



IHO File No. S1/6000/2017

**ASSEMBLY CIRCULAR LETTER No. 10 bis-2
07 December 2016**

**1st SESSION OF THE IHO ASSEMBLY
Monaco, 24-28 April 2017**

**ADDITIONAL PROPOSAL FOR CONSIDERATION BY
THE 1st SESSION OF THE IHO ASSEMBLY**

References:

- A. Conference Circular Letter No. 2 dated 22 April 2016 - *Submission of proposals to the Conference / Assembly*
- B. Assembly Circular Letter No. 10 dated 2 September 2016 – *Proposals for consideration by the 1st Session of the IHO Assembly*
- C. Assembly Circular Letter No. 8 dated 23 August 2016 - *Revision of the timeline for the preparation of the 1st Session of the IHO Assembly (A-1)*

Dear Hydrographer,

1. Reference A invited Member States to submit proposals in accordance with the Rules of Procedure applicable to International Hydrographic Conferences. Reference B circulated the proposals received for comments and, in accordance with the Rules of Procedure of the IHO Assembly, invited additional proposals until 15 December 2016. Reference B indicated that the additional proposals would be circulated as soon as they were received.

2. A proposal prepared by the IHO Secretariat in liaison with the Chair of the Inter-Regional Coordination Committee is attached at Annex A. Member States are invited to forward any comments on this proposal to the Secretariat (by e-mail: cl-lc@iho.int or by fax: +377 93 10 81 40) **no later than 30 January 2017**, in accordance with the revised timeline at Reference C.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Robert Ward', is positioned above the typed name.

Robert WARD
Secretary-General

Annex A: Proposal PRO-11 submitted for consideration by the 1st Session of the IHO Assembly.

PRO 11: PROPOSAL TO ADOPT A RESOLUTION ON IMPROVING THE AVAILABILITY OF BATHYMETRIC DATA WORLDWIDE

Submitted by: IHO Secretariat (Secretary-General)

PROPOSAL: To adopt a Resolution on improving the availability of bathymetric data worldwide

Improving the Availability of Bathymetric Data Worldwide

Noting that the depth of a significant percentage of the world's seas, oceans and waterways has yet to be measured directly;

Noting that bathymetric knowledge underpins the safe, sustainable, cost effective execution of almost every human activity in, on or under the sea;

Recognizing the relevance of bathymetry in the maritime aspects of the UN's 2030 Agenda for Sustainable Development Goals, the Paris Agreement under the United Nations Framework Convention on Climate Change and the Sendai Framework for Disaster Risk Reduction 2015-2030;

Noting that significant amounts of bathymetric data is collected by the scientific and commercial sector for purposes other than chart improvement, but is not easily made discoverable or available for secondary purposes;

Noting that in the absence of any data, bathymetric data that may not support precise navigation may nevertheless still be useful for many potential users of the world's seas, oceans and waterways;

1. Member States **resolve** that, in addition to fulfilling their international obligations to provide hydrographic information in support of safety of navigation, they should also consider implementing mechanisms that encourage the widest possible availability of all hydrographic and particularly bathymetric data, so as to support the sustainable development, management and governance of the marine environment. This may be achieved in several ways, including:

- a. active participation in and contribution to the marine element of national Spatial Data Infrastructures (MSDI);
- b. continued support for the IHO-IOC GEBCO project and the IHO Data Centre for Digital Bathymetry;
- c. encouraging the scientific and the commercial sector to identify and wherever possible make available for secondary use, data collected or being collected for a specific scientific or commercial purpose;
- c. supporting systems and infrastructures, such as MSDI and the IHO DCDB, that facilitate data discovery, thereby avoiding unnecessary duplication in bathymetric data collection;
- e. encouraging supplementary methods for collecting bathymetric data, including, but not limited to:
 - (1) Crowd-Sourced Bathymetry,
 - (2) Satellite Derived Bathymetry,
 - (3) The use of autonomous vehicles for the collection of environmental data including bathymetry.

EXPLANATORY NOTE:

Background

1. Proposal 6 of the XVIIIth International Hydrographic Conference, held in April 2012, considered the global status of hydrographic surveying and tasked ... *the IRCC and HSSC in cooperation with the Directing Committee to progress whatever actions are required to improve the collection, quality and availability of hydrographic data worldwide, monitor and rectify possible deficiencies and shortcomings, cooperate with other international organizations and stakeholders as necessary, and to keep Member States informed on progress on this issue.* (see IHC18-Decision 17).
2. At the 5th Extraordinary International Hydrographic Conference, held in October 2014, several discussions and considerations took place on ways to improve the current lack of bathymetric knowledge of many parts of the world's seas, oceans and waterways. Discussion at the Conference led to the need to explore sources of bathymetric data outside traditional surveys – particularly in support of providing a baseline global bathymetric model for the many non-navigational uses for bathymetry that are now emerging. This resulted in the establishment of a Crowd-Sourced Bathymetry Working Group (CSBWG) to provide guidance on how the IHO could encourage crowd-sourcing. Other potential sources of bathymetry such as the use of satellite-derived bathymetry were discussed. The role of Marine Spatial Data Infrastructures (MSDI) in improving access to hydrographic data was also highlighted. Discussions on these topics have continued to take place in most of the Regional Hydrographic Commissions.

Bathymetry Supporting the World's Increased Focus on the Sea

3. The focus on the world's seas, oceans and waterways continues to increase. The world is increasingly looking to the sea for resources. The concept of the *blue economy* is now firmly in place. At the same time, there is growing awareness of mankind's dependence on and vulnerability from the sea, ranging from destruction caused by natural disasters such as tsunami and storm surges, to over-fishing and the inappropriate use of the sea's resources, to pollution and climate change. As a result, several high-level global initiatives are now in place that seek to address these issues, including the United Nation's 2030 Agenda for Sustainable Development Goals, the Paris Agreement under the United Nations Framework Convention on Climate Change and the Sendai Framework for Disaster Risk Reduction 2015-2030.
4. In this context, the shortfall in bathymetric data is all the more significant, since both scientific study and the success of almost every human endeavour in the maritime domain depends in one way or another on knowing the depth and shape of the seafloor.

Potential Sources of Additional Bathymetric Data

Crowd-Sourced Bathymetry

5. The International Maritime Organization (IMO) Safety of Life At Sea (SOLAS) carriage requirements obliges all commercial vessels to be equipped with certified, and inherently reliable, echo sounders and satellite-based position fixing systems. As such, the world's commercial fleet represents a significant untapped source of bathymetric observations. While these observations may not meet charting requirements for critical passages, such observations may still serve a very useful purpose, particularly in depths where data is old or of limited quality. Crowd-sourced bathymetry can be used to identify significant features that might merit further investigation by appropriately equipped surveying vessels. Crowd-sourced bathymetry can assist in verifying existing charted information, thereby avoiding the need for re-surveying. The location of crowd-sourced bathymetry can also help to confirm that charting schemes are appropriate for the current traffic patterns. In areas where otherwise little or no data exists, then crowd-sourced data, supported by appropriate metadata that will allow users to determine its fitness for their purpose, is useful. Many development activities and scientific studies require only an approximate depth, rather than depths measured to meet precise navigation requirements.

Data collected for scientific and other commercial purposes

6. Another very significant and largely untapped source of bathymetric data is from the scientific research and the commercial surveying sectors.

7. Informal discussion between the IHO Secretariat and several representatives of industry and academia that participate in IHO activities either as Expert contributors or as Observers indicates that survey data collected for a variety of scientific and commercial purposes could be more widely used.

8. Commercial survey companies enter into contracts both with Government departments and with commercial entities to undertake surveys that, if not solely hydrographic, at least contain a bathymetric element. The surveying companies render the collected data solely to their clients as they are contractually obliged to do, but in the knowledge that, whilst meeting the needs of the task, all or parts of the data could be exploited for much wider use and benefit. It is estimated that no more than 20% of the bathymetric data collected commercially during surveys for specific projects is made available to Hydrographic Offices for inclusion in charts or for wider uses.

9. Similarly, bathymetric data collected for scientific purposes often suffers a similar fate to commercially collected data, in that it is used for its primary purpose and then either archived or abandoned. In many cases, the existence of the data is difficult to discover. In addition, scientific vessels that are equipped to collect bathymetry, most often only collect data in the specific area of scientific interest. The concept of passage sounding is not widely understood or incorporated into voyage planning.

Purpose of the Resolution

10. The Resolution is intended to reaffirm the IHO's recognition of the existing shortfall in bathymetric knowledge of the seas, oceans and waterways and its consequences and the need, therefore, to urgently address this shortfall.

11. The Resolution is intended to indicate both to Member States and to others, such as commercial ship operators, academia and the commercial surveying sector that may be able to assist, that there are practical, generally low-cost, mechanisms available that can help address the global shortfall in hydrographic knowledge.

12. The Resolution is intended to support the current work of the MSDIWG, the CSBWG, the GEBCO Guiding Committee and the IHO Data Centre for Digital Bathymetry (DCDB).