

4th Meeting of the IHO HSSC Project Team on Standards for Hydrographic Surveys (HSPT4)

IHO, Monaco, 3-6 December

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

1. Opening

The Chair welcomed all to the meeting. He thanked the IHO Secretariat for hosting the meeting and providing such good facilities. The vice-Chair welcomed all and hoped that the task would be completed by the end of the meeting. The Secretary-General, Dr Mathias Jonas, thanked all for making the journey in such numbers. He highlighted the background of the PT and the importance of the refocusing of the IHO onto hydrographic matters, in particular the revision of the S-44 standards, which he noted were standards for all surveys. He noted that development of autonomous vessels require improved data and quality indicators for machine-to-machine operations.

2. Administrative Arrangements

The Secretary provided a brief on domestic and administrative arrangements.

3. Introduction of participants

All participants introduced themselves, providing brief details of their background, see Annex A for list of participants. Apologies were received from Neil Weston (NOAA-OCS) and Andrew Coulls (AHO). The agenda was approved without amendments, it was noted that it was a guide to the meeting, see Annex B for agenda and Annex C for list of documents.

4. Review of action list from HSPT3

The list of Actions from HSPT3 were reviewed, it was noted that most actions had been completed, only liaison with IBSC with respect to the proposed forming of a Hydrographic Survey Working Group (HSWG) was noted to be outstanding

5. Report to HSSC11 and relevant outcomes from HSSC11

The Chair provided a background brief on progress since the first meeting. He highlighted the achievements and the tasks still to be completed. He particularly noted the results of the questionnaire which initially guided the work and then he provided a comprehensive brief on the feedback received from IHO Member States and Industry on the most recent draft of the publication. It was the opportunity to remind the frames used by the team: the initial IHO Terms of references, the Questionnaire, the IHO stakeholders feedbacks, and the HSPT members advices. He highlighted potential future tasks for a Hydrographic Survey WG, it was suggested that prioritization of the identified tasks should be undertaken. It was noted that the draft S-44 Edition 2.0.0 must be submitted to HSSC by 26 March 2020 for consideration by HSSC12 and subsequent circulation to IHO Member States for approval. He expressed his confidence that this timeframe can be achieved. He displayed the three front cover proposals received from PRT, DEU and FRA, see Annex E ADCS highlighted the relevant sections from the revised IHO Strategic Plan, which will be presented to the 2nd session of the Assembly.

6. Presentations

Argans and EOMAP provided comprehensive presentations on the data gathering, limitations, quality assurance and potential of Satellite Derived Bathymetry (SBD). They also provided tentative standards for classifying the resultant data for consideration by the HSPT. These presentations generated a number of questions and detailed discussion.

7. Review of progress

The Chair and DEU (as Coordinating Editor) briefed the participants on the feedback received, working through the spreadsheet of collated comments. DEU highlighted the most sensitive points raised in the comments and the major issues which needed to be addressed. Of particular importance was the selection of the 40 or 50 metres depth criteria, the change for which had been suggested by the Data Quality Working Group (DQWG) although subsequently reversed back to the original 40 metre value. It was noted that the increase in depth would have significant impacts on achievable survey area coverage for the same effort. It was agreed to return to the 40 metre depth criteria.

SWE proved a brief on bathymetric coverage in support of the change of terminology from '100% bottom search' and 'full sea floor search' to 'full bathymetric coverage'. This generated numerous comments and a wide ranging discussion. The Secretary reminded all that S-44 was the IHO minimum standards for hydrographic surveys, which must allow all IHO Member States to achieve at least these standards. The Chair noted that the revised version must remove the current latitude for individual interpretation. GBR provided some background on the wording developed for the 5th Edition and why there was the latitude for interpretation. GBR suggested re-including the requirement for the minimum depth overall significant features to allow not to have 100% bathymetric coverage for Order 1a.

The PT agreed that 100% Bathymetric Coverage should be retained for Special Order and $\leq 100\%$ Bathymetric Coverage for Order 1a as long as "the least depth over all significant features is obtained and the bathymetry provides an adequate depiction of the nature of the bottom topography".

Decision 1 – Retain 100% Bathymetric Coverage for Special Order and $\leq 100\%$ for Order 1a with minimum depth over all significant features obtained and adequate depiction of the bottom topography.

The participants initially agreed that the 5% and 4% Bathymetry Coverage for Order 1b and Order 2 should be retained. Nevertheless, the Chair underlined that this point would probably require more discussion during the meeting.

8. Reports of breakout sessions and key discussions

The Chair provided some guidance on the conduct of the breakout sessions. The participants divided into 3 groups and undertook a comprehensive review of all the contents of the draft text, taking into account the comments and feedback received. Many of the comments were agreed, a number were rejected and some required further discussion.

The Chair provided a mid-meeting summary of progress; he identified the tasks which had been completed and highlighted the items which needed to be addressed. He proposed to send the agreed revised definitions in the glossary to the HDWG for consideration for updating the S-32 – *Hydrographic Dictionary* – using the change proposal form. **Action 1 – Chair**

He provided the intended timetable for progress towards submitting the draft revised S-44 Edition 2.0.0 to HSSC12 by 26 March 2020. He noted that the alternative was to postpone the submission until HSSC13 in 2021.

It was agreed that the proposed minimum vertical uncertainty values for each Survey Order should be reviewed by the TWCWG for confirmation and guidance. **Action 2 – Chair** It was agreed that the terms Water Levels and Flow should be used in chapter 4 to align with the TWCWG terminology.

Decision 2 – Amend terms to use Water Levels and Flow

The groups provided an update brief on progress, particularly the items which needed to be discussed by the HSPT for a decision.

The participants addressed the minimum Bathymetric Coverage figures for Order 1b and Order 2. The mathematics used to calculate the previous coverage based on line spacing was explained, based on the use of an 8° beam width achieving the required horizontal uncertainty. It was agreed to have both Order 1b and Order 2 to have a minimum bathymetric coverage of 5% with tighter uncertainty for Order 1b.

Decision 3 – Amend values to be 5% for the Bathymetric Coverage, for Order 2, and 1b

The PT addressed the idea of including specifications tighter than Special Order, as articulated by the Baltic Sea Hydrographic Commission (BSHC). It was proposed that a new Exclusive Order could be developed and included. It was noted that final criteria values had not been agreed between organizations that are already undertaking such surveys, already called “Exclusiv Order”. The Chair suggested that an Exclusive Order appeared to be directed towards safety of navigation and therefore should be described in chapter 7, it may be possible to add the parameters to the tables with a gap between Special Order, in order to highlight the exceptional aspect of this Order. It was agreed to include and articulate an Exclusion Order within chapter 1 and 7 and the tables. PRT, CAN and SWE agreed to undertake the necessary development. **Action 3 – PRT/CAN/SWE**

Decision 4 – Included a description of Exclusive Order with appropriate parameters

The breakout groups provided their final progress briefs. A number of items required further work to complete the revision and review of the draft of S-44.

9. Review of ToRs and WG justification proposals

To be addressed at HSPT5.

10. Any other business

10.1 Selection of front cover design

The participants selected the USA proposal from the four cover design proposals received from Portugal, France, Germany and USA (see annexe E).

10.2 Impact Study

To complete the publication of the future v2.0.0 an “impact study” has to be considered according to IHO rules. Action Chair, with IHO support.

11. **Plan of work**

The Chair provided his proposed way forward for a small sub-group (Chair, SWE, GBR, USA and NLD) to prepare a version 1.8.0, taking into account all the comments and amendments generated during HSPT4, by early January. **Action 4 –**

Chair/SWE/GBR/USA/NLD/PRT/CAN Version 1.8.0 will be circulated to the HSPT for feedback and comment by early February. **Action 5 –**

All Feedback and comments will be collated with the objective of preparing a version for discussion at a future meeting in early March. **Action 6 –**

Chair/SWE/GBR/USA/NLD/CAN/PRT The objective to submit Edition 2.0.0 to HSSC12 by 20 March for subsequent circulation to IHO Member States. The Work Plan would be updated after HSPT5.

12. **Report to HSSC12**

To be addressed at HSPT5.

13. **Dates and venue for next meeting**

It was agreed that a further meeting was necessary to undertake a review of the final draft prior to submission to HSSC12. It was proposed to hold a 5th meeting 2-6 March. Sweden offered to host HSPT5. **Action 7 – SWE/IHO**

14. **Review of list of actions**

A draft list of Action Items from the meeting were reviewed and agreed. All Action Items are marked in this report and are collected together at Annex D. An updated list of the Action Items will be maintained on the HSPT web page and all those who have actions to complete should keep the IHO and Chair informed of any progress. **Action 8 – ALL**

It was agreed that the IHO would circulate a draft meeting report to all attendees by 13 December. **Action 9 – IHO** Participants were requested to provide any comments by 10 January. **Action 10 – ALL** It was intended the final meeting report would be published by 17 January. **Action 11 – IHO**

15. **Closing remarks**

The Chair thanked the Secretariat for the provision of such good facilities and the support provided by the staff, which helped to ensure the success of the meeting.

The following Annexes are attached:

- A. HSPT4 – List of Participants.
- B. HSPT4 – Agenda
- C. HSPT4 – List of Documents
- D. HSPT4 – List of Actions
- E. HSPT4 – Proposed cover designs
- F. HSPT4 – Draft agenda HSPT5

4th meeting of the IHO HSSC Project Team on Standards for Hydrographic Surveys
List of Participants HSPT4

Member State	Organization	Name	E-mail
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Germany	Bundesamt für Seeschifffahrt und Hydrographie (BSH)	Jean-Guy Nistad	jean-guy.nistad@bsh.de
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Netherlands	Royal Netherlands Naval Hydrographic Service (RNINHS)	John Loog	JP.Loog@mindef.nl
Norway	Norwegian Mapping Authority (NMA)	Vidar Bøe	vidar.boe@kartverket.no
Portugal	Instituto Hidrográfico (IH)	Cristina do Sameiro dos Santos Monteiro	cristina.monteiro@hidrografico.pt
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USA	National Geospatial Agency (NGA)	Misty Savell	Misty.D.Savell@nga.mil
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Expert Contributor	AML Oceanographic	James Walton	james.walton@amloceanographic.com
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Expert Contributor	Fugro	Marco Filippone	m.filippone@fugro.com
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Expert Contributor	Argans	Joseph Avis	javis@argans.co.uk
Expert Contributor	Argans	Henri Dolou	henri.dolou@wanadoo.fr
Expert Contributor	FIHS	Iain Slade	i.slade@fugro.com
Expert Contributor	EOMAP	Knut Hartmann	hartmann@eomap.de

**4th MEETING OF THE IHO HSSC PROJECT TEAM ON
STANDARDS FOR HYDROGRAPHIC SURVEYS (HSPT4)
IHO, Monaco, 3 - 6 December 2019**

1. Welcome and opening remarks (*Chair and Secretary-General*)
2. Domestic and administrative arrangements. (*Secretary*)
3. Introduction of participants, apologies and approval of agenda. (*Chair/Secretary*)
4. Review of action items from HSPT3. (*Chair*)
5. Report to HSSC11 and review of relevant outcomes and actions from HSSC11. (*Chair*)
6. Presentations – Member State activities. (*Chair*)
7. Review of progress on draft revision of S-44 with Coordinating Editors’ comments and assessment of next actions. (*Coordinating Editors/Chapter Leads*)
8. Key topics for discussion, to be included whilst addressing review of raft individual chapters and during drafting breakouts: (*Chair*)
 - .1 Scope of tasks still to be addresses in view of stakeholder feedback, comments and inputs;
 - .2 Outstanding issues to be resolved;
 - .3 Format of front cover of next edition and draft wording for preface.
9. Review of ToRs and RoPs for proposed WG, justification for new WG. (*Chair*)
10. Any other business. (*Chair*)
 - .1 Selection of front cover design (*Chair*)
11. Work Plan 2020-2021. (*Secretary*)
12. Considerations for items to be included in the Chair’s Report to HSSC12. (*Chair*)
13. Date and venue of next meeting, if required, – HSPT5 – and intersessional activities. (*Chair/Secretary*)
14. Review of Action List and draft agenda for HSPT5, if required. (*Secretary*)
15. Closing remarks. (*Chair and Director*)

HSPT4 - List of Documents

Document No	Document Title
HSPT4-Invitation	Invitation letter
HSPT4-Annex B	Registration Form (pdf version)
HSPT4-Annex B	Registration Form (Word version)
HSPT4-Annex C	Logistic Information
HSPT4-Annex D	Hotel details
HSPT4-Annex E	IHO Secretariat Location Map
HSPT4	Provisional List of Participants
HSPT4-3.1	HSPT4 Draft Agenda -v3.0
HSPT4-3.2	HSPT4 Draft Programme -v1.1
HSPT4-4.1	List of Actions HSPT3 - updated 22 March 2019
HSPT4-5.1	Report to HSSC11
HSPT4-5.2	Presentation to HSSC11
HSPT4-5.3	Relevant outcomes and actions from HSSC11
HSPT4-7	Consolidated feedback on draft S-44 revision
HSPT4-7 Rev.1	Consolidated feedback on draft S-44 revision
HSPT4-14	Draft list of Actions - updated 6 December 2019
HSPT4	Draft HSWG ToRs and RoPs
HSPT4	Work Plan 2020-2021
HSPT4	Presentations .zip

LIST OF ACTIONS – Updated 13 January 2020

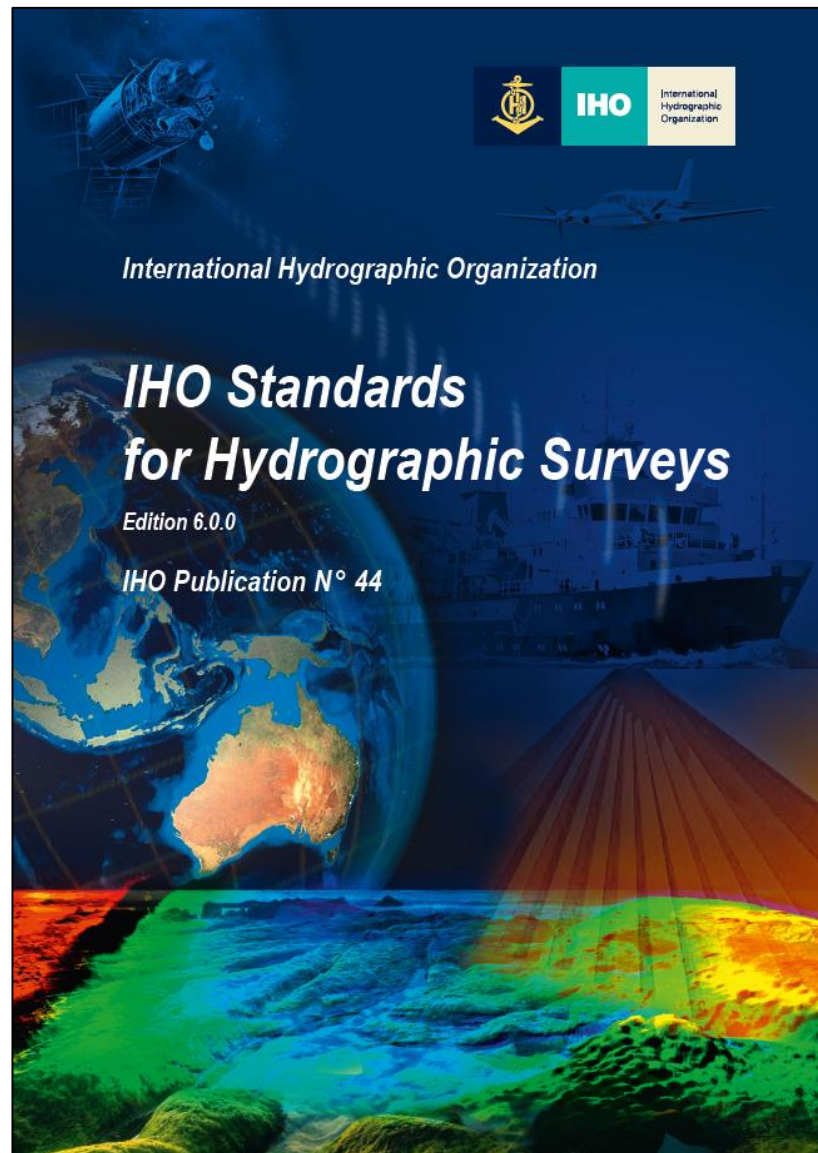
Action	Agenda Item	Subject	Status/Date	Comments	Action
HSPT4					
1	8	Draft S-44	HSPT5	Submit revised and new definitions to HDWG to inclusion in S-32	Chair
2	8	Draft S-44	HSPT5	Submit proposed minimum vertical and flow uncertainty values for each Survey Order to TWCWG for confirmation and guidance	Chair
3	8	Draft S-44	HSPT5	Develop wording and parameters for an Exclusive Order	PTR/CAN/SWE
4	44	Draft S-44	10 Jan Complete	Review draft Edition 1.7.x and circulate new version Edition 1.8.0 for HSPT review	Chair/SWE/GBR /USA/NLD/CAN/ PRT
5	11	Draft S-44	7 Feb	Provide feedback and comments on Edition 1.8.0	All
6	11	Draft S-44	14 Feb	Provide consolidated feedback spreadsheet of all comments revised to HSPT	Chair/SWE/GBR /USA/NLD/CAN/ PRT
-	11	Work Plan	HSSC12	Update Work Plan to reflect progress intersessionally and at HSPT5	Chair/IHO
-	12	Report to HSSC12	13 Mar	Draft report for review and amendment by Chair and vice-Chair	IHO
-	12	Report to HSSC12	20 Mar	Submission of final version to HSSC	Chair/Vice-Chair/ IHO
7	43	HSPT5 venue and dates	13 Dec Complete	Circulate an initial letter of invitation	IHO/SWE
8	14	Action List	HSPT5	Keep IHO informed of progress with allocated actions	All
9	44	HSPT4 Draft Report	13 Dec Complete	Draft to be circulated for comment	IHO
10	44	HSPT4 Draft Report	10 Jan Complete	All to provide comments on draft report to IHO	All
11	44	HSPT4 Final Report	17 Jan Complete	Publish final report	IHO

LIST OF DECISIONS

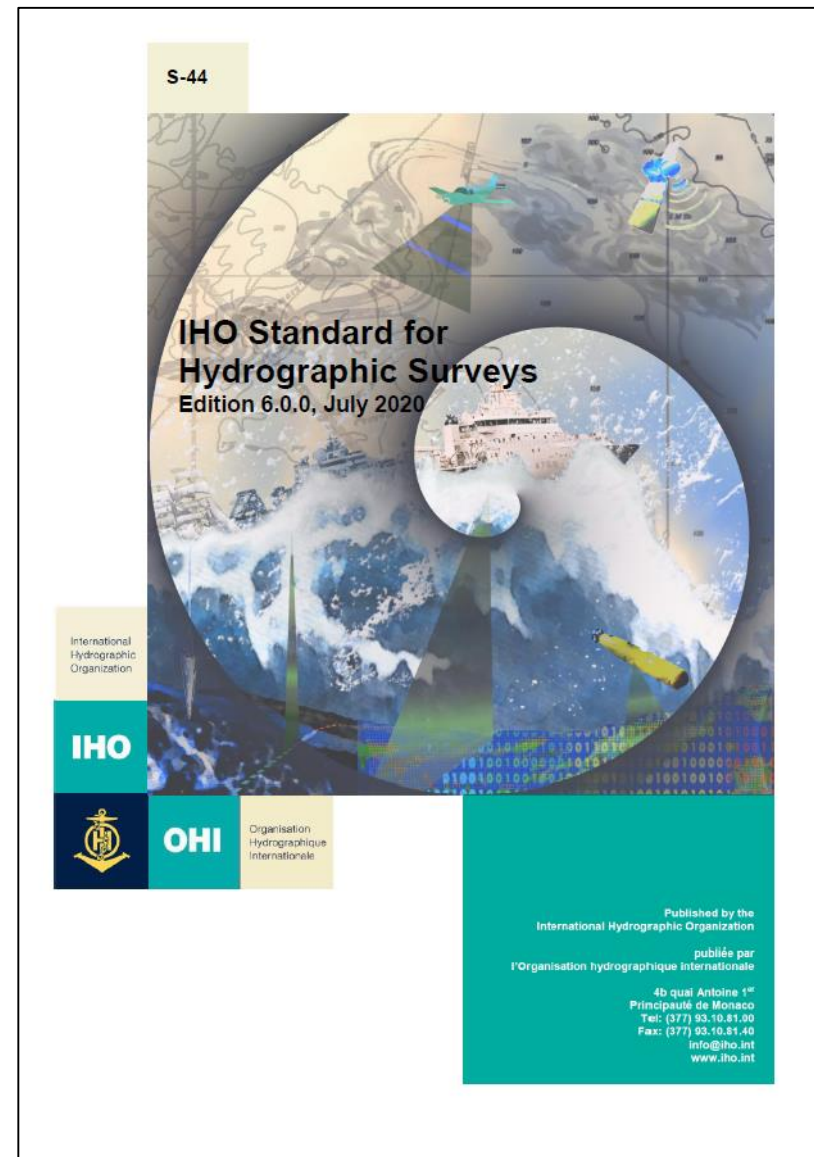
Number	Decision
1	Retain 100% Bathymetric Coverage for Special Order and $\leq 100\%$ for Order 1a with minimum depth over all significant features obtained and adequate depiction of the bottom topography
2	Amend terms to use Water Levels and Flow
3	Amend values to be 5% for the Bathymetric Coverage, for Order 2, and 1b
4	Included a description of Exclusive Order with appropriate parameters

Cover Proposals

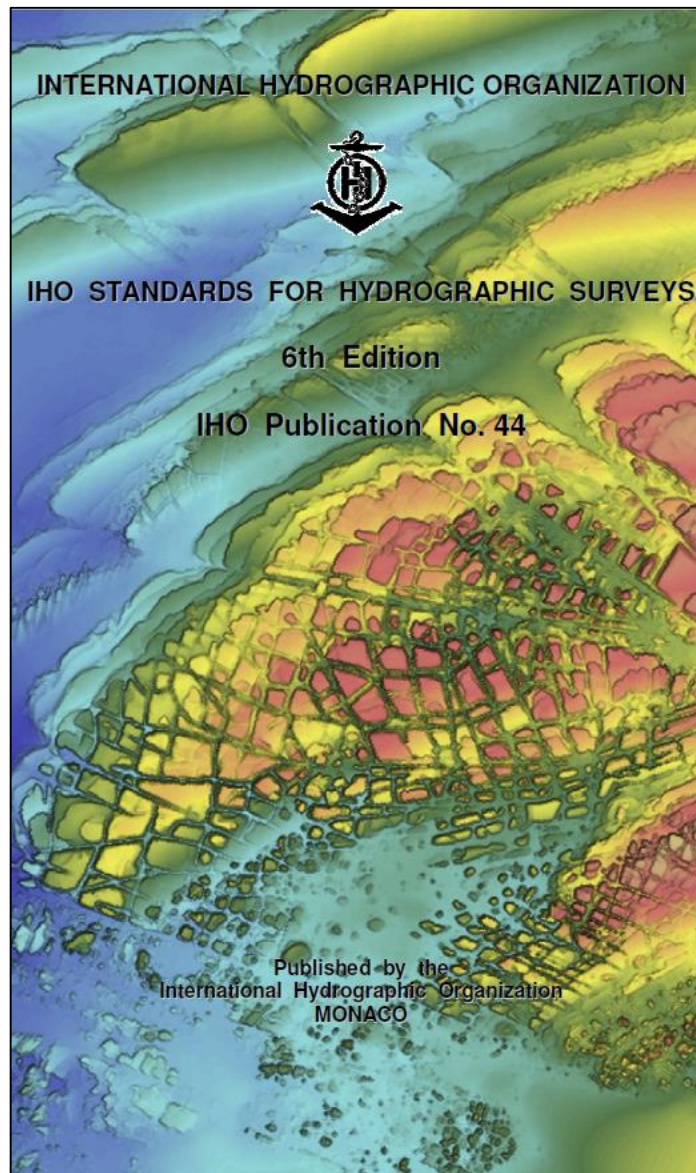
Germany



France



Portugal



USA



**5th MEETING OF THE IHO HSSC PROJECT TEAM ON STANDARDS FOR HYDROGRAPHIC
SURVEYS (HSPT5)**
Stockholm, Sweden, 2 -6 March 2020

1. Welcome and opening remarks by the Chair.
2. Domestic and administrative arrangements (*Host/Secretary*).
3. Introduction of participants, apologies and approval of agenda.
4. Review of action items from HSPT4.
5. Review of progress on draft revision of S-44 Edition 1.0.8 with Coordinating Editors' comments and assessment of next actions.
6. Key topics for discussion, to be included whilst addressing final review of draft individual chapters and during drafting breakouts:
 - .1 Scope of tasks still to be addresses during drafting review;
 - .2 New data types/sources or information for consideration.
7. Review of ToRs and RoPs for potential HSWG.
8. Any other business.
9. Work Plan 2021-2022.
10. Considerations for items to be included in the Chair's Report to HSSC13.
11. Review of Action List.
12. Closing remarks by Chair.