

3rd Meeting of the IHO Hydrographic Surveys Working Group (HSWG3)
(In person only)
Paris, 11th October to 13th October 2022

(Paragraph numbering is the same as the Agenda Item numbering and does not necessarily reflect the order in which matters were discussed.)

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Minutes Note:

On this document,

References are used, according to the following:

- Doc HSWG3-xx, corresponds to a document in annex of the minutes.
- Ref HSWG3-xx, corresponds to a document available on the HSWG webpage of IHO website.

1. Welcome and opening remarks from Chair Group

The Chair started by welcoming all the members to the third meeting of HSWG. A special acknowledgment was given to SHOM, ixBlue and ECA for hosting this third session of HSWG. The Chair gave a brief talk on the status of HSWG and IHO and mentioned the major focus on the work of the Project Teams on the C-13 (Manual of Hydrography) and on Satellite Derived Bathymetry Best Practices Guide.

2. Welcome and opening remarks from IHO

Mr Sam Harper, IHO Assistant Director, addressed all the participants on behalf of the Secretariat of IHO, greeting all members of the HSWG. Sam Harper stressed the importance of HSWG as a very productive group, interacting other working groups and contributing directly to the strategic objectives of IHO, with the key outputs being S-44 and Manual on Hydrography, but increasingly becoming an important reference to all society and not only the hydrographers.

Jeremy Rossetto gave a brief welcome on behalf of SHOM, welcoming all participants and explaining the current status of Shom and its plans for a near future.

David Vicentelli from ixBlue welcomed all participants to ixBlue installations and announced the inherent safety and logistics requirements for the facilities. A short visit to the ixCampus facilities was organized for the following days.

ECA welcomed all participants wishing a productive HSWG meeting.

3. Very short introduction from all participants

(Doc HSWG3 – List of Participants)

The Chair followed by introducing the Chairing team, Megan Greenaway and Carlos Marques, and invited all members to briefly introduce themselves, starting by Megan Greenaway, Carlos Marques from the Chairing Team, Sam Harper (IHO).

All other members followed introducing themselves;

- Sean Cullen from the Geological Survey of Ireland-Ireland
- Jose Arias from IIC Technologies – USA
- Jason Creech from David Evans and Associates – USA
- Hans Öias from Sjöfartsverket (SMA) – Sweden
- Seppo Mäkinen from the Finnish Transport and Communication Agency Traficom / Hydrographic Office – Finland

- Valentina Pavel from the Romanian Maritime Hydrographic Directorate, Romanian NAVY
- Ilenia Batzu from Istituto Idrografico della Marina – Italy
- Douglas Roush from National Geospatial Agency (NGA)
- Johan Verstraeten from Vlaamse Hydrografie – Belgium
- Jean Guy Nistad from Bundesamt für Seeschifffahrt und Hydrographie (BSH), Germany
- Christian Comtois from the Canadian Hydrographic Service (CHS)
- Luis Diaz Obregon from Instituto Hidrográfico de la Marina (IHM) – Spain
- Kjetil Jansen from Kongsberg Maritime
- Hugh Parker from Fugro – Australia
- Sebastien Tavry from ECA Robotics, France
- Jeremy Rossetto. from Service Hydrographique et Océanographique de la Marine (SHOM), France

4. Procedures of the Meeting

The Chair explained that SDB lead by Knut Hartmann met in Munich the previous week and had a very productive session working on the guide and was planned to be at HSWG3. However, Knut will not be present and will present from home due to illness.

From the MHPT, both Nickolas Roscher and Ian Slade will be standing down from chairing, with this meeting working as a transition meeting, with Ian Davies (UK) offering to stand in as interim chair for the MHPT breakout sessions this week.

The Chair explained the voting procedure when a specific formal vote may be required. However, in most cases, an informal vote will preferably be used.

5. Approval of agenda

(Doc HSWG3 – HSWG3 Agenda)

The agenda was available to all members in advance and any necessary changes were requested at this point. Having had no changes presented, the agenda was approved by all members with no changes or additions.

The HSWG3 agenda is available on the IHO/HSWG website.

HSWG3 Decision 01: *HSWG3 Agenda is approved with no changes or additions.*

6. Review of TORs and ROP

(Ref HSWG2 – TOR and ROP)

Terms of Reference with Rules of Procedure are available to all on the IHO/HSWG website and were presented for any comments. Hans Oias suggested that the frequency of HSWG meeting should be changed to “minimum once a year” in the RoP. This was agreed by consensus. No additional comments were noted.

The TOR and ROP is available on the IHO/HSWG website.

HSWG3 Decision 02: HSWG TOR are approved with no changes.

HSWG3 Decision 03: HSWG ROP are approved with 1 change to frequency of meetings.

7. Approval of Minutes of HSWG2

(Ref HSWG3 – Minutes from HSWG2)

The HSWG secretary described the minutes from HSWG2 which are available on the IHO/HSWG website. Some minor changes were registered by email at the time, and after those corrections the Minutes were approved by all. The minutes are available on the IHO/HSWG website.

HSWG3 Decision 04: Minutes of HSWG1 are approved with no further changes.

8. Review of actions from HSWG2

(Doc HSWG3 – HSWG2 Actions List status)

The HSWG secretary presented the Actions List for all members, reviewing the evolution of the work done and the current status of each action. All actions from last meeting were reviewed and updated accordingly.

It was mentioned the TWC standards can be added to the orders table and a brief discussion on file sharing systems took place with GitHub being an option.

HSWG3 Action 01: Member states wishing to offer hosting for HSWG4 to do so by end of January 2023.

HSWG3 Action 02: Secretary to collect events information (dates and locations) to post in the HSWG Calendar (IHO/HSWG website).

9. Key objectives for HSWG3

The Chair summarized the intentions for HSWG3, mentioning the S-44 v 6.1 is now approved by member states and ready to be published. HSWG3 will cover maintaining S-44 update process as well as the promotion of S-44. The meeting is also dedicated to further development of the new version of the Manual on Hydrography and the new SDB publication as well as liaison with other relevant HSSC Working groups.

Finally, the aim is to enable an engagement between the IHO and Member States, community and industry to give the best possible interaction between all parties.

10. HSWG Work Plan

(Ref HSWG3 – Work plan)

The Work Plan was presented, reminding members that it is also available on the IHO/HSWG website and MS Teams. A brief explanation on major activities was given emphasizing the work to be done on each PT.

11. S-44

11.1 Current status of S-44 and Maintenance Process

(Doc HSWG3 – S-44 maintenance plan)

Megan Greenaway explained the background on S-44 maintenance and the full process for S-44 updates. The current status on S-44 6.1 edition was shown, with this edition having been approved Member States and planned to be published late in October 2022. Any translations can use the detailed Changes List to focus the translation only on the changes made, rather than the whole document.

The Maintenance plan is defined as a regular update every 2 years, with HSWG preparing the review throughout the first year and half and approving all changes by December in order to have the new update ready for presentation on the 2nd year for the HSSC meeting, normally in May.

11.2 S-44 Feedback Tracking

Megan Greenaway specified that the tracking changes spreadsheet was available on the MS Teams, presenting its layout.

11.3 Additional feedback from operational experience

(Ref HSWG3 – Standardized use/definition of Uncertainty)

(Ref HSWG3 – Replacing percentage as an indicator of coverage)

11.3.1 Supporting a standardized use/definition of Uncertainty (Germany)

Jean-Guy Nistad (Germany) presented about amending the way uncertainty was described in S-44, with this document also being the reference for the uncertainty description for all IHO publications. He stated that uncertainty should probably be described additionally in the C-13 publication. Jean-Guy Nistad gave the background on status of the uncertainty definition, and emphasised that TPU is a hydrographic term only, which can be compared with CSMU – Combined Standard Measurement Uncertainty. He noted that, S-44 does not use a specific model while CSMU uses one, and additionally, there is a large confusion with “à priori” and “à posteriori” qualification of TPU on S-44, underlining that these terms may need to be reviewed and firmly defined and a specific model for TPU should also be used on S-44. Jean-Guy Nistad gave several examples of what could be an “à posteriori” and “à priori” uncertainties to illustrate this point of view.

From the discussion on this theme, it was indicated that TPU is not really used, being a base concept for the use of THU and TVU separated, and à priori and à posteriori concepts are not to be considered as

updated values. It was agreed that the definitions should be harmonised and a measurement model (equipment agnostic) for TPU included in S-44 / C13, which would probably force users to specify the model being used which does not currently happen. A dedicated sub-group would focus on this.

HSWG3 Decision 05: Uncertainty definitions on S-44 are to be revised

HSWG3 Action 03: Add uncertainty chapter to C-13

HSWG3 Action 04: Jean-Guy Nistad to add a proposition for Uncertainties definition on S-44 changes tracking spreadsheet

HSWG3 Action 05: Industry and Member states to propose specific model for the calculation of TPU

HSWG3 Action 06: Set a sub-group "Hydrographic Uncertainty Sub-Group" to discuss uncertainty concept (Jean-Guy Nistad (Chair), Hugh Parker, Jason Creech, Ilenia Batzu, Doug Roush, Seppo Makinen, Hans Oias volunteered)

11.3.2 Replacing % as an indicator of coverage (Germany)

Jean-Guy Nistad (Germany) explained that BHS is adopting the concept of Bathymetric Coverage and the question is why using % as a specification? He highlighted that there are several characteristics related to coverage that could be used instead of percentage.

From the discussion on this subject it was mentioned that a minimum theoretical coverage was defined and the reason for it to be vague is that it is equipment agnostic, which, from the acoustic point of view may seem poor. Also, it was noted that there is currently a wide discussion on how to actually measure percentage as one cannot really calculate what is measured, and a different indicator of coverage might be useful.

11.4 Presentation from contributors on key issues raised

11.4.1 Backscatter (Ireland)

Sean Cullen (Ireland) described the need for backscatter within S-44, primarily driven by EU on habitat mapping. The main issue on backscatter appearing to be that it should be included with some guidelines and maybe some standards. With the acquisition of bathymetry while ensuring good quality backscatter drives up costs and effort slightly, as there are constraints on acquisition, but in the end valuable information on the seafloor is acquired.

Sean Cullen also raised the issue of water column data that is also of great scientific value although more expensive to acquire.

Hans Oias mentioned that on HSPT, backscatter was discussed but discarded as was not a matter of safety of navigation. From the discussion on this thematic, the intention to have some notes on backscatter arose, considering a broader term as (acoustic or light backscatter) and possibly a standard, as KM mentioned some standards would be useful for surveys.

HSWG3 Action 07: Sean Cullen to liaise with GEOHAB for having some new text proposal about backscatter for S-44 (HSWG4)

11.4.3 Adaptation for un-crewed platforms (surface or sub-surface) within S-44

The Chair started by mentioning uncrewed surface vessels still have a hydrographer overseeing them, and therefore little changed in terms of the overarching standard. Hans Oias mentioned that THU may be a problem to consider with sub-surface platforms (AUVs). Kjetil Jensen mentioned that better resolution can be achieved but the THU may be more difficult, however post processing can possibly fix this issue. Sebastien Tauvry mentioned that with AUVs an uncertainty may exist but be corrected, and anyway the matrix of S-44 will position AUV surveys.

From the discussion it was agreed that the Matrix may be used and that S-44 is already fit for purpose and this subject should be covered in C-13 and not on a standard.

HSWG3 Decision 06: AUV and uncrewed survey guide will be exposed in C-13.

HSWG3 Action 08: UAV and uncrewed survey topic to be included in C-13.

11.5 Promotion of S-44 and Links to IHO Strategic Objective 2.2

The chair asked for information from HSWG members on any promotion examples that may have happened already:

Portugal stated a promotion of S-44 was made on the PIANC conference in May and on Hydrographic Engineering Conference in June. Also, Portugal has made promotion of S-44 on the Eastern Atlantic Hydrographic Commission (EAthC).

Finland and Sweden also reported promotion of S-44 within their national community.

As to the IHO strategic Objective, Sam Harper mentions that IHO will be counting unique downloads based on IP address. This will allow some other statistical products as special spread. The counting functionality is already in place, and it will work once the new version is published. He also mentioned that if one wants to promote the new S-44 version on its publication, an IHO contact may be used.

HSWG3 Action 09: Vice Chair to coordinate with Sam for the promotion of the new version of S-44 once it is released.

11.6 Education on S-44

(Ref HSWG3 – Portuguese PIANC S-44 Presentation)

(Ref HSWG3 – Portuguese Hydrographic Engineering Conference S-44 Presentation)

(Ref HSWG3 – Portuguese EAthC S-44 Presentation)

Portugal has made its presentations available.

HSWG3 Action 10: Portugal to share PIANC, EAtHC and Hydrographic Engineering Conference slides on the HSWG/IHO website.

11.7 Support for further translation of S-44 for onward IHO publication

The Chair mentioned that updated versions may be translated, and the changes list will be a helpful tool to make each version less onerous to translate. It was noted that when a translated version is available, it should be supplied to IHO to be published on the website.

HSWG3 Decision 07: All Members, if the national specification for Hydrographic Surveys is online, and the link is shared with IHO Secretariat, it will be shared on the IHO website.

HSWG3 Decision 08: When current translations are updated for the updated S-44 revisions, they will be published on IHO website.

HSWG3 Action 11: ALL, if the national specification for Hydrographic Surveys is online, the link can be shared with IHO Secretariat (Sam Harper)

12. Other HSWG Matters

(Ref HSWG3 – DQWG Chair Presentation - S-44 vs CATZOC)

(Ref HSWG3 – Megan Greenaway Presentation – S-44 Status)

(Ref HSWG3 – David Parker Presentation – UK CSM)

The Chair introduced the Liaison subject to all members outlining the groups at which HSWG is linked to.

12.1 Liaison with other HSSC Working Groups

12.1.1 DQWG

A presentation from new Chair of DQWG (Lingzhi Wu - China) was shown on screen.

In the discussion on this subject, Hans Oias mentioned that S-44 and CATZOC are not compatible as the cartographic process introduces errors that contribute to the change of CATZOC. Seppo Makinen mentioned that there may be a danger of using the S-44/CATZOC table blindly and David Parker mentioned that if explained correctly, a generic mapping between S-44 and CATZOC can usually be used. Doug Roush mentioned there cannot be a fixed translation from S-44 to CATZOC with Sam Harper agreeing that a fixed translation cannot occur.

The Chair explained that suggestions will be given to DQWG to make the point that the application of the table is not mandatory.

Also, it was noted that a review to the terminology (ex: Seafloor coverage vs Bathymetric coverage) is needed and send to S101.

HSWG3 Decision 09: HSWG is supportive of a standardized (translation table), but there must also be a statement about all the possible degradation of the data in by the time it is displayed in a product. production).

12.1.2 HDWG

Doug Roush expressed he will be looking into terms that might need to be included in the Dictionary. He will also be looking into the registry to explain it. It was noted that an article on May edition of the International Hydrographic Review Journal about hydrographic terminology is interesting for this subject.

HSWG3 Action 12: Doug Roush to check out of the glossary of S-44 ed6.1 and verify what is not included on the dictionary.

HSWG3 Action 13: Doug Roush to share article of Hydrographic Terminology with HSWG.

HSWG3 Action 14: Invite the Geospatial Information Registry POC for HSWG4 to explain Registry.

12.1.3 TWCWG

Doug Roush will be in the next meeting and will give feedback after it.

The Chair explained that he has liaised with he TWCWG and they had agreed that tides and currents specifications could be added to S-44.

HSWG3 Action 15: Douglas Roush to give feedback after TWCWG meeting.

HSWG3 Action 16: Chair to invite TWCWG Chair to bring TWCWG needs to be included on S-44

12.1.4 S-100WG

Hans Öias presented on the liaison with S-100WG, explaining that S102 () work is going fairly good, and it is expected to have a version 3.0.0 for the next HSSC in june2023. The S102 has adopted uncertainty definition from S-44, and is not using accuracy anymore. As to S101, it is now on edition 1.0.2. For S104 it is still a little behind, having had no meetings in 2022, with still some issues to be sorted out before having a final version.

The time schedule for S101, S102, S104 is to be kept, with any major changes still to be defined at this point not expected to be included on this next version, Minor changes may still be introduced.

HSWG3 Action 17: Hans Oias and Megan Greenaway to create a proposal for a recommendation for changing the unmatched terminology (ex: change seafloor coverage by bathymetric coverage) – until end of november2022.

HSWG3 Action 18: Hans Oias and Megan Greenaway to prepare a revision for the next edition of S102 on "recorded" parameters.

12.1.4 GEBCO-TSCOM

Next meeting is set for 26th October with the virtual participation available. The main focus on this meeting is the support on the Seabed 2030 and creating a tool to evaluate the existing gaps.

12.1.5 Crowdsourc Bathymetry Working Group

Sam Harper mentioned that the CSB initiative will be submitted to the UN Decade program. Member states were invited to approve S-44 and B-12. It was noted on this subject that there is content on B-12 publication that will be interesting for referencing on C-13, avoiding duplication.

Next meeting for the CSBWG will be in January 9th, an in person meeting.

12.2 Exchange experiences of new technology, approaches and best practice

Some members presented on new technologies and approaches for hydrography.

Megan Greenaway presented on some open source hydrographic tools being used by NOAA; HydroOffice and Pydro applications. These revealed to be tools that might solve issues around some of the members present at HSWG3.

David Parker (representing UK) presented on the UK Centre for Seabed Mapping, which is seeking to improve coordination among UK Government Organisations and also promote benefits of seabed mapping.

HSWG3 Action 19: Members that have tools for hydrography, are invited to share link to those for Sam Harper who will shar the link at HSWG/IHO website.

13. MHPT Part 1

(Doc HSWG3 – MHPT breakout session agenda)

(Ref HSWG3 – MHPT Chair, Nickolas Roscher, presentation– MHPT status)

(Ref HSWG3 – MHPT Chair, Nickolas Roscher, presentation– MHPT status)

The HSWG Chair started by explaining that Nickolas Roscher and Ian Slade, both needed to stand down as Chair and Vice Chair. Ian Davies has volunteered and will be interim chair for now. Chair and Vice Chair positions will be offered to all HSWG members.

The MHPT Interim-Chair (Ian Davies - UK (online)) presented on MHPT, starting by showing Nickolas Roscher pre-recorded presentation on the current status of MHPT works. MHPT has issued an online questionnaire and the results will be analysed once the questionnaire is closed. A GAP analysis,

comparing S5A/B and S-44 was done by Puerbandono. The chapters from C-13 need to be reviewed and distribute work through MHPT members. After the presentation Ian Davies mentioned that the priority is now in the review of the questionnaire and release it to Industry and Academia. Ian Davies then asked for inputs from all HSWG that can build on the review of C-13. The agenda for the breakout sessions was presented, with a special focus on the questionnaire.

14. SDBPT Part 1

(Doc HSWG3 – SDBPT breakout session agenda)

Knut Hartmann (EOMAP) (online) presented the SDBPT current status. The agenda for the breakout sessions was presented, with the focus on the chapters work attributions. SDB Documents are available on a shared Google drive, and this procedure is working fine for all SDBPT members.

Knut Hartmann questioned the review process of the best practice document. Sam Harper replied that SDBPT will send the publication to the Chairing Team, which will send to all HSWG members for revision, contacting directly with SDBPT Chairing team. He also announced that the IHO had agreed to designate the new document B-13.

Knut Hartmann questioned how the document can be maintained and updated, eventually becoming B-13. Sam Harper replied that the update to information like a satellite list could be done with a hyperlink, and so, dynamic information should be included as an hyperlink (inside IHO website) that can be updated when needed.

HSWG3 Action 20: Sam Harper to clarify the correct process to create a new publication, for B-13.

HSWG3 Action 21: SDBPT to build an Update Plan using the update plan from S-44 as a reference, guarantying an update cycle.

15. Breakout Sessions #1, #2, 3#, 4#

On breakout sessions, S-44 drafting team, MHPT and SDBPT had separate meetings with their respective members. Each group followed their own agenda, with separate minutes produced.

16. Progress Report from Project Teams

16.1 MHPT

Ian Davies presented the evolution of works by MHPT, showing a review of the questionnaire. It was then decided to include students in the questionnaire.

Ian Davies finalized by showing a review of the work plan for MHPT.

HSWG3 Action 22: IHO Secretariat, Sam Harper to check the questions on gender equality proposed by Women in Hydrography, so that the relevant ones can be added to que questionnaire.

HSWG3 Action 23: All HSWG to promote C-13 questionnaire.

HSWG3 Action 24: IHO Secretariat, Sam harper to verify the style guide that should be used for a new document.

16.2 SDBPT

Knut Hartmann showed the progress on the breakout sessions, where a review of the document was done. On the breakout sessions, Knut presented the SDBPT work that was done on the intersessions meeting on 4th October. The document is in an advanced state, with most content already existing and revised. The intentions is to produce a new document, which could be proposed as a Bathymetric Publication – B-13. The revised work plan was adjusted and presented.

Knut Hartman mentioned that the intention is to have the publication revised by the HSWG by the end of 2022, so that a revision could be done for the HSWG4, in order to be submitted on next HSSC.

Knut Hartman finalised with a presentation of the Action Items for SDBPT.

17. Any other business

17.1 Conferences and other events

Dates of events will be published on the HSWG/IHO calendar.

HSWG3 Action 25: HSWG Chairing Team to review MS Teams Members.

18. Date, venue and method of next meeting – HSWG3

For this agenda item it was proposed that HSWG4 would be in late February or early March 2023. The initial proposed dates are 27th February to 2nd March 2023 in an online meeting.

As for HSWG5, it will be a in person meeting in Autumn, October 2023, with the intention to try having an Asia Pacific Time Zone. The Chair asked all member states to consider hosting.

HSWG3 Decision 10: Next meeting will be in an on line meeting.

HSWG3 Decision 11: HSWG5 in person meeting to be in an Asia Pacific time zone.

HSWG3 Action 26: Member states wishing to offer hosting for HSWG5 to do by end of January 2023.

19. Review of updated Work Plan

The current Work Plan was reviewed and will be posted in the IHO/HSWG website.

20. Intersessional activities

Megan Greenaway reviewed the planned intersessional activities.

21. Review of Action List and items for agenda for HSWG4

(Doc HSWG3 – Decisions List)

(Doc HSWG3 – Actions List)

The list of Actions and Decisions was reviewed and agreed by all members. The Actions List and Decisions List is annexed to this document.

HSWG3 Decision 12: HSWG agreed on the actions and decisions list presented.

22. Closing remarks

The Chair closed the meeting thanking all the participants for all the hard work put through the meeting. He emphasised the good progress from the Project Teams with C-13 and the possible B-13 in focus. Intersessional works will follow and HSWG4 is planned for late February/early march.

23. Annex A – Glossary

24. Annex B - Documents

25. Documents in external reference (IHO's HSWG website)

(Ref HSWG2 – TOR and ROP)

(Ref HSWG3 – Minutes from HSWG2)

(Ref HSWG3 – Work plan)

(Ref HSWG3 – Standardized use/definition of Uncertainty)

(Ref HSWG3 – Replacing percentage as an indicator of coverage)

(Ref HSWG3 – Portuguese PIANC S-44 Presentation)

(Ref HSWG3 – Portuguese Hydrographic Engineering Conference S-44 Presentation)

(Ref HSWG3 – Portuguese EAtHC S-44 Presentation)

(Ref HSWG3 – DQWG Chair Presentation - S-44 vs CATZOC)

(Ref HSWG3 – Megan Greenaway Presentation – S-44 Status

(Ref HSWG3 – Megan Greenaway Presentation – Open Source Hydrographic Tools

(Ref HSWG3 – David Parker Presentation – UK CSM)

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Annex A - Glossary

AUV – Autonomous Underwater Vehicle

ARHC - Arctic Regional Hydrographic Commission

C-13 - Manual on Hydrography

CATZOC – Category of Zones of Confidence

CHC – Canadian Hydrographic Conference

CSB – Crowdsourced Bathymetry

CSBWG – Crowdsourced Bathymetry Working Group

DQWG – Data Quality Working Group

GEBCO - General Bathymetric Chart of the Oceans

HO – Hydrographic Office

HDWG - Hydrographic Dictionary Working Group

HSSC - Hydrographic Services and Standards Committee

HSWG - Hydrographic Surveys Working Group

HSWG1 - Hydrographic Surveys Working Group 1st meeting

HSWG2 - Hydrographic Surveys Working Group 2nd meeting

HSWG3 - Hydrographic Surveys Working Group 3rd meeting

IHO - International Hydrographic Organization

IOC - Intergovernmental Oceanographic Commission

MHPT – Manual of Hydrography Project Team

MS - Microsoft

PT – Project Team

ROP – Rules of Procedure

S-44 – Standards for Hydrographic surveys

S-100 - Based Product Specifications

S-100WG – S-100 Working Group

SDB - Satellite Derived Bathymetry

SDBPT - Satellite Derived Bathymetry Project Team

TOR – Terms of Reference

TSCOM – Technical Sub-Committee on Ocean Mapping

TWCWG – Tides, Water Level and Currents Working Group

WG – Working Group

Annex B – Documents

(Doc HSWG3 – List of Participants)

(Doc HSWG3 – HSWG3 Agenda)

(Doc HSWG3 – HSWG2 Actions List status)

(Doc HSWG3 – S-44 maintenance plan)

(Doc HSWG3 – Decisions List)

(Doc HSWG3 – Actions List)

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Doc HSWG3 – List of Participants

Country	Member State	Organization	Abbreviation	Name
Portugal	Portugal	Instituto Hidrográfico (IH)	IH	Carlos Videira Marques (Secretary)
Canada	Canada	Canadian Hydrographic Service (CHS)	CHS	Christian Comtois
UK	UK	United Kingdom Hydrographic Office (UKHO)	UKHO	David Parker (Chair)
France	Expert Contributor	iXblue/AFhy Francophone Hydrographic Society	iXblue	David Vincentelli
USA	USA	National Geospatial Agency (NGA)	NGA	Doug Roush
Sweden	Sweden	Sjöfartsverket (SMA)	SMA	Hans Öiås
Australia	Expert Contributor	Fugro	Fugro	Hugh Parker
UK	UK	United Kingdom Hydrographic Office (UKHO)	UKHO	Ian Davies
Italy	Italy	Istituto Idrografico della Marina	IIM	Ilenia Batzu
USA	Expert Contributor	David Evans and Associates	DEA	Jason Creech
Germany	Germany	Bundesamt für Seeschifffahrt und Hydrographie (BSH)	BSH	Jean-Guy Nistad
France	France	Service hydrographique et océanographique de la Marine (SHOM)	SHOM	Jeremy Rossetto
Belgium	Belgium	Vlaamse Hydrografie	Vlaamse Hydrografie	Johan Verstraeten
USA	Expert Contributor	IIC Technologies	IIC TEC	Jose Arias
Norway	Expert Contributor	Kongsberg Maritime	KM	Kjetil Jensen
Germany	Expert Contributor	EOMap	EOMap	Knut Hartmann
Spain	Spain	Instituto Hidrográfico de la Marina (IHM)	IHM	Luis Manuel Rusillo Díaz-Obregón
USA	USA	National Oceanographic and Atmospheric Administration - Office of Coast Survey (NOAA-OCS)	NOAA-OCS	Megan Greenaway (Vice Chair)
Monaco	IHO	IHO Secretariat	IHO	Sam Harper
Ireland	Ireland	Geological Survey of Ireland	GSI	Sean Cullen
USA	Expert Contributor	ECA robotics	ECA	Sebastien Tavvry
Finland	Finland	Finnish Transport and Communication Agency Traficom / Hydrographic Office	FTCAT	Seppo Mäkinen
Romania	Romania	Romanian Maritime Hydrographic Directorate, Romanian NAVY		Valentina Cornelia Pavel

Doc HSWG3 – S-44 maintenance plan

S-44 Current Status and Maintenance Process

- Previously updated every ~10 years
- Current version (6.0.0) published March 2020 after 5 in person meetings held over 3 years
- New process: Regular updates every 2 years
 - HSWG members provide proposed changes to S-44 tracking sheet
 - HSWG discusses proposals
 - S-44 Drafting Team implements changes
 - HSWG reviews/approves -> HSSC reviews/approves -> Member States reviews/approves
 - IHO publishes new version

See Process for Updating S-44 Standard document for details

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Doc HSWG3 – HSWG Decisions List

HSWG3 Decision 01: HSWG3 Agenda is approved with no changes or additions.

HSWG3 Decision 02: HSWG TOR are approved with no changes.

HSWG3 Decision 03: HSWG ROP are approved with no changes.

HSWG3 Decision 04: Minutes of HSWG1 are approved with no further changes.

HSWG3 Decision 05: Uncertainty definitions on S-44 are to be revised

HSWG3 Decision 06: AUV and uncrewed survey guide will be exposed in C13.

HSWG3 Decision 07: All Members, if the national specifications for Hydrographic Surveys is online, and the link is shared with IHO Secretariat, it will be shared on the IHO website.

HSWG3 Decision 08: When current translations are updated for the updated S-44 revisions, they will be published on IHO website.

HSWG3 Decision 09: HSWG is supportive of a standardized (translation table) considering there is an express consideration about all the possible degradation that can happen between the survey delivery and the chart publication (on chart production).

HSWG3 Decision 10: Next meeting will be in an on line meeting.

HSWG3 Decision 11: HSWG5 in person meeting to be in an Asia Pacific time zone.

HSWG3 Decision 12: HSWG agreed on the actions and decisions list presented.

Doc HSWG3 – HSWG Actions List

HSWG3 Action 01: Member states wishing to offer hosting for HSWG4 to do so by end of January 2023.

HSWG3 Action 02: Secretary to collect events information (dates and locations) to post in the HSWG Calendar (IHO/HSWG website).

HSWG3 Action 03: Add uncertainty chapter to C13

HSWG3 Action 04: Jean Guy Nistad to add a proposition for Uncertainties definition on S-44 changes tracking spreadsheet

HSWG3 Action 05: Industry and Member states to propose specific model for the calculation of TPU

HSWG3 Action 06: Set a sub group "Hydrographic Uncertainty Sub-Group" to discuss uncertainty concept (Jean-Guy Nistad (pre-Chair), Hugh Parker, Jason Creech, Ilenia Batzu, Doug Roush, Seppo Makinen, Hans Oias)

HSWG3 Action 07: Sean Cullen to liaison with GEOHAB for having some new text proposal about backscatter for S-44 (HSWG4)

HSWG3 Action 08: UAV and uncrewed survey topic to be included in C13.

HSWG3 Action 09: Vice Chair to coordinate with Sam for the promotion of the new version once it is released.

HSWG3 Action 10: Portugal to share PIANC, EAtHC and Hydrographic Engineering Conference slides on the HSWG/IHO website.

HSWG3 Action 11: ALL, if the national specifications for Hydrographic Surveys is online, the link can be shared with IHO Secretariat (Sam Harper)

HSWG3 Action 12: Doug Roush to check out of the glossary of ed6.1 and verify what is not included on the dictionary.

HSWG3 Action 13: Doug Roush to share article of Hydrographic Terminology with HSWG.

HSWG3 Action 14: Invite the Geospatial Information Registry POC for HSWG4 to explain Registry.

HSWG3 Action 15: Douglas Roush to give feedback after TWCWG meeting.

HSWG3 Action 16: Chair to invite TWCWG Chair to bring TWCWG needs to be included on S-44

HSWG3 Action 17: Hans Oias and Megan Greenaway to create a proposal for a recommendation for changing the unmatched terminology (ex: change seafloor coverage by bathymetric coverage) – until end of november2022.

HSWG3 Action 18: Hans Oias and Megan Greenaway to prepare a revision for the next edition of S102 on "recorded" parameters.

HSWG3 Action 19: Members that have tools for hydrography, are invited to share link to those for Sam Harper who will shar the link at HSWG/IHO website.

HSWG3 Action 20: Sam Harper to clarify the correct process to create a new publication, for B-13.

HSWG3 Action 21: SDBPT to build an Update Plan using the update plan from S-44 as a reference, guarantying an update cycle.

HSWG3 Action 22: IHO Secretariat, Sam Harper to check the questions on gender equality proposed by Women in Hydrography, so that the relevant ones can be added to que questionnaire.

HSWG3 Action 23: All HSWG to promote C-13 questionnaire.

HSWG3 Action 24: IHO Secretariat, Sam harper to verify the style guide that should be used for a new document.

HSWG3 Action 25: HSWG Chairing Team to review MS Teams Members.

HSWG3 Action 26: Member states wishing to offer hosting for HSWG5 to do by end of 2022.

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