

## Report of the Hydrographic Surveys Working Group

<b>Submitted by:</b>	David Parker, Chair, HSWG
<b>Related Documents:</b>	B-13 v1.0 [Proposed]
<b>Related Projects:</b>	S-44 Drafting Team Manual on Hydrography Project Team (C-13) Satellite Derived Bathymetry Project Team (B-13)
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<i>See Annex A for full details for the 103 registered members of HSWG and associated Project Teams.</i>	

### Meetings Held During Reporting Period

1. In 2021, there was consensus in HSWG to hold two meetings a year, one online only, and one in person only. It was agreed that hybrid meetings were difficult to manage and often expensive for host nations to operate.
2. HSWG3 held in person, Paris, France, 10<sup>th</sup> to 12<sup>th</sup> October 2022. 24 attendees + additional online for some project team activity.
  - HSWG Work plan and objectives further progressed.
  - 1.5 days of break-out sessions for C-13 and SDB PTs.
  - SDB Best Practice Guide progressed. Document provisionally given title of B-13 by IHO.
  - C-13 Manual on Hydrography update progressed.
3. HSWG4 held via VTC 27<sup>th</sup> February to 2<sup>nd</sup> March 2023. 86 Attendees.
  - HSWG Work plan and objectives further progressed.
  - 2 days of break-out sessions for C-13 and B-13 PTs.
  - B-13 SDB Best Practice Guide draft finalised.
  - New chair and vice chair for MHPT elected.
  - C-13 Manual on Hydrography update progressed.
4. The next HSWG meeting will be held in person in Lombok, Indonesia, 2<sup>nd</sup> to 5<sup>th</sup> October 2023.

## **Work Program**

### **S-44**

An updated edition of S-44 was submitted to HSSC in 2022, and later accepted by MS. Version 6.1.0 was published October 2022. As well as some general corrections and improvements, this update was required to meet IHO Strategic Objective 2.2.2 to monitor downloads of S-44. This monitoring was implemented by IHO in advance of publication, and number of downloads is now recorded.

A 2-year update cycle for S-44 has been agreed and accepted by HSSC in 2022. Therefore, the next HSWG meeting will focus on the next revision, which will then be submitted to HSSC in 2024.

### **Manual on Hydrography Project Team**

The MHPT have met during break-out sessions within HSWG3 and 4. MHPT was chaired by Nickolas Rocher (Brazil) until October 2022, supported by Iain Slade (IFHS), but both stood down due to other commitments. Ian Davies (UK) volunteered to act as interim Chair for the HSWG3 meeting in October and was formally elected as MHPT Chair at HSWG4. Nickolas Rocher moved to the Vice-Chair position. Eoin MacCraith (Ireland) became Secretary.

MHPT are maintaining their own work plan which is subordinate to the HSWG Work Plan. See annex C.

Meetings to date have focused on what existing C-13 content is still relevant, defining new content required as well as discussing delivery formats (i.e. PDF, Web Based etc). A questionnaire was created and published in early 2023 to gather views from across member states, industry and academia as to the intended use of C-13 and required content.

### **Satellite Derived Bathymetry Project Team**

The Satellite-Derived Bathymetry Project Team (SDBPT) is chaired by Knut Hartman (EOMAP), supported by Poerbandono from Institut Teknologi Bandung (ITB Indonesia).

They are maintaining their own work plan which is subordinate to the HSWG Work Plan. See annex D.

SDBPT held an intersessional meeting in September 2022 as well as breakout sessions during HSWG3 and HSWG4. They have made good progress on their core objective to produce the Satellite-Derived Bathymetry Best Practice Guidelines. At HSWG3, IHO confirmed these guidelines would be designated B-13.

SDBPT have now completed their draft, which has also been shared across the full HSWG membership for review. V1.0 of B-13 is provided to HSSC for approval in 2023 prior to publication by IHO.

### **Other**

HSWG have established liaisons with other key WGs, such as S-100, HDWG, DQWG and TWCWG. This is intended to lead to better interactions, such as an agreed mapping between S-44 and CATZOC, and an offer has been made to TWCWG to include standards for water levels and currents within a future iteration of the S-44 standard.

### **Progress on HSSC Action Items**

As above.

### **Problems Encountered**

1. Limited progress on C-13 update until October 2023, largely due to the need to work entirely remotely due to Covid-19 pandemic.
2. Meetings via VTC only remain challenging however, VTC does enable high participation rates.
3. Attendance at in-person meeting more limited due to financial restrictions from member organisation as well as ongoing Covid related restrictions on travel.

### **Any Other Items of Note**

1. HSWG Chairing team roles will be required by ToRs to be open to election at HSWG5 in October 2023.

### **Conclusions and Recommended Actions**

- An updated version of S-44 was published in 2022. In coordination with IHO enabling download tracking on the web site, this has enabled progress against Strategic Objective 2.2.2. to be monitored.
- A two-year update mechanism for S-44 is established and ongoing.
- B-13 SDB Best Practice Guide v1.0 has been completed. HSSC are requested to review and approve for onward MS approval.
- MHPT have made a start on an update to C-13. However, this is a large task which will take a considerable amount of time.

### **Justification and Impacts**

- B-13 SDB Best Practice Guide v1.0 has been reviewed by HSWG and approved for onward publication. This will be IHO's first document on SDB, helping the method be recognised as an appropriate and useful tool in certain locations and applications, and improve understanding of both benefits and limitations.
- All other activity is work in progress in line with published work plans.

### **Action Required of HSSC**

The HSSC is invited to:

- a. Approve B-13 SDB Best Practice Guide v1.0
- b. Note proposed S-44 update cycle now established and ongoing.
- c. Agree and support proposed work plans

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### HSWG Proposed Work Plan - 2023 to 2025

#### HSWG Tasks

A	Conduct at least annual meetings of HSWG and its sub-group(s) and project team(s) (IHO Tasks 2.1.2.9).
B	Maintain and promote IHO publication S-44 – <i>Standards for Hydrographic Surveys</i> – preparing and proposing revisions and amendments to reflect changes in the demands of hydrographic data users, particularly those pertaining to data quality and standards.
C	Update, maintain, and promote IHO publication C-13 – <i>IHO Manual on Hydrography</i> – to reflect current techniques, methodologies and survey systems, in particular to ensure harmonization with the standards articulated in S-44.
D	Develop and promote Satellite Derived Bathymetry (SDB) best practice and identify future development priorities.
E	Maintain close liaison with other HSSC and IRCC working groups, in particular the work of the Data Quality Working Group (DQWG) to meet the presentation/visualization requirements of nautical data to the maritime customer, and the CBSC to support the educational and best practice elements.
F	Identify new systems, technologies and methodologies and exchange experiences, best practice and challenges amongst member states in line with the IHO objectives.
G	Act as a focal point for hydrographic surveys industry engagement with the IHO.
H	Liaise with other relevant IHO Working Groups to promote harmonization across IHO standards.

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
A-1	Organise and conduct HSWG5 meeting	H	Agree location / date / send invitation	Jan 2023	Oct 2023	O	Chair HSWGSec		One offer to host received from Indonesia. Suggested date WC 2 <sup>nd</sup> – 5 <sup>th</sup> Oct 2023
B-1	Review S-44 Edition 6.1.0	M	Prepare list of proposed updates	Jan 2022	Sept 2023	C	All		Chair team to develop proposal for WG to review
B-2	Prepare next S-44 edition v 6.2 or 6.1.1	M	Implement updates	Sept 2023	March 2024	C	S-44 editorial board		
B-3	Develop S-44 v6.1 promotional material	M	Consolidate and share material	April 2022	On going	O	Vice Chair HSWG		
B-4	Develop S-44 education material	M	Consolidate and share material	April 2022	On going	O	Vice Chair HSWG		
B-5	Identify translation opportunities for S-44	L	Supply translated material to IHO	April 2022	On going	O	Vice Chair HSWG		Dependency: Member states to supply translated documents
B-6	Monitor S-44 uptake worldwide	H	IHO Secretariat accept action to set up IHO download monitoring system	May 2022	On going	O	IHO		<a href="#">IHO Strategic Plan 2021-2026 (Goal 2 – Target 2.2.2 – page 7)</a> Dependencies: -IHO website metrics available -New edition of S-44 available
C-1	Review C-13 Edition 1.0.0	H	Initial meeting of project team (MHPT)	Oct 2022	Sept 2023	O	Chair MHPT		Prepare draft to next meeting: MHPT-5
C-2	Prepare next C-13 edition	H	Compile updates and change recommendations	Oct 2023	Feb 2025	P	Chair MHPT		Dependency: Format to be agreed by entire HSWG and IHO. Review of Progress at MHPT-6 Complete by MHPT-8
C-3	Develop C-13 promotional material	L	Consolidate and share material	Aug 2025	On going	P	Chair MHPT		

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
C-4	Develop C-13 education material	L	Consolidate and share material	Aug 2025	On going	P	Chair MHPT		
C-5	Identify translation opportunities for C-13	L	Supply translated material to IHO	2026	On going	P	Chair MHPT		
D-1	Develop SDB best practice guidelines	M	SDBPT to draft best practice guidelines	July 2021	March 2023	O	Chair SDBPT		
D-2	Identify future development priorities	L	Prioritization of technological aspects which shall be addressed by SDBBWG	July 2021	October 2022	P	Chair SDBPT		
E	Maintain liaison with HSSC and IRCC subordinate bodies – DQWG, HDWG, TWCWG, S100WG	H	Initial meetings with WGs.	July 2021	On going	O	Chair group to facilitate		Liaison for each WG established at HSWG1
F-1	Attend relevant industry events	M	Share event dates	2021	On going	O	All		Send IHO event dates
F-2	Develop new system/technology presentation material and supporting documents	M	Provide briefings to HSWG	2021	On going	O	All		
G	Attend and represent HSWG at relevant industry fora	M	Provide briefings to HSWG	2021	On going	O	All		
H	Identify areas of overlap and potential conflicts across standards	H	Provide a list of potential standards conflicts	July 2021	On going	O	Chair group		Approach S-100 and DQWG on best method to collaborate to address potential conflicts

## Annex C – MHPT Workplan

Work item	Title	Priority H-high M-medium L-low	Next milestone	Start Date	End Date	Status P-planned O-ongoing C-completed S-Superseded	Contact Person(s)	Related Pubs / Standard	Remarks
C-1	Review C-13 Edition 1.0.0	H	Identify sub-group & potential timeline	2021	2023	O	CHAIR		
C-1a	Revisit the existing C-13 edition to provide points to be addressed on the questionnaire	H	Draft of questionnaire	Nov 2021	Feb 2022	C	CHAIR		
C-1b	Questionnaire to HOs, universities etc, Hydrographic Societies, Industry	M	Questionnaire published	March 2022	May 2023	O	CHAIR		Advertise through IHO CL, linkedin etc
C-1c	Interim meeting with HSWG	M	Interim report on the progress of C-13 survey	May 2023		P	CHAIR		
C-2	Prepare next C-13 edition	H	Compile updates and change recommendations	Jun 2023	Dec 2024	P	CHAIR		
C-2a	PT Members review current C-13, provide feedback	M	Define overarching principles	March 2022	May 2023	O	CHAIR		Consolidated spreadsheet with feedback
C-2b	Consolidation of questionnaire results	M		May 2022	Jun 2023	P	CHAIR		
C-2b	Define scope of final document	H		Oct 2023	Nov 2023	P	CHAIR		
C-2c	Define delivery format	M		TBC	TBC	P	CHAIR		
C-2d	Define chapters and chapter leads	H		2024		P	CHAIR		
C-3	Develop C-13 promotional material	L	Identify lead & volunteers	2024		P	CHAIR		
C-4	Develop C-13 education material	L	Identify lead & volunteers	2024		P	CHAIR		
C-5	Identify translation opportunities for C-13	L	Identify volunteers	2024		P	CHAIR		

**Key Tasks**

- A Establishment of the SDB-PT
- B Conduct regular meeting of SDB-PT
- C Develop and maintain an SDB Best Practice Guideline, preparing and proposing revisions and amendments to reflect changes in the demands of hydrographic and other SDB data users, particularly those pertaining to data quality and standards;
- D Support IHO's Hydrographic Surveys Working Group (HSWG) in all relevant aspects of SDB
- E Support Capacity Building on SDB
- F Identify new concepts, technologies and methodologies on SDB and exchange experience, best practice and challenges amongst the Members.

Work Item	Title	Priority		Start Date	End Date	Status	Contact
A-1	Formation of the SDB-PT	H	-	-	2021-03-26	C	Chair
B-1	Organise and conduct SDB-PT meetings KO meeting	H	-	2021-03-15	2021-03-17	C	Chair
B-2	SDB-PT meeting 1	M	Confirm and identify date and time	2021-07-15	2021-08-15	C	Chair
C-1	Best Practice Guideline - Concept	H	Concept draft, identify lead & volunteers	27.09.2021	31.10.2021	C	Chair
C-2	Best Practice Guideline - Draft	H	Release of draft version	01.11.2021	25.11.2022	C	Chair
C-3	Best Practice Guideline – 1st version submitted to HSSC	H	Release of 1st Version	31.09.2022	15.04.2023	C	HSWG Chair
C-4	Review of other related materials/documents	M	consolidate existing material which can support on structure or content, such as IHO B-12, C-13 and Gebco CookBook	01.06.2021	31.10.2021	C	Chair
D-1	Present and participate at HSWG 1	H	Invite HSWG members to participate at SDB-PT, collect HSWG demand on SDB	2021-06-29	2021-07-01	C	Chair and Vice Chair
D-2	Engage with C-13 project team	M	Identify synergise and required input to interact with C-13 project team at the HSWG 1 meeting	2021-06-29	ongoing	O	Chair and Vice Chair
D-3	SDB-PT to become IHO Project Team as supporting body to IHO's HSWG	H	D-1 and TOR and Work Plan definition		2021-06-30	C	Chair
D-4	Provide HSWG with SDB-PT TOR and	H	TOR and Work Plan available at IHO	2021-06-23	2021-07-30	C	Chair

	Work Plan draft and final version		webpage				
E-1	SDB Day conference	M	Identification of best date and location and sponsor(s)/host(s)	2022-10-04	2022-10-04	C	Chair
E-2	Contribution to regional IHO meetings	M	Engage with regional IHO chairs to check interest	Ongoing	ongoing	P	Chair and Vice Chair
F-1	Identification of actions for SDB technology/innovation exercises	L	Prioritization of technological aspects which shall be addressed by SDBBWG	Q3 2023	Q4 2023	P	Chair and Vice Chair