

**16<sup>th</sup> Conference of the IHO Hydrographic Commission on Antarctica (HCA)  
and  
HCA Seminar at the XLII Antarctic Treaty Consultative Meeting,  
Prague, Czech Republic  
3-5 July 2019**

**SUMMARY REPORT**

- Notes:**
- 1) *All documents considered at the HCA-16 Conference are available on the HCA page of the IHO website ([www.iho.int](http://www.iho.int) > Committees & WGs > IRCC >... > HCA-16 > Documents).*
  - 2) *For the sake of efficiency and simplicity, these minutes consist in an expanded version of the summary/bulletin report that was made available just after the meeting.*

**Reference:** A. [HCA-16 agenda and timetable](#)

- Annexes:**
- A. *ATCM Resolution 6 (2019) – Hydrographic Mapping of Antarctic Waters*
  - B. *List of Decisions and Actions arising from HCA-16*
  - C. *Comments offered by Chile on the Summary Report and tentative responses from the HCA Chair*

**Introduction**

1. The IHO Hydrographic Commission on Antarctica (HCA) operates in a similar way to the other 15 Regional Hydrographic Commissions that encompass the world. Born by initiative of IHO Member States which are Member States of the Antarctic Treaty too, the HCA seeks to coordinate hydrographic activities so as to improve the quality, coverage and availability of nautical charting and other hydrographic data, information and services covering the Antarctic region. Due to the specifics of the legal conditions of Antarctic territories, their remoteness from civilization and its poorly explored state, HCA statutes put special emphasis on a collaborative approach of all Member States activities and addresses the support of scientific activities on the same level as safety of navigation.
2. The 16<sup>th</sup> Conference of the IHO Hydrographic Commission on Antarctica took place at the Grandior Hotel in Prague, Czech Republic from 3 to 5 July, for the first time in a landlocked State taking the opportunity of conducting an HCA Seminar at the XLII Antarctic Treaty Consultative Meeting (ATCM), raising the awareness of ATCM delegates on the importance of



hydrography. Since the Czech Republic is not an IHO Member, the Secretariat had the organizing role for the event.

### **Participation – HCA Statutes**

3. The Conference was chaired by Dr Mathias Jonas, Secretary-General of the IHO, supported by Assistant Director Yves Guillam, HCA Secretary and Ms Caroline Fontanili (IHO Secretariat). Sixteen delegates from 10 Member States (Australia, Chile, Colombia, Germany, Italy, Norway, Republic of Korea, Spain, United Kingdom, United States of America) and one subject matter expert (GEBCO IBCSO Chair), attended the meeting. Apologies were received from Argentina, Brazil, France, Japan and New Zealand who were unable to attend but provided their national reports. Mr Patrick Dorr (USA) was re-elected as Vice-Chair.
4. Noting that amendments to the IHO Resolution 02/1997 – *Establishment of Regional Hydrographic Commissions* - proposed by the IRCC were submitted to the upcoming third Council for endorsement and then need to be approved by the IHO Member States, the Conference agreed to apply the resulting editorial adaptations to the HCA Statutes only when the approval process is completed. The update of the HCA Statutes will also include the addition of a new ATCM Resolution that was adopted at the XLII ATCM (see paragraph 20 below) as appendix.

### **Status report on the actions from HCA-15 and national reports**

5. The HCA reviewed progress made since its 15th Conference held in 2018 and received reports from the IHO Member States present. Reports received from Member States not present were delivered by the Secretariat. The reports remarkably demonstrated that numerous HCA members are strengthening their engagement for the Antarctic in terms of new ship's capacity for survey and research, facility infrastructure improvements and investment in new carrier technology such as autonomous surface vessels (ASV).
6. A presentation of the application to Antarctic waters of the risk assessment tool developed by LINZ, New Zealand, was provided by Australia. Depending on its applicability, other members might be interested to apply this tool in their areas of interest as it can become an important decision aid to assess the possible consequences of unsurveyed areas to safety of navigation and environmental protection.
7. Some concerns were raised about survey data exchange procedures among different chart producers with regard to the charting of *Deception Island*. It was agreed to assess the situation and current practices in this particular area, to identify the deficiencies if any in order to make sure that there is no shortfall in IHO procedures and guidelines on information sharing and charting responsibilities as far as safety of navigation is concerned. It was agreed to develop a case study with different options in this particular region where more than one chart producer of INT paper chart and/or ENC cover the same geographical area.

### **HCA Chair's Report**

8. The Chair delivered the Secretariat's Report. He explained the association of the Commission to the relevant IHO bodies, namely IRCC, the IHO Council and the IHO Assembly and provided information on the preparations of the centenary celebrations of the international cooperation in hydrography with the peak event of the 100<sup>th</sup> anniversary of the IHO in 2021.

9. The Chair also informed HCA members that Turkey is currently in discussion with the IHO regarding membership to the HCA. Turkey has been surveying in Antarctica and has offered to share data with the HCA Hydrographic Priorities Working Group (HPWG) and chart producing countries.
10. Following these IHO corporate matters, the Chair presented the objectives of the HCA seminar and the expected outcome. Some draft presentations were amended following fruitful remarks suggested by HCA members.

### **Status of INT charts and ENC production**

11. Mr Andy Willett (UKHO), Chair of the HCA Hydrographic Priorities Working Group (HPWG), noted the solid progress in the review of paper chart and ENC schemes for Region M along with the review of maritime shipping routes (MSR) and updating of the survey priorities list. There is currently a proposal to add one new MSR to support new INT charts aligned with IAATO ship statistics. The HPWG Chair noted the use of IAATO real time AIS to monitor vessel locations and deficiencies in navigational coverage.
12. The charts scheming (incl. ENC) of some geographic areas, such as *Deception Island* and *Jang Bogo*, might need to be re-considered in accordance with S-11, in the light of the outcome of the case study mentioned in paragraph 7 above.
13. As it was his last meeting, Mr Andy Willett was commended for his outstanding contribution in HCA activities. The HCA welcomed the designation of Mr Lee Truscott (UKHO) to succeed Mr Willett as Region M Coordinator and Chair of the HPWG.

### **IHO Digital Bathymetric Database and GEBCO Seabed 2030**

14. HCA members were again invited to consider the possibility of extracting and releasing the bathymetric information contained in their ENCs covering Antarctic waters to the IHO DCDB, as well as new survey data of the region through direct provision.
15. Following a presentation on Seabed 2030, HCA invited the Chair of the Southern Ocean Regional Data Assembly & Coordination Center (RDACC) for Seabed 2030 (Alfred Wegener Institute Bremerhaven, Germany), also Chair of the IBCSO, to keep the HCA informed on the developments in progress and to clarify the data flows and responsibilities between data producers/RDACC and IHO DCDB.

### **HCA GIS**

16. The HCA Secretariat presented the current status and future development of the INTToGIS Phase II Project. Upgrades will include Polar Regions (Arctic and Antarctic) with ENC scheme management procedures (S-11 Part A, Ed 3.1.0 refers), CATZOC values and additional AIS traffic density.
17. The HCA Secretariat also informed the participants on the transition in progress for the HCA GIS, from the current quite invisible situation to Quantarctica (<https://quantarctica.npolar.no/>) in which the HCA GIS datasets will be getting the status of "Quantarctica Friend". The HCA component of the draft Guidebook for Quantarctica Users and the general strategy for the interconnection between HCA GIS and Quantarctica was introduced to the Commission.

## Hydrographic Seminar at ATCM

18. The Conference occurred in conjunction with the XLII Antarctic Treaty Consultative Meeting where the IHO was invited to present a seminar on the status and impact of hydrography in Antarctic waters. In the HCA Conference, priority was therefore given to the final preparation of this seminar and its debrief.
19. The Secretary-General of the IHO and the National Hydrographers of Chile and the United Kingdom presented papers on international collaboration, safety of navigation and crowd sourced bathymetry. They were strongly supported by some delegations such as Australia, Italy, Norway, Spain and the United States of America. A new Resolution on hydrography initially proposed by Norway and co-sponsored by Italy, New Zealand and the United States, was adopted (See Annex A). This event also enabled re-engagement with COMNAP and SCAR. One of the lessons learnt from ATCM was the lack of communication within nations to engage and even raise the awareness of IHO activities.



## Conclusion

20. The HCA Chair thanked the delegates for their active participation in the Conference which agreed on the List of Decisions and Actions as provided in Annex B.
21. The HCA Chair also thanked national delegations that attended the HCA seminar embedded in ATCM, for their positive contribution to its objective.
22. Finally and noting that priority will be given in 2020 to the 2nd Session of the IHO Assembly, it was agreed to plan the 17th Conference of the HCA back-to-back with XLIV ATCM (Paris, 2021).

## ATCM Resolution 6 (2019)

### Hydrographic Mapping of Antarctic Waters

#### The Representatives,

*Recalling and noting* the continued validity of Recommendation XV-19 (1989) and Resolutions 1 (1995), 3 (2003), 5 (2008), 2 (2010) and 5 (2014), which contain general provisions regarding cooperation on hydrographic surveying and charting of Antarctic waters;

*Considering* that reliable hydrographic data and nautical charts are essential for safe maritime operations and the protection of the marine environment;

*Noting* that the collection of accurate bathymetric data will improve navigational safety and support a range of other applications, including scientific research, management and monitoring of the marine environment, hazard and risk assessment, search and rescue activities and operational activities;

*Concerned* to ensure progress on hydrographic mapping and bathymetric data collection for Antarctic waters to minimise the risk of harm to people, ships, and the environment within the region;

*Acknowledging* the efforts of the International Hydrographic Organization (“IHO”) Data Center for Digital Bathymetry (“DCDB”), the Nippon-Foundation General Bathymetric Chart of the Oceans (“GEBCO”) Seabed 2030 project and the IHO Crowdsourced Bathymetry Data Working Group;

*Recognising* the role of the IHO Commission on Antarctica in the coordination of hydrographic surveying and nautical charting in the Antarctic region, and the value of cooperating with the Scientific Committee on Antarctic Research (“SCAR”), the Council of Managers of National Antarctic Programs (“COMNAP”), the International Association of Antarctica Tour Operators (“IAATO”) and other relevant expert bodies;

#### Recommend that their Governments:

1. give priority to reviewing existing bathymetric data holdings and collecting new bathymetric data in the Antarctic region by:
  - a. encouraging their national programme vessels and other vessels under their jurisdiction, including non-governmental vessels, as appropriate, to:
    - i. review existing bathymetric data holdings for inclusion, either directly or through their national hydrographic office, in the IHO DCDB;
    - ii. undertake hydrographic and bathymetric data collection on all their Antarctic voyages, as practicable;
    - iii. utilise IHO guidelines where appropriate, including the IHO *Publication B-12 – Crowdsourced Bathymetry Guidance Document*,

- iv. share all data collected with the IHO DCDB, through their national hydrographic office, where applicable, or directly;
  - b. encouraging cooperation between national research institutions and mapping institutions/authorities on hydrographic surveying and charting in the Antarctic region to ensure the use of basic hydrographic survey guidelines in order to secure the highest value of collected data for the widest possible (re)use;
2. recommend that Parties endeavour to find additional resources for improving hydrographic surveying and charting in the Antarctic region; and
3. encourage those Parties who are also Parties to the Convention on the Conservation of Antarctic Marine Living Resources ("CCAMLR") to consider possible actions to ensure that fishing vessels and vessels undertaking CCAMLR research operating in the CCAMLR Convention area, which are under their respective jurisdiction, undertake hydrographic and bathymetric data collection on all their Antarctic voyages, as practicable.

**LIST OF DECISIONS and ACTIONS FROM HCA-16**  
**(as of 5 July 2019)**

Decision/Action	Agenda Item	Details	Target Date	Status (July 2019)
	<b>1.</b>	<b>Opening – Welcome Address</b>		
	<b>2.</b>	<b>Approval of Agenda and Timetable</b>		
HCA16/01		HCA Members approved the agenda and timetable.		Decision
	<b>3.</b>	<b>HCA Membership Status and Statutes</b>		
HCA16/02		HCA Members and Observers to provide their updates on the HCA Membership List to the HCA Sec. as appropriate.	Permanent	
HCA16/03		HCA Secretary to liaise with COMNAP's and SCAR's contacts made at ATCM XLII for getting their updates to the HCA Membership List.	Aug 2019	
HCA16/04		USA agreed to draft proposed amendments to the HCA Statutes when the revised Resolution 2/1997 on the RHCs is endorsed by C-3 and approved at A-2	HCA-17	
	<b>4.</b>	<b>Election of Vice-Chair</b>		
HCA16/05		Mr Patrick Dorr (NGA, USA) was re-elected as HCA Vice-Chair.		Decision
	<b>5.</b>	<b>Review of Status of List of Actions resulting from HCA-15</b>		
HCA16/06 (former HCA15/07)		HCA agreed that, as a matter of principles, the current producer nations in Antarctica should be encouraged to consider the future production and distribution of S-100 based products for Antarctica, in their areas of charting responsibilities		Decision

Decision/Action	Agenda Item	Details	Target Date	Status (July 2019)
HCA16/07 (former HCA15/09)		<b>HCA</b> agreed that the Region M Coordinator, in liaison with HCA Secretariat and the RENCs, has the responsibility to check and monitor ENC overlaps within the Antarctic region		Decision
HCA16/07a		<b>HCA</b> agreed on the principles following up Action C1/34, that <b>HCA Members</b> should be encouraged to ensure that bathymetric information contained in their HCA ENCs should be extracted and transmitted to the IHO DCDB, as a first step to improve marine knowledge.		Decision (See also WENDWG9/12)
HCA16/07b		<b>HCA Members</b> , binded by the Antarctic Treaty, are encouraged to ensure that bathymetric information contained in their surveys is transmitted to the IHO DCDB (new ATCM Resolution 6 (2019), as approved at ATCM XLII).		Decision
HCA16/08 (former HCA15/11)		<b>IAATO</b> to check if the new approved guidance on crowd-sourced bathymetry (B-12) can be implemented technically – possibly by export from Voyage Data Recorder recordings (experimentation in progress)	HCA-17	
HCA16/09 (former HCA15/14)		<b>HCA Chair</b> (in liaison with <b>ARHC Members</b> ) to monitor the preparation of the messages in support of the use of low frequency multibeam echosounders (follow-up action in relation to the United Nations theme “ <i>anthropogenic underwater noise reduction</i> ”)	HCA-17	Action in progress in ARHC (CA leads)
	<b>6.</b>	<b>IHO Seminar at ATCM XLII (Final Preparation and Rehearsal)</b>		
	<b>6.1</b>	<b>Presentations supporting the HCA Seminar at ATCM XLII</b>		
HCA16/10		<b>HCA</b> agreed on the key messages to be delivered at the HCA Seminar at ATCM XLII		Decision
HCA16/11		<b>HCA Chair</b> (ideally represented by <b>HCA Member</b> according to the host country/region) to consider the possibility of participating, every second year, either in COMNAP or SCAR meetings, alternatively with ATCM meetings.	HCA-17, and as appropriate	



Decision/Action	Agenda Item	Details	Target Date	Status (July 2019)
HCA16/12		Following suggestions made by COMNAP at ATCM XLII, <b>HCA Chair</b> to liaise with CSBWG (poc <b>Italy</b> ) inviting them to investigate whether it is appropriate to extend the scope of a future edition of B-12, to airborne assets.	HCA-17	
HCA16/13		<b>USA</b> to note the need to incorporate the new Resolution on hydrography as approved at ATCM XLII, in the proposed amendments to the HCA Statutes.		Action HCA16/04 refers
	<b>7.</b>	<b>HCA activities in relation to the IHO Work Programme</b>		
	<b>7.1</b>	<b>Interaction with IHO-IOC GEBCO / IBCSO</b>		
HCA16/14 (former HCA15/22)		<b>HCA Members</b> to provide existing survey coverage metadata in Antarctica (south of 50°S, - as shp files if possible - , and point of contact) to IHO Sec. and to the GEBCO IBCSO Project Leader (Dr Boris Dorschel, AWI)	Permanent	
HCA16/15		<b>HCA</b> to assess/monitor the effectiveness of the data flow processes between Seabed 2030 Data Centres and the IHO DCDB	HCA-17	
	<b>7.2</b>	<b>National Reports</b>		
HCA16/16		<b>HCA</b> took note of the national reports provided by HCA Members and noted the progress made since 2018 by the HCA Members.		Decision
HCA16/17 (former HCA15/33)		Noting the benefits that can be made from CATZOC values in HCA ENC's for risk assessment purposes, <b>HCA</b> agreed to keep the C-55 geographic segmentation in Antarctica as it is, for the time being.		Decision
HCA16/18		<b>HCA Secretary</b> to provide a composite report of the actual CATZOC values in Antarctica	HCA-17	
HCA16/19 (former HCA15/24)		<b>AUNZ</b> to consider the possibility of providing an update on the application, in Antarctica, of the risk assessment tool developed by LINZ and if it can be documented and made available to share with other <b>HCA Members</b> and the HCA GIS	HCA-17	See NZ National Report at HCA-16

Decision/Action	Agenda Item	Details	Target Date	Status (July 2019)
HCA16/20 (Former HCA15/25, HCA14/17)		<b>AR, CL, ES, GB</b> (lead as Region M Chart Coordinator), with the assistance of the IHO Secretariat if deemed necessary, to circulate to HCA Members a case study describing the different technical options and associated data exchange procedures available for the long term, aiming to ensure a consistent, unique and maintained charting coverage (both INT charts and ENC's) of Deception Island.  Outcome to be considered as best practices for other areas.	June 2020	
HCA16/21		Meanwhile, and during this case study phase (see Action HCA16/20 above), <b>HCA</b> urges the different producers of charts covering Deception Island ( <b>AR, CL, ES, GB</b> ) to establish a robust technical procedure iaw S-4 and S-11, to exchange <u>data</u> that are relevant for safe navigation in this area, and report to the HCA Chair/Secretary on the progress made in the development of this procedure.	Sep. 2019	
HCA16/22 (former HCA15/26, HCA14/18)		<b>KR</b> to submit a formal and consolidated proposal to the Region M Coordinator (UKHO) iaw S-11 Part A for possible new INT charts and corresponding ENC's, covering Jang Bogo Approaches.	<del>Dec. 2018</del> Dec. 2019	
HCA16/23		<b>HCA Members</b> took note of the offer made by Colombia to participate in their Antarctic campaigns (contact: <a href="mailto:jquinteroi@dimar.mil.co">jquinteroi@dimar.mil.co</a> )	End of July	
	<b>7.3</b>	<b>HCA Hydrography Priorities Working Group</b>		
HCA16/24		<b>HCA</b> took note of the report and agreed on the proposals made by the HPWG Chair (Doc. HCA16-07.3B refers).		<u>Decision</u>
HCA16/25		<b>HPWG Chair</b> to provide the IHO Secretariat with the updated MSR in shp file format as agreed in the Decision above (HCA16/24), ...taking into account <b>HCA Members'</b> comments if any.	Dec. 2019  Sept. 2019	

Decision/Action	Agenda Item	Details	Target Date	Status (July 2019)
HCA16/26		<b>HCA</b> commended Mr Andy Willett (UKHO) for his outstanding contribution in HCA, as Region M Chart Coordinator and Chair of the HCA HPWG, for more than 15 years. <b>HCA</b> welcomed the designation of Mr Lee Truscott (UKHO) to succeed him in both positions.		Decision
	<b>7.4</b>	<b>INT Charts and ENC Scheming and Production</b>		
HCA16/27		<b>HCA</b> approved the amendments to the INT Charts and ENC Schemes as proposed by the Region M Coordinator in his report (Doc. HCA16-07.4A refers), although inviting UKHO to keep some plans in the INT Charts Scheme for Region M, despite the lack of new survey data.		Decision
HCA16/28 (former HCA15/32)		Noting the current status of the HCA GIS, the developments in progress (INToGIS II, national MSDI Polar portals, Quantarctica...), and the outcomes of the survey made by HCA Letter 02/2017, <b>HCA Secretariat</b> to prepare the implementation of the transition of the HCA GIS and the interconnexion to Quantarctica, as described in Doc. HCA16-07.4C v2.	HCA-17	
HCA16/29		<b>HCA Members</b> to provide inputs/comments, if any, on the draft Edition 1.0 of the HCA Guidebook for Quantarctica Users (15 Sept 2019).	15 Sep 2019	
	<b>8.</b>	<b>Any other business – Preparation of C-3 and A-2</b>		
	<b>9.</b>	<b>Date and Venue of Next Conferences</b>		
HCA16/30		Noting that ATCM XLIV (2021) is likely to be in Paris, <b>HCA-17</b> is planned in Monaco (or France, to be confirmed) during the same period of the ATCM meeting.		Decision
HCA16/31		<b>HCA Members</b> to consider the possibility of hosting HCA-18 in 20xx and report to the HCA Secretariat.	HCA-17	

**Comments offered by Chile on the Summary Report  
and tentative responses by the HCA Chair**

**CHILE**

With regard to the List of Decisions and Actions from HCA-16, we have a couple of comments to make:

HCA16/14 (former HCA15/22)	<b>HCA Members</b> to provide existing survey coverage metadata in Antarctica (south of 50°S, - as shp files if possible - , and point of contact) to IHO Sec. and to the GEBCO IBCSO Project Leader (Dr Boris Dorschel, AWI)
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We do object the reference made to “south of 50°S” in this Decision/Action. It must be amended to read “south of 60°S”, for the following reasons:

- The text makes reference to “survey metadata in Antarctica”. But establishing a limit of “south of 50°S”, such limit is including Chilean interior, territorial and EEZ waters.
- The northern limit of HCA area of competence for the coordination of the hydrographic surveys and nautical charting as reflected in its Statutes, is latitude 60°S, area known as INT Chart Region M which includes Antarctica. Therefore HCA must fix any Decision/Action covering an area outside the geographic limits so defined.

Response by the HCA Chair:

*The HCA thanks Chile for their valuable comments.*

*Based on the discussions and decisions made at HCA-14 in 2016 (Action HCA14/08) and HCA-15 in 2018 (Action HCA15/22), HCA Chair confirms that the northward extension of IBCSO to 50°S was a consequence of repeated requests from the science community to cover the Antarctic Circumpolar Current and the frontal systems in IBCSO. This was then agreed during the Polar Mapping Meeting prior to FFOFM in June 2016 in Monaco to extend IBCSO. This has also defined the northern limit for the Seabed 2030 RDACC Southern Ocean. At that time, the difference between the two limits (Charting Region M and IBCSO) were already noted but agreed to be tolerated for the above reasons. Any submission by Chile to be considered at HCA-17 is welcome.*

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HCA16/24	HCA took note of the report and agreed on the proposals made by the HPWG Chair (Doc. HCA16-07.3B refers).
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We are aware of the Report provided by the HPWG Chair to the conference, reminding Member States and Observers to encourage the use of the IHO Collection and Rendering of Hydrographic Data Form (to be used by Ships of Opportunity (SOO) in Antarctica.

This form was developed jointly between HCA, COMNAP and IAATO in order to provide General Information; Hydrographic Surveying Information; Navigational Aids and Ancillary

information and Data Format to be made available to the IHO, a form that has been in use for several years.

The procedure set in this IHO Form collides with the procedure set by the same IHO in its recent publication B-12 “*Guidance on Crowdsourced Bathymetry*”, where no reference is made at all to the IHO Form developed specially for the Antarctica.

This inconsistency is causing confusion to the mariner willing to provide information to Hydrographic Offices producing charts of the Antarctica. In the case of Chile, SHOA has been receiving queries from Captains on:

- Which procedure should be followed? IHO Form or B-12?
- Data should be provided to Hydrographic Offices?, to the IHO?, to the IHO DCDB?, to the Trusted Nodes? and
- If to Trusted Nodes, who and where do they are?

*Response by the HCA Chair:*

*The HCA thanks again Chile for their valuable comments which are duly acknowledged.*

*As indicated on many occasions, the IHO is building the future for data collection but still needs to address the issues related to the transition phase. As reported in this summary report, one of the issue recognized at HCA-16 is the urgent need to clarify the optimal data flow between the different stakeholders (captains, HOs, IHO DCDB, Trusted Nodes, Seabed 2030 RDACC). This item is on the agenda of the next meeting of the CSBWG (23-25 Oct 2019, Monaco) to which Chile is invited to participate. Once these data flows are clarified and documented, consistency, harmonization will be made between various procedures and guidelines (SOO, B-12, etc). Because those supposed ambiguities appear the source of concern, Chile is invited to present its views on this subject at HCA-17, and even before in other IHO meetings and events.*