



Dossier du BHI N° S3/7198

LETTRE CIRCULAIRE 83/2015

07 décembre 2015

**ETABLISSEMENT D'UNE EQUIPE DE PROJET SUR LES QUESTIONS A
TRAITER EN MATIERE DE LEVES HYDROGRAPHIQUES (H2SPT)**

Références :

- A. LC de l'OHI 25/2015 du 17 mars – *Réorganisation de la structure du comité des services et des normes hydrographiques (HSSC) – Examen de la nécessité d'établir un groupe de travail sur les levés hydrographiques*
- B. LC de l'OHI 37/2015 du 1 juin – *Comité des services et des normes hydrographiques (HSSC) 7^{ème} réunion, 10-13 novembre 2015, Busan, République de Corée*
- C. Action 7/02 du HSSC - *Participation in the work of the HSSC Hydrographic Surveys Scoping Project Team (H2SPT) (Participation au travail de l'équipe de projet sur les questions à traiter en matière de levés hydrographiques du HSSC)*

Madame la Directrice, Monsieur le Directeur,

1. Comme demandé par le comité des services et des normes hydrographiques (HSSC) de l'OHI, la lettre en référence A sollicitait l'avis des Etats membres sur l'adéquation de la publication de l'OHI S-44 – *Normes OHI pour les levés hydrographiques*, sur les items de travail associés qui pourraient être pertinents le cas échéant, et sur l'éventuel établissement d'un groupe de travail dédié aux levés hydrographiques.
2. Le Comité de direction remercie les 41 Etats membres suivants, qui ont répondu à la lettre en référence A : Algérie, Australie, Bangladesh, Belgique, Brésil, Canada, Chili, Croatie, Cuba, Equateur, Egypte, Estonie, Finlande, France, Allemagne, Grèce, Islande, Inde, Irlande, Italie, Japon, République de Corée, Pays-Bas, Nigeria, Norvège, Pérou, Pologne, Portugal, Roumanie, Fédération de Russie, Singapour, Slovaquie, Afrique du Sud, Espagne, Suriname, Suède, Turquie, Ukraine, Royaume-Uni, Etats-Unis et Uruguay.
3. Un résumé des réponses a été préparé par le BHI pour plus ample examen par le HSSC lors de sa 7^{ème} réunion à Busan, République de Corée, du 10 au 13 novembre (cf. référence B). Une copie du rapport (sans ses annexes) est fournie en annexe A à cette lettre.
4. Le comité a pris note du rapport et a décidé d'établir une équipe de projet sur les questions à traiter en matière de levés hydrographiques (H2SPT), qui serait chargée, pendant un an, de clarifier la portée et les résultats à attendre d'un éventuel nouveau groupe de travail sur les levés hydrographiques, si un tel groupe devait être établi. Le comité a approuvé le mandat fourni en annexe B, demandant à l'équipe de projet de présenter ses recommandations lors de la 8^{ème} réunion du HSSC, en novembre 2016. Le représentant du Brésil au HSSC-7, M. Nickolas de Andrade ROSCHER, a aimablement proposé de présider l'équipe de projet. Conformément à son mandat, l'équipe de projet conduira ses travaux par correspondance.
5. Conformément aux procédures établies de l'OHI, la participation à l'équipe de projet est ouverte aux représentants de tous les Etats membres de l'OHI, des organisations observatrices reconnues de l'OHI ainsi qu'à des participants invités à titre d'experts.
6. Comme demandé par le HSSC (cf. référence C), le Comité de direction invite les Etats membres et les parties prenantes de l'OHI à envisager la nomination de représentants pour

participer à la H2SPT et, le cas échéant, à préciser leurs nom, affiliation et coordonnées ainsi que leur candidature éventuelle à un poste de responsable (président, vice-président, secrétaire).

7. Les nominations doivent parvenir au BHI (info@iho.int, avec copie à adso@iho.int), au plus tard le **15 janvier 2016**.

8. Les Etats membres sont également encouragés à inviter les parties prenantes nationales concernées à participer à l'équipe de projet à titre d'experts, indépendamment des parties prenantes figurant dans la liste de diffusion.

Veuillez agréer, Madame la Directrice, Monsieur le Directeur, l'assurance de ma haute considération,

Pour le Comité de direction,



Gilles BESSERO
Directeur

Diffusion :

- Etats membres de l'OHI
- Parties prenantes de l'OHI :
 - Fédération internationale des sociétés hydrographiques (IFHS)
 - The Hydrographic Society of America (THSOA)
 - Mme la Présidente de la Commission 4 de la FIG
 - 3D at Depth Pty Ltd
 - Aquamap Pty Ltd
 - Argans Ltd
 - Caris
 - EOMAP GmbH & Co.
 - Fugro LADS
 - Fugro Survey
 - Hypack Inc.
 - iXBlue
 - Kongsberg Maritime
 - MMT
 - QPS BV
 - Satellite Applications Catapult
 - Teledyne Atlas Hydrographic
 - Teledyne Reson
 - Pilbara Ports Authority, Australia
 - Port of London Authority, UK
 - Center for Coastal and Ocean Mapping/Joint Hydrographic Center (CCOM/JHC) - University of New Hampshire, USA
 - Department of Marine Science – University of Southern Mississippi, USA

Annexe A : Document HSSC7-03C – Examen de la nécessité d'établir un groupe de travail sur les levés hydrographiques (*en anglais uniquement*)

Annexe B : Equipe de projet sur les questions à traiter en matière de levés hydrographiques (H2SPT) - Mandat (*en anglais uniquement*)

DOCUMENT HSSC7-03C¹

7^{EME} REUNION DU COMITE DES SERVICES ET DES NORMES HYDROGRAPHIQUES

Busan, République de Corée, 9-13 novembre 2015

Document aux fins d'examen par le HSSC

Examen de la nécessité d'établir un groupe de travail sur les levés hydrographiques

(Version anglaise)

Submitted by:	IHB
Executive Summary:	This paper summarizes the responses to IHO CL 25/2015 on the consideration of the need to establish a Hydrographic Surveys Working Group.
Related Documents:	Minutes of HSSC6 (paragraph 4.2 and action HSSC6/11) IHO CL 25/2015 dated 17 March - <i>Reorganized structure of the Hydrographic Services and Standards Committee (HSSC) - Consideration of the need to establish a Hydrographic Surveys Working Group</i>
Related Projects:	IHO Work Programme HSSC Work Programme Reorganized structure of the Hydrographic Services and Standards Committee (HSSC).

Introduction

1. During the consideration by HSSC6 of the re-organization of the structure of the working groups of the HSSC, concern was expressed by some Members that not a single working group in the new structure dealt with hydrographic surveying.
2. Discussion during HSSC6 indicated that there might be a need to address the use and standardization of new emerging hydrographic surveying technologies that were not already reflected in the relevant IHO standards and guidelines. The most relevant IHO Standard related to hydrographic surveying is IHO Publication S-44 – *IHO Standards for Hydrographic Surveys* – for which the edition in force is the 5th Edition. The 5th Edition was developed by the Working Group on Standards for Hydrographic Surveys (S-44WG) established in 2005 and adopted by IHO Member States in 2008. The S-44WG was then disbanded.
3. As indicated in its introduction, S-44 is intended to provide the minimum standards that are to be achieved. The publication does not describe the procedures for setting up the necessary equipment, for conducting a survey or for processing the resultant data. In this context, the need to revise S-44 should be driven by the identification of any shortcomings in the current edition or new issues arising from the development of new systems or new procedures. The discussions at the 5th Extraordinary International Hydrographic Conference (EIHC-5) on crowd-sourced

¹ The annexes to the document are not provided here. A complete version of the document can be accessed from the HSSC-7 document page on the IHO web site (www.iho.int > Committees & WGs > HSSC > HSSC-7).

bathymetry and satellite-derived bathymetry did not raise any specific requirement to revise S-44.

4. Action HSSC6/11 invited the IHB *to issue an IHO CL inviting IHO MS to provide their views on the scope, topics and work items, if any, to be addressed through the establishment of an Hydrographic Surveys WG and on their involvement if such a WG was established.* Accordingly, IHO CL 25/2015 sought the opinion of Member States, using the following questions, also attached in Annex A:

- a. Does the 5th Edition of S-44 - *IHO Standards for Hydrographic Surveys* meet your current and foreseeable requirements?
- b. Have you identified any additional topics to be addressed by the establishment of a Hydrographic Surveys Working Group?
- c. If a working group was established, please indicate what would be your contribution to the working group?
- d. Any additional comments?

5. This report provides a summary of the responses to CL 25/2015.

Summary of Responses to CL 25/2015

6. The IHB received replies from 41 Member States. The replies are tabulated at Annex B. The reply from Australia was supplemented by the views of a port authority and two survey companies.

7. Less than half of the Member States replied to the CL, thereby indicating an interest in the issues. Less than a fifth of the Member States, 14, indicated that S-44 does not meet their current or foreseeable requirements; 27 of the replies indicated that S-44 meets their current needs. Just over a fifth of the IHO Member States, 18, supported the establishment of a new HSWG and identified additional topics to be addressed. 23 Member States did not support the establishment of a new HSWG. 14 Member States provided additional comments.

8. 25 Member States express their willingness to be involved in a Hydrographic Surveys Working Group, with 15 indicating active involvement; the remainder would participate as correspondence members. Three Member States volunteered to take on the role of vice-chair and two to act as secretary. There was no volunteer to lead a working group.

9. **Conclusion 1.** Although some strong views were expressed in the replies, there was only minority support for the establishment of a new HSWG and even less support for a review of S-44.

10. A summary analysis of the comments received is provided in Annex B. The following table lists the topics and issues raised, for which HSSC might consider identifying subordinate bodies to progress the work under the relevant task of the (draft) IHO Work Programme for 2016:

Subject	Topic/Issue	Discussion	IHO Work Programme Task and Potential HSSC action
S-44	Broaden scope	9 replies suggested a broadening of the scope of S-44 to include standards for surveys in estuarine and rivers, engineering, dredging, environmental and site surveys; this would need to be undertaken in liaison with industry	2.10.2.1 Establish S-44WG

Subject	Topic/Issue	Discussion	IHO Work Programme Task and Potential HSSC action
	Continental edge surveys	Two replies highlighted a lack of standards and guidance for continental shelf edge surveys and maritime boundaries; this would need to be progressed in liaison with ABLOS	2.10.2.1 Establish S-44WG
	New technologies	14 replies noted that S-44 did not contain standards for emerging and new technologies, such as LiDAR, autonomous underwater vehicles (AUV), satellite derived bathymetry, nor was there guidance on crowd-sourced bathymetry (CSB); some of these could be address by the CSBWG, the majority fall outside the CSBWG remit and would need to be addressed by another WG	2.10.2.1 Establish S-44WG and liaise with IRCC/CSBWG
	Change focus	Four replies indicated there was a need to change from equipment focused standards to minimum data quality standards, including a move away from point measurement data to surface accuracy assessment	2.5 Task DQWG
	C-55	One reply noted the lack of standards and guidance on survey assessment for calculation of percentage area surveyed	3.4.3 Refer to IRCC/CBSC
	Depiction of data quality	Two replies highlighted the need to depict the connection between survey data quality with charted data to allow a better appreciation by the chart user	2.5 Task DQWG
C-13	Review/revision	Two replies noted that no revisions had been undertaken to include new technologies in use for the collection of survey data	1.2.4.6 Refer to IRCC/IBSC and/or CBSC and/or establish a specific WG
Data processing	Maximization of data	Four replies identified the lack of guidance and	2.10.2.1

Subject	Topic/Issue	Discussion	IHO Work Programme Task and Potential HSSC action
		standards to maximize survey data to obtain minimum depths, backscatter and water column data	Establish S-44WG
Tides	Use of RTK	Four replies highlighted the lack of guidance and standards for the use of RTK in the determination of vertical heights in separation models	2.7.2 Task TWCWG
Post natural disasters	Surveys	One reply commented on the lack of guidance for the conduct of surveys after natural disasters	2.10.2.1 Establish S-44WG
Third party data	Data assessment	Two replies highlighted the lack of guidance and standards for the assessment of third party data for inclusion in HO databases and associated products	2.5 2.10.2.1 Establish S-44WG and/or task DQWG

Analysis of Responses

11. The responses can be considered under several headings:

- a. IHO Publication S-44 – decide whether to broaden the scope of the document beyond the current nautical charting focus in liaison with industry. Suggested areas which could be included were:
 - (1) standards and guidance for continental shelf edge surveys;
 - (2) how to incorporate new emerging technologies including crowd-sourced bathymetry and satellite derived bathymetry in liaison with the Crowd-Sourced Bathymetry Working Group (CSBWG);
 - (3) make the standards data rather than equipment driven, including requirements for full seabed coverage, object detection and positional accuracy,
 - (4) consider moving focus away from point measurements to bathymetric surface accuracy assessment; and
 - (5) how to depict data quality standards to connect survey data and charted data for better understanding and clarification by the customer.
- b. IHO Publication C-13 – up date in line with current technologies and practices, and additional focus on survey project deliverables;
- c. Data Processing – maximizing survey data to obtain minimum depths and backscatter data;
- d. Tides – appropriate standards for use of RTK in determination of vertical heights in separation models;

- e. Surveys after natural disasters – guidance and procedures for surveys after natural disasters;
- f. Third party data – guidance for assessment of third party data for inclusion in HO databases and associated products.

12. The two items, which generated the most comments, were the broadening of the scope of S-44 to include standards on traditionally non-Hydrographic Office related survey tasks and the inclusion of guidance and standards for new and emerging technologies, other than crowd-sourced bathymetry and satellite derived bathymetry. In line with new technologies and increased data volumes, there were suggestions for S-44 to refocus from point data to surface accuracies with standards for object detection, seabed coverage, backscatter and integrated position systems as well as addressing data processing and the link between survey data and its presentation for use by customers. A number of replies expressed the view that the standards should be data orientated rather than their current product focus. One reply suggested a comprehensive review of S-44 Edition 5.

13. Two replies expressed the view that IHO Publication C-13 – *Manual on Hydrography* was out of date and needed to be revised to include new technologies and methods; however the WG tasked with producing C-13 was disbanded on completion of its work and no mechanism, other than the statement that the IHB would maintain the currency of the publication, was put in place to ensure the currency of the publication. At present the IHB does not have the resources to undertake a review and revision of C-13. Another reply suggested that C-13 should be complemented by separate guidance on specific topics. Additionally it was felt a HSWG could act as a knowledge transfer forum and develop Capacity Building (CB) guidance and requirements for Member States to meet Phase 2 of the IHO CB strategy as well as develop some guidelines on determining the values for the status of survey in IHO Publication C-55 – *Status of Hydrographic Surveying and Nautical Charting Worldwide*.

14. **Conclusion 2.** There is no majority support to establish a new HSWG but a number of issues identified fall under the remit of the disbanded S-44 WG rather than currently active subordinate bodies. It is clear there is some support, albeit not a majority, to review IHO Publication S-44 and/or to address a number of related hydrographic topics, which presently do not have a natural home amongst the current HSSC subordinate bodies.

15. **Conclusion 3.** The majority of identified topics could be allocated to existing subordinate bodies of HSSC and IRCC, although adjustment of Terms of Reference may be required to include these additional tasks.

16. **Conclusion 4.** There are five topics, that most directly relate to S-44 that do not easily lie within the scope of any of the currently established subordinate bodies or active Work Programme tasks. There may therefore be a case for re-establishing the S-44 WG or broadening the remit of the DQWG to include these topics within its Terms of Reference.

Stakeholders' Views

17. At the Shallow Survey 2015 conference an Open Forum on S-44 was conducted to elicit comment and input from a broad spectrum of survey practitioners and equipment manufacturers. The discussions were led by the IHB and assisted by a panel with representatives drawn from government and industry organizations. In general all participants agreed that S-44 was appropriate for surveys for nautical charting, although it was felt there was scope to consider some improvements including a higher specification than Special Order and the format of the publication in general. It was felt there could be a consideration to re-title the publication to make it clearer that the standards were for surveys for nautical charting and that there are other documented standards for data gathering for other uses. It was felt unwise and undesirable to try and create a broader set of standards for gathering data for a variety of survey uses. The use of derogations of some requirements for non-nautical charting surveys could be better explained and the need to refer to the entire document rather than just the Table of Orders should be highlighted to ensure all specifications were met for individual survey orders. Although there was no expressed urgency for the development of standards appropriate for data obtained from Satellite

Derived Bathymetry (SDB) and Crowd-sourced Bathymetry (CSB), it was suggested these could be considered in any future work.

18. At the North Sea Hydrographic Commission Re-Survey Working Group meeting held immediately after Shallow Survey 2015, the participants suggested some modularization of the standards to allow a more flexible use of the standards for non-nautical charting surveys. The challenge for HOs on how to use quality data which did not meet all requirements of a particular Order was highlighted as an issue which needs HSSC input and Member State agreement. It was felt some adjustment to Order 1b would be appropriate and necessary to include SDB data in the future, the creation of a new Order with higher specifications than Special Order, reflecting the significant equipment, techniques, software, processing and visualization advances since the publication of the 5th Edition, could be an area for consideration. There was support for a review of the publication format to clarify its contents to foster more appropriate use and better education to ensure surveys are completed to the full specifications, not just those articulated in the Table of Orders. The entire document should be used as many specifications are articulated in the text.

Options for Consideration

19. The IHB identifies the following options for further consideration by the HSSC:
- a. Option 1 – agree that there is insufficient support in the replies received for forming a new Hydrographic Surveys Working Group; however a number of items and tasks are identified, which may need to be addressed by HSSC and its subordinate bodies;
 - b. Option 2 – although there is no majority in the replies for the creation of a new Hydrographic Surveys Working Group, a number of Member States identify a sufficient number of items and tasks to justify the creation of a new working group, for which there is ample support and volunteers for the positions of officers;
 - c. Option 3 – agree there is insufficient support in the replies received for forming a new Hydrographic Surveys Working Group; however a number of Member States identify a sufficient number of items and tasks to consider broadening the remit of the Data Quality Working Group (DQWG), possibly to rename it to the Hydrographic Surveys Working Group (HSWG), and for the new group to be tasked with the items and tasks identified in addition to the current tasks of the DQWG;
 - d. Option 4 – take no further action other than for HSSC to highlight to existing subordinate bodies those issues which already come within their Terms of Reference and Work Plans.

Action required of HSSC

20. The HSSC is invited to:
- a. **Note** this report;
 - b. **Consider** if any of the four options described in paragraph 19 is an appropriate and effective way of addressing the concerns raised in the replies to IHO CL 25/2015;
 - c. **Take any other actions** considered necessary.

**EQUIPE DE PROJET SUR LES QUESTIONS A TRAITER EN MATIERE DE LEVES
HYDROGRAPHIQUES (H2SPT)**

Mandat et Règles de Procédure
(Version anglaise)

Reference: 7th HSSC Meeting (Busan, Korea, 9-13 November 2015)

1. Objectives

- a) consider Doc. HSSC7-03C "Consideration of the need to establish a HSWG";
- b) justify the need for "hydrographic survey" related to standardization activities;
- c) define the scope (subject areas, technology, standards, data usage, training, etc.) and possible tasks that may be considered by the IHO, and consult the IHO Member States as appropriate;
- d) propose recommendations on the way forward (what, who, when, how) at HSSC-8.

2. Authority

The H2SPT is a subsidiary of the Hydrographic Services and Standards Committee (HSSC). Its work is subject to HSSC's approval.

3. Composition and Chair

- a) The PT shall comprise representatives of IHO Member States (MS), Expert Contributors (EC), observers from accredited Non-Governmental International Organizations (NGIO), and a representative of the IHB ("IHB" to be replaced by "IHO Secretariat" when the IHO Secretariat is established). A membership list shall be maintained and posted on the IHO website.
- b) EC membership is open to entities and organizations that can provide a relevant and constructive contribution to the work of the PT.
- c) The Chair and Vice-Chair shall each be a representative of a MS. The election of the Chair and Vice-Chair shall be decided at the first meeting after each ordinary session of the International Hydrographic Conference (IHC) (Conference to be replaced by Assembly when the revised IHO Convention enters into force) and shall be determined by vote of the MS present and voting.
- d) A Secretary should be appointed to ensure the smooth running of PT business; to administer consultation and collation of members' views; and may act as Editor of the PT's publications. The position is normally filled by a member of the PT.
- e) If the Chair is unable to carry out the duties of the office, the Vice-Chair shall act as the Chair with the same powers and duties. If the position of Chair or Vice-Chair becomes vacant before the next ordinary IHC, inter-conference elections may be conducted at the next HSPT meeting/conference call or by correspondence between PT meeting/conference calls.
- f) Any invitation of ECs shall be under approval of membership from the Chair.
- g) EC membership may be withdrawn if a majority of the MS represented in the PT agrees that an EC's continued participation is irrelevant or unconstructive to the work of the PT.

- h) All members shall inform the Chair in advance of their intention to attend meeting/conference calls of the PT.
- i) In the event that a large number of EC members seek to attend a meeting/conference call, the Chair may restrict attendance by inviting ECs to act through one or more collective representatives.

4. Procedures

- a) The PT's main tasks are listed in Section (1) above.
- b) The PT conducts its business by correspondence.
- c) Decisions shall generally be made by consensus. If votes are required on issues or to endorse proposals presented to the PT, votes shall be taken by a simple majority of the MS present and voting. When dealing with inter-sessional matters by correspondence, a simple majority of responding MS shall be required. Each MS shall have one vote.
- d) Correspondence shall be distributed by the Chair (or the secretary) within six weeks of the end of meeting/conference calls and participants' comments should be returned within three weeks of the date of dispatch. Final minutes of meeting/conference calls should be posted on the IHO website within three months after a meeting/conference call.