | Members are invited to consider participating in the S-100WG Validation Workshop in Middle of 2023 in Monaco (Contact: S-100 Validation SubWG Chair Ms. Elizabeth Hahessy, Email: elihh@gst.dk), and report to the Chair, and Chair to provide feedback with DQWG comments and recommendations on the DQ requirements in S-100 validation checks to S-100WG and S-1xx PTs. | All DQWG Members | End of March, 2023 | Done. |

**Annex B – List of DQWG19 Actions**

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| **Action Number** | **Action** | **Delegate** | **Target date** | **Status** |
| 19/01 | Submit DQWG ToRs to HSSC for approval. | Chair | HSSC16 |  |
| 19/02 | DQWG Members were invited to update the DQWG Membership list and contact details. | All | *Permanent* |  |
| 19/03 | Feedback Cross-check results to developers of PSs. | Chair | DQWG 20 |  |
| 19/04 | SubWG to continue review of new and amended Product Specifications and report results to DQWG20. | Chair, NL, SE, US, UNH | DQWG 20 |  |
| 19/05 | Submit the Template of DQ Chapter as revision proposal for Appendix D of S-100 Part 11, to the S-100WG for consideration and possible inclusion in Ed. 6.0.0 of S-100. | Chair | DQWG 20 |  |
| 19/06 | Call out to seek comment on S-66 Ed. 2.0.0 until April 15th 2024 as deadline. If comments are received, a Rev1 of Proposed Ed.2.0.0 will be uploaded on the HSSC16 webpage. | All Members | HSSC16 (April 15th 2024) |  |
| 19/07 | Continue to upgrade S-66 to a new edition and feedback to DQWG20. | Chair, SE, US, PRIMAR, NO, IT, UNH | DQWG 20 |  |
| 19/08 | Share the automated ‘cross-check’ script with the broader IHO GitHub for further development and broader application in the development community. And contribute it to the IHO Infrastructure repository. | SHOM with support from Chair & IHO Secretariat;  Yong Baek | DQWG 20 |  |
| 19/09 | Feedback Cross-check results to developers of PSs | Chair | DQWG 20 |  |
| 19/10 | Continue the review of new and amended Product Specifications and report results to DQWG20. | CN, US, FR, SevenCs | DQWG 20 |  |
| 19/11 | Report the draft the 3-year implementation plan of S-68 (2024-2026) to HSSC16. | Chair | HSSC16 |  |
| 19/12 | Request HSSC16 to recommend a reminder to Member States to provide feedback to DQWG on the test of S-68 Ed. 1.0.0. | Chair | HSSC16 |  |
| 19/13 | Connect HSWG Chair and CSBWG Chair and discuss the cooperation in the development of CATZOC allocation scheme for CSB Data. | Chair | DQWG 20 |  |
| 19/14 | Consider further analysis to quantify order of magnitude of encoding increase (total # of soundings for example). | PRIMAR | HSSC16 |  |
| 19/15 | Report the progress of the encoding of POSACC/ SOUACC to HSSC16. | Chair, PRIMAR | HSSC16 |  |
| 19/16 | Submit the recommended amendments of Part 4C to S100WG for inclusion in Ed. 6.0.0. | Chair | DQWG 20 |  |
| 19/17 | Submit the amendments of S-97 Part C to the S100WG for inclusion in Ed. 6.0.0. | Chair | DQWG 20 |  |
| 19/18 | Liaise with S100WG Chair to share this presentation (“Data quality evaluation of S-100 products”) and then determine a way forward for recommendations on the data quality evaluation of S-100 products. | Chair | DQWG 20 |  |
| 19/19 | Share “New Progress on MASSPT and Related DQ Issues” presentation with Chair of MASSPT. A Joint subWG may be established after discussion, and members will be welcomed to join the subWG. | Chair | DQWG 20 |  |
| 19/20 | Confirm Task B.3 with S100-WG and other WG(s) developing product specifications. | Chair | DQWG 20 |  |
| 19/21 | Members are invited to considering taking the position of Vice Chair and submit the nomination letter to Chair and IHO secretariat via Member States. | All DQWG Members States | DQWG 20 |  |
| 19/22 | **Member States** are invited to consider hosting DQWG21 and otherwise it will default to IHO Secretariat in Monaco. | All DQWG Members States | DQWG 20 |  |

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). [↑](#footnote-ref-1)
2. Inland ENC Harmonization Group. [↑](#footnote-ref-2)