

Request for guidance from the IHO DQWG regarding the usage of crowdsourced bathymetric data on official nautical charts produced by Hydrographic Offices.

Submitted by:	IHO CSBWG Chair and Vice-Chair
Executive summary:	The IHO CSBWG requests guidance on the usage of CSB data on official nautical charts, specifically on the importance of data quality assessments and general good practices by HOs from the DQWG.
Related Documents:	CSBWG 8 (2019) and CSBWG9 (2020) Reports DQWG ToR DQWG: national methodologies from survey to CATZOC values S-67 Mariners Guide to accuracy of depth information in ENCs, Ed. 2020 S-44 International Hydrographic Organization Standards for Hydrographic Surveys, Ed. 2020 B-12 Guidance on Crowdsourced Bathymetry
Related Projects:	??

Introduction/background

In 2019 a direct link was established between the DQWG and the Crowdsourced Bathymetry Working Group (CSBWG) thanks to a dedicated amendment in the ToRs of the WGs. The connection has achieved very good results thanks to the active participation of the DQWG Chair at the CSBWG meetings and CSBWG member attendance at the DQWG meetings.

During CSBWG8 (October 2019), the DQWG Chair gave a presentation about the usage of data quality for safe navigation and highlighted the importance of assessing the quality of data: “*Good data quality does not mean that the quality of the data has to be good. It means that the end user is well informed on how good the Quality of the Data is*”. This statement is about a specific responsibility of the HOs and it was noted and endorsed by HSSC and IRCC. It is a pillar of the DQWG work.

The CSBWG is experiencing continued reluctance by many HOs regarding the usage of CSB data in their products and to the participation in CSB activities in general. There are many reasons behind this cautious approach. Among them, the quality of CSB data is often considered not “adequate” for official products no matter the source of the data. Moreover, the lack of resources to process this kind of data and make quality assessments is considered as justification behind the decision to reject CSB data as a resource.

During CSBWG9 (June 2020) it was suggested: “*a **white paper** could be created on guidelines on how CSB could be used by HOs, which could be endorsed by IHO Member States. It was noted that focusing on using CSB for charting, rather than simply building a complete picture of the seafloor, had the potential of tying CSB into definitions under UNCLOS; however it was noted that there was a need to overcome HO reluctance to use the data where appropriate and a real need to provide guidance to HOs to assist in overcoming these view*” (see CSBWG9 minutes).

Moreover, the following action was agreed upon, “*Request DQWG investigate data quality parameters and indicators for use by HOs and provide further guidance*” (action 28).

Analysis/Discussion

Taking into account the DQWG document on data validation principles, the CSBWG requests specific guidance from DQWG with the aim to address and reduce the resistance of the use of CSB data by HOs. This type of data should be approached merely as another data source at the disposal of the hydrographer/cartographer. As a consequence a specific data quality should be assessed by the relevant user (HO) and provided to the mariner.

Despite old SBES or lead line data collected by HOs continuing to be used on official products and regarded as “better than nothing”, there exists a general reluctance to use CSB data gathered by modern SBES or MBES (see B-12 definition for CSB) and positioned by GPS. Many HOs simply refuse to see these data as a resource but instead as a burden to be processed. There are approximately 60,000 SOLAS vessels and 130,000 private yachts collecting depth data on a daily basis. This data can have added value to the official products of an HO, especially in remote areas of depth < 100 m.

It is generally recognised that the data usage on charts is about making an assessment on data quality. In this regard, it is worth mentioning that the new edition of S-44 “International Hydrographic Organization Standards for Hydrographic Surveys, Ed. 2020” considers CSB data as hydrographic data at the disposal of the hydrographer and the cartographer.

A DQWG white paper on CSB data usage by MSs could provide useful advice for HOs about the possibility to use CSB as a resource. The requested guidance should consider if:

1. MSs are/are not currently using CSB in their paper or digital charts
 - a. If yes (1), CATZOC attribution to CSB data
 - b. If not (1), why MSs are not using CSB
2. MSs using CSB with a “signalling” function (data to be compared with existing data)
3. MSs considering “historical data” as CSB data.

The result of a DQWG analysis, endorsed by the DQWG, could be forwarded to the CSBWG for further discussion on how best to disseminate to HO’s and other working groups.

Action required by DQWG

The IHO Crowdsourced Bathymetry Working Group request DQWG to:

- (1) Note this paper
- (2) Support the CSBWG through the draft of a White Paper for HOs usage of CSB data, providing advices and best practices.