

Report of the Crowdsourced Bathymetry Working Group

Submitted by:	Chair
Related Documents:	IHO CSBWG10 reports, IHO CSB Guidance Document (B-12) Edition 2.0.3, IHO CL 21/2020 dated 3 June 2020, IRCC CL 1/2020 dated 15 June 2020, IRCC 12-08A.2: CSBWG paper on raising the awareness of CSB within RHCs and proposed actions within RHCs to support the IHO CSB initiative
Related Projects:	None

Chair:	Jennifer Jencks, USA
Vice-Chair:	Serge Gosselin, Canada (until 25 October 2019) Marta Pratellesi, Italy (from 25 October 2019)
Secretary:	David Wyatt, IHO
Member States:	Canada, Croatia, Denmark, France, Germany, India, Italy, Netherlands, New Zealand, Norway, Portugal, UK, USA
Expert Contributors:	CCOM-JHC, CIDCO, Da Gamma Maritime Ltd, Dongseo U, ECC AS, ESRI, FarSounder, FLIR Systems AB, Fugro, GMATEK, Inc., James Cook U, JAMSTEC, Navico/C-Map, ONE Data Tech Co., Olex, PYA, Seabed 2030, Sea-ID, SevenCs/ChartWorld, TeamSurv, Teledyne CARIS, World Maritime University, and World Ocean Council
<i>See Annex A for full details</i>	

1. Meetings Held During Reporting Period

The working group held its 10th meeting, virtually, from 30 March to 02 April 2021. The meeting was led by the Chair and Vice-Chair and attended by over 50 participants, see Annex A for list of working group members. IHO Director Luigi Sinapi and Assistant Director David Wyatt (Secretary) represented the IHO Secretariat.

2. Work Programme

CSBWG10

Due to the challenges that accompany a virtually-held meeting, the scope of CSBWG9 was vastly reduced. The three day (3 hours/day) meeting focused on: Current DCDB Work and IHO Projects, Current CSB Efforts, Messaging and Outreach, and Improving our Outreach Strategy.

IHO CL 21/2020 & IRCC CL 01/2020

Following IHO CL 21/2020, the IRCC CL 01/2020 was issued to ask RHC Chairs to engage with the coastal states within their respective RHC to clarify their positions on supporting for the provision of CSB data gathered by ships within their waters.

As result of the two letters, to date, 29 member states and 1 non-IHO MS have replied positively to the new letters:

iho.int/uploads/user/Inter-Regional%20Coordination/CSBWG/MISC/B-12_2020_EN_Acceptance_of_CSB_Data_in_NWJ_v3.0.pdf

The WG continues to follow the situation very closely and is taking every possible initiative to encourage coastal states to support the CSB project in the waters subject to their national jurisdiction.

Current DCDB Work and IHO Projects

The Chair provided an update on developments to the IHO Data Centre for Digital Bathymetry (DCDB), including a major overhaul of the CSB pipeline that was currently underway, taking into account the lessons learnt over the past few years to provide a better service, improved functionalities and an enhanced user experience. She highlighted the current Trusted Nodes providing CSB data to the DCDB (Rosepoint Navigation Systems Software MacGregor/Carnival, FarSounder, PGS) and noted that significant quantities of data had been received from James Cook University (JCU) but that the data release is awaiting AHO approval. She highlighted the geographic data filter that had been developed to comply with the responses received to the IHO CLs.

Presentations on three related projects and their impact on the CSB Initiative were discussed in great detail: Nippon Foundation-GEBCO Seabed 2030 Project, Canadian Hydrographic Service (CHS) CSB activities, and An Open Hardware/Software Solution for Focused CSB Data Collection. Detailed summaries are available on the CSBWG10 web page.

Current CSB Efforts

Summaries of on-going CBS efforts and projects were provided to the WG prior to the meeting and are available on the CSBWG10 web page. Projects discussed include: DaGama Maritime, FarSounder Inc., Navico C-Map, CIDCO, James Cook University/The Great Barrier Reef Project, JAMSTEC, Canadian Hydrographic Service, Fugro and China MSA.

Activities of the DQWG relevant to the CSBWG, in particular focusing on guidelines and recommendations for HOs to allocate CATZOC values, was also given by the DQWG Chair.

Messaging and Outreach

The main purpose of this section was to focus on how the CSBWG can improve the engagement to Regional Hydrographic Commissions (RHCs) and Hydrographic Offices. The Vice-Chair highlighted the successful request to IRCC12 for the identification of Regional Coordinators (see table below) and for the inclusion of CSB activities in national reports to RHC meetings. Time was dedicated to the introduction of the Coordinators in attendance and to expectations moving forward.

RHC	Country	Coordinator Name
NHC	Norway	Evert Flier
NSHC	Germany	Patrick Westfeld
MBSHC	Italy	Marta Pratellesi

ARHC	Norway	Evert Flier
BSHC	Denmark Sweden	Jens Peter Hartmann (CSB) Hans Öiås (SB2030)
USCHC	USA	Andy Armstrong
EAHC		
EAtHC	Portugal	CMDR João Vicente Leonor Veiga
SEPRHC		
SWPHC	New Zealand	Stuart Caie
MACHC	Mexico	Cecilia Cortina Guzman
SAIHC	S. Africa	CMDR Christoff Theunissen
NIOHC	India	CMDR Rahul Bhatt
RSAHC		
SWAtHC	Uruguay	CMDR Niki Eugenio Silvera
HCA	Under discussion	

The Secretary provided brief comments on the replies received to the two IHO Circular Letters, which provided some details on reason for non-participation. He also noted the proposed terminology guidance generated by the IHO Secretariat, he highlighted that these were not revised definitions but clarifications to aid discussion and explanation at relevant meetings. The intent is for this information to be taken into account when further developing outreach strategies to HOs.

CSB Guidance and Outreach

WG members presented sector-specific CSB Summary Guides that had been drafted during the intercessional period for the following sectors: Super yacht and leisure community, Survey, Geophysical and Submarine Cable industry, Fisheries, Cruise Line industry, Software/hardware industry, Hydrographic Offices, and the Academic/Scientific Research sector. The intent is for these “2-pages” to be ready for distribution by Fall 2021.

SHOM provided brief details on proposed amendments identified during the French translation process of B-12. He noted the target audience and noted the reasons why the document should be improved, including correction of typos, update outdated information, improvement of figures, clarity of target audience and more detail of some concepts. During the intercessional period, he requested suggested amendments from the WG.

The Secretary noted that B-12 currently came under appendix 2 of IHO resolution 2/2007, as amended, which was inconsistent with it being a guidance document and not an IHO standard. It was agreed that an application should be made to IRCC13 for it to propose to HSSC for B-12 to be removed from the list in resolution 2/2007, as amended.

3. Progress on IRCC Action Items

Decision 24: to reappoint the CSBWG to continue its work under the existing ToRs.

No Actions

4. Problems Encountered

Despite the significant progress achieved over the short time of the CSBWG, ongoing problems remain. A considerable degree of confusion continues to exist between the opportunistic and random CSB data gathering activity and the UNCLOS regulated planned scientific data gathering and systematic hydrographic survey operations. It is clear that many coastal states continue to misunderstand the objectives and focus of the CSB initiative, which is to collect data in poorly surveyed or unsurveyed areas. CSB data can play a role in completing the picture of the seabed by supporting the objectives of numerous international projects and initiatives, such as Seabed 2030, the UN Decade for Ocean Science for Sustainable Development and UN Sustainable Development Goal 14, and a plethora of scientific research, modelling, management and planning uses, which might include safety of navigation either directly onto charts or as a comparator to published data. Increased awareness and information as well as continued stakeholder engagement/involvement should all help to overcome these reservations.

There continues to be concern over the apparent lack of dedicated resources available within national HOs to process data available via the DCDB. While recognizing the resource limitations particularly in the current environment, it should be considered that the quantities of data likely to be generated and of interest to individual HOs will be relatively small. Any significant variance with published data highlighted during CSB collection should be reported directly to the relevant HO via Hydrographic Note, as is the current practice; the remaining CSB data is therefore unlikely to be of major interest to HOs, except in areas where data is sparse or non-existent.

5. Any Other Items of Note

The importance of liaison with other IHO bodies, as well as appropriate engagement with industry to progress the work items, continues to be a key enabler for the project. There is also a continued need to showcase various use cases of CSB data to MS to explain the benefits and utilization of 'free' data for national uses.

The departing current DQWG Chair was thanked for his significant and valuable engagement with the CSBWG, the advice and guidance he had provided during meetings on DQ issues and his efforts to progress the vital quality assessment of CSB. It is hoped that this level of engagement and support will be maintained, as it is a vital element for the future success of the CSB initiative.

6. Justification and Impacts

The upcoming departure of the current Vice-Chair and Secretary is likely to severely impact the progress of the CSBWG. The current and former Vice-Chairs were both active, excellently led meetings in the absence of the Chair, and have provided great knowledge of the inner-workings of HOs and RHCs. Though the Vice Chair has officially stepped down, she has agreed to continue to support the Chair until the end of May 2021.

The upcoming replacement of the Secretary is also of great concern as the history of the IHO and Member States stance on CSB has been vital during the sometimes very complex discussions on guidance document development, outreach strategies etc.

7. Actions Required of IRCC

The IRCC is invited to:

- a. Note the contents of this report;

- b. Consider submitting a proposal to HSSC for B-12 to be removed from the list in appendix 2 of resolution 2/2007, as amended.
- c. Encourage all Member States to respond to IHO CL 21/2020 and, if possible, offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.
- d. Encourage all RHC Chairs states to bring the IRCC CL 1/2020 to the attention of all coastal states with their respective RHC, encouraging them to offer a positive response, even if qualified, to enable provision of enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.
- e. Encourage Member States to release datasets or subsets into the public domain via the IHO DCDB;
- f. Encourage Member States to support the CSB initiative with positive actions, such as requiring all research vessels to collect bathymetric data for late uploading, when on passage or when it does not interfere with other research activities;
- g. Take what other action is deemed necessary.

Annexes:

- A. List of members.

**IHO Crowd-Sourced Bathymetry Working Group (CSBWG)
List of Members**

Member State	Organization	Name	E-mail (correspondence)
Canada	Canadian Hydrographic Service (CHS)	Mathieu Rondeau	Mathieu.Rondeau@dfo-mpo.gc.ca
Canada	Canadian Hydrographic Service (CHS)	Peter Wills	Peter.Wills@dfo-mpo.gc.ca
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Italy	Istituto Idrografico della Marina	Marta Pratellesi (vice-Chair)	marta.pratellesi@marina.difesa.it
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New Zealand	National Institute of Water & Atmospheric Research Ltd (NIWA)/Seabed 2030 - South and West Pacific	Kevin Mackay	Kevin.Mackay@niwa.co.nz
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USA	NOAA National Centers for Environmental Information (NCEI)	Jennifer Jencks (Chair)	jennifer.jencks@noaa.gov
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IHO	IHO	David Wyatt (Secretary)	adso@iho.int
Observer	NF-GEBCO Seabed 2030	Jamie McMichael-Phillips	director@seabed2030.org
Expert Contributor	Centre for Coastal and Ocean Mapping - Joint Hydrographic Center, University of New Hampshire (CCOM-JHC/UNH)	Brian Calder	brc@ccom.unh.edu
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