

International Hydrographic Organization (IHO)



Arctic Regional Hydrographic Commission (ARHC)

13th Meeting



Nuuk, Greenland, 04-08 September 2023

Summary Report

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Introduction

The 13th meeting of the Arctic Regional Hydrographic Commission (ARHC12) took place the week of 04-08 September 2023 in Nuuk, Greenland. The week consisted of several events including an ARHC Icebreaker, and the traditional ARHC Open Forum. Twenty-three registered participants from eight different countries including both ARHC member states, associate members, and the IHO Secretary-General (remotely) attended the 13th ARHC Conference.

The week's events were configured as such:

ARHC - 13 Overview	SEPTEMBER 04 Evening Icebreaker Reception Guided tour at Greenlandic National Museum + Reception (hosted) Time: 17:00	SEPTEMBER 05 Open Forum Climate & Hydrography in the Arctic Hotel Hans Egede, Nuuk, Greenland & Illisimatusarfik (University), Sailing tour on Nuuk Fjord (hosted)	SEPTEMBER 06 ARHC13 Meeting Day 1 (closed) Hotel Hans Egede, Nuuk, Greenland.	SEPTEMBER 07 ARHC13 Meeting Day 2 (closed) Hotel Hans Egede, Nuuk, Greenland. Joint dinner (not hosted)	SEPTEMBER 08 Travel Day
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Due to heavy wind and canceled flights, and thus delayed arrival from several participants, the Icebreaker Reception at the Greenlandic National Museum was moved to Tuesday evening. This allowed everyone to participate.

Group Photo



ARHC 13 – Minutes

A1: Welcome, Opening Remarks, and Participant Introductions

The c/ARHC, Pia Dahl Højgaard confirmed that a quorum of the following member states was established: Canada (CA), Denmark (DK), Norway (NO), and the United States of America (US). Additionally, Associate members Finland (FI) Iceland (IC), Italy (IT), and the United Kingdom (UK) were present at the meeting. Due to sickness, the IHO Secretariat was not present, and the IHO Secretary General Dr. Mathias Jonas was therefore scheduled to present agenda item B1 and E1 virtually.

The c/ARHC opened the 13th meeting and welcomed all participants highlighting the need to collaborate and share experiences in the Arctic. Further, a special welcome was extended to the UK, as it was their first ARHC meeting as an official Associate Member.

On request of the US and to facilitate the taking of meeting minutes, ARHC approved the recording (audio) of the meeting. The file will be deleted after the approval of the minutes the meeting.

ARHC13-D01	A1	ARHC Full Members established a quorum and approved Agenda v.02.	n/a	n/a	n/a
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A2: Approval of the Agenda

- The ATCM Report was moved to Thursday morning to facilitate the participation of the IHO Secretariat (Dr. Jonas).
- A voluntary visit to the Ocean Research Project vessel *Marie Tharp* was scheduled for Wednesday, 17.00.

ARHC approved Agenda v.02.

A3: Review of Actions from ARHC12

c/ARHC reviewed the List of Actions of ARHC12, inviting ARHC to comment.

ARHC12, A03: MS were encouraged to review the Status of Actions (ARHC12-A4 Status of Actions from ARHC11) and return any comments/updates to ARHC Secretariat.

Action Closed, ARHC decided to add an adjusted action for this year.

ARHC12, A04: RHC MS to respond to NOAA e-mail from Christy Fandel (25 July 2022) requesting CATZOC data and other information in order to commence the OTWG’s 2023 Chart Adequacy Assessment exercise.

Action closed

ARHC12, A05: CA and US will initiate filling out the IGIF matrix and forward on to the AICCWG.

Action closed

ARHC12, A06: AICCWG to report on the readiness to produce and availability of S-101 data within the region.

Action closed, with reference on AICCWG report.

ARHC12, A07: MS encouraged to review the Arctic Grid Study report and investigate the offerings on the www.arcticgrids.com website which include more information on the grids themselves and the opportunity to create test datasets using the 3 recommended grids for the purposes and report any questions/comments to the Arctic Grid Study Project Team (AGSPT (CA))

Action closed.

ARHC12, A08: NO to establish contact with Arctic SDI

Action closed

ARHC12, A09: MS to provide comments on ASDI policy paper to NO

Action closed

ARHC12, A10: Arctic Grid Study Project Team to prepare a presentation to WENDWG

The presentation has not yet been done. Action stays open.

ARHC12, A11: MS to consider options to continue to fund the work of the AGSPT and to consider ongoing participation in the PT

Action closed

ARHC12, A12: NO to reach out to Norwegian Chair of the Arctic SDI

Action closed.

ARHC12, A13: MS asked to confirm or reconfirm their participation in ARMSDIWG, including a willingness to take the lead on specific tasks, and inform the c/ARMSDIWG

Action closed.

ARHC12, A14: Based on ARHC12 discussions, ARMSDIWG to substantiate work plan items and to assign roles to ARMSDIWG MS for specific tasks.

Action closed.

ARHC12, A15: MS to include update on GEBCO/Seabed 2030 activities in National Report

Action closed.

ARHC12, A16: MS encourage to respond to the Data Contribution Request for IBCAO 5.0

Actions closed.

ARHC12, A17: For communication purposes, MS to submit to the ARHC Secretariat projects that have been endorsed by the UN Ocean Decade.

Action is being kept as ongoing.

ARHC12, A18: MS invited to read the ARHC IHO Strategic Plan Gap Analysis document (ARHC12-D1A ARHC SP Gap Analysis).

Action closed.

ARHC12, A20: A letter of introduction to PAME will be drafted and circulated to ARHC for comment and endorsement

Action closed.

ARHC12, A22: ARHC members are invited to share experiences with respect to options and opportunities for the greening of hydrographic activities.

Action is being kept as ongoing.

Engaged discussion with reports from all MS. NO suggested to discuss 'Greening of Hydrographic Activities' at ARHC14. UK offered to share the UKHO year-report with focus on sustainability and the greening of hydrography.

ARHC13-A03	A3	ARHC to discuss the greening of hydrographic operations and the possible impact of hydrographic data to climate-related research at ARHC14	c/ARHC	ARHC14	n/a
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A4: Review from Actions from IRCC15

c/ARHC went through the IRCC15 Recommendations, and ARHC duly noted the IRCC Recommendations.

B1: IHO Secretariat's Report to ARHC

The IHO SG Dr. Mathias Jonas briefly reported on items affecting the ARHC. He highlighted the upcoming C7, the first Council meeting for the period of 2023-2026. Denmark moved into Council based on the ARHC mandate, and Pia Dahl Højgaard, the National Hydrographer of Denmark, has been elected as the new Council Chair for the upcoming three years.

He further went through a number of topics to be discussed at C7, informing the ARHC of submitted papers, the fact that Empowering Women in Hydrography may become a program, and mentioning the initial steps to be taken to start work on a new IHO strategic plan post-2026.

As c/HCA, Dr. Jonas reported on the positive feedback linked to the IHO Assembly decision to recognize the Southern Ocean and invited ARHC to consider interrelated topics relevant for both HCA and ARHC, such as a potential amendment of the IMO Polar Code, and S-100 governance in Polar Regions.

He invited AHRC to note the briefing, to continue engaging in HSSC and IRCC, to study the C7 agenda and related submissions, and to consider addressing IHO CL on CSB in national waters.

ARHC noted the report.

B2: National Report – Canada

The national report of Canada was presented by Chris Marshall (CHS).

CA informed ARHC, that Canada's new National Hydrographer, Ms. Manon Larocque, will take on her new role in September 2023. CA further highlighted the favourable funding situation for their hydrographic activities, resulting in currently between 25-30 people in the Arctic field season in 2023. This year, CHS was able to secure a dedicated vessel to conduct hydrographic surveys in the Arctic.

CA further provided updates on their ENC production in the Arctic and their current and future Community Hydrography projects.

Representatives of the Canadian Navy contributed to the report informing on their activities in the Canadian Arctic, and highlighting the delivery of new patrol vessels.

ARHC noted the report.

B3: National Report – Denmark

The national report of Denmark was presented by Elizabeth Hagemann (DGA).

DK highlighted current survey priorities in Greenlandic waters focusing on inland routes in South-West Greenland. Usually, the Hydrographic Service has around 60 days to survey during the summer while also being subject to search and rescue tasks. Further, DK presented their current ENC production in Greenland relying on a semi-automated method to produce land data, making the production more efficient.

Lastly, DK announced two financing news: 1) Financed by the European Union, DK will together with the other Baltic Sea Hydrographic Offices focus on S-100 harmonization across the region. 2) With funding from the Danish Finance Act 2023, DGA is tasked to do near-shore satellite charting in Greenland. DK will update ARHC on the progress of the project.

ARHC noted the report.

B4: National Report – Norway

The national report of Norway was presented by Birte Noer Borrevik (Norwegian Mapping Authority).

The Norwegian Mapping Authority recently celebrated 250 years of existence. Currently, NO works on a pilot project producing Marine Base Maps of Norwegian coastal zones. Further, NO shared an example of an S-100 test case: By combining S-102, S-104, and S-111, the vessel was able to choose a shorter route, saving 2 tons of LNG and around 5,5 tons of CO₂.

Lastly, NO announced that they have signed a data sharing agreement with Offshore Norge, providing the Norwegian Mapping Authority with valuable bathymetric data from the offshore industry.

ARHC noted the report.

B5: National Report – United States of America

The national report of the United States of America was presented by RDML Benjamin Evans (NOAA).

US informed on the 2023 survey activities in the Arctic, relying on two survey vessels in the Arctic and an Autonomous Survey Vehicle through a contractor.

Further, US reported on their engagement with indigenous communities in Alaska: While government authorities and hydrographic organizations often view charting as a public good, locals do not universally accept this, stressing concern for increased vessel traffic for instance.

NGA is transitioning from DNC to ENC, and creating a worldwide ENC grid, ultimately supporting the transition to S100. They work with partners on a global grid - that will drive the ENC and essentially the S100 grid.

Lastly, US updated ARHC on a number of services, such as the NGA World Port Index, the NGA GMTDS: Global Maritime Traffic Density Service, and the Custom Chart Builder 2.0.

ARHC noted the report.

B6: National Report – Finland

The national report of Finland was presented by Rainer Mustaniemi (Traficom).

FI reported on their S-100 implementation progress, coordinating with other authorities, such as the Finnish Meteorological Institute. FI expects to have a full operational S-100 production system (S-101/S-102) by the end of 2024. Additionally, FI mentioned the Baltic E-Nav project financed by the European Union and aimed to further harmonize S-100 implementation and production in the Baltic Sea region.

ARHC noted the report.

B7: National Report – Iceland

The national report of Iceland was presented by Árni Vésteinsson (ICG-HD).

IS presented a new coastal chart on the North-Western coast of Iceland. Further, they reported on conducted surveys in Hunafloi, NW Iceland replacing old surveys from around 1948.

IS started to deliver bathymetric data to EMODnet and intends to do so in the future again.

ARHC noted the report.

B8: National Report – Italy

The national report of Italy was presented by Maurizio Demarte (IHI).

IT reported from their 2023 High North Campaign around Svalbard. The collected data is provided to the Norwegian Hydrographic Office and Seabed 2030.

ARHC noted the report.

B9: National Report – United Kingdom

The national report of the United Kingdom was presented by Simon Hardern (UKHO).

UK appreciated attending the ARHC-13 meeting as an Associate Member. UK updated ARHC on their plans of sunsetting paper charts, and highlighted that they are engaged with their international partners on that matter.

ARHC noted the report.

C1: ARHC OTWG Report

The OTWG Report was presented remotely by LCDR Bart Buessler (NOAA).

US nominated LCDR Bart Buessler for the role of Chair of the OTWG.

ARHC accepted the nomination.

The OTWG presented the Arctic Hydrographic Risk Assessment 2023. The Assessment is a continuation of the study conducted in 2015 and 2018. By analysing depth, CATZOC data, and vessel traffic, the report is intended to highlight potential risk areas, and thus possibly concerns for navigation.

In 2023, the group used complete CATZOC data and GMTDS traffic data, where 50 hours across the year was the threshold used for the traffic data. LCDR Buessler stressed that CATZOC and simplified AIS data streamlined the assessment and supported a more detailed analysis. Also, it allowed the group to do the assessment more quickly.

The group compared the traffic of 2018 with 2023 traffic and saw the biggest change in low-risk areas.

However, there has also been an increase in medium-risk areas of concern. LCDR Buessler mentioned that this may also be due to the data input, as the assessment is based on complete CATZOC data.

The group summarized that the assessment showed that there is more traffic in the Arctic waters, but limited to small areas. This may mean that a focused effort can have a large impact. For instance, could single beam data or satellite-derived data be sufficient in areas of low concern and multi beam efforts may thus be concentrated on high-risk areas.

The group also came forward with a number of additional questions that may be of interest in the future (long-term outlook): What vessels are most at risk? Tankers vs. cruise - same or different risks? Currently, the traffic data doesn't capture seasonality and doesn't capture the ice dynamics. The assessment focused on risk, but not on consequences. E.g., high risks compared to local populations, etc.

DK congratulated the group and thanked them for their effort but highlighted that the Southern part of Greenland, where most people in Greenland live and where most surveying takes place, is missing. DK would like to see it included in the new edition.

CA stressed that also parts of the Canadian Arctic were cut off in the assessment and inquired whether it is possible to include all of Hudson Bay, Hudson Strait, and Lateral coast. Also, CA showed interest in getting a grid of the data and loading it into their own data.

The OTWG agreed to check whether a quick update for this edition is possible. Following, ARHC will evaluate whether the assessment is ready to be sent to Arctic Council PAME and EPPR.¹

ARHC13-A05	C1	MS to provide updated contact details of OTWG members to c/OTWG	All
ARHC13-A06	C1	CA to provide CATZOC data for areas that they would like to see included in the OTWG Arctic Risk Assessment	CA
ARHC13-A07	C1	Based on comments by MS wanting to expand the geographical scope of the Arctic Risk Assessment, c/OTWG verifies whether an update to the document is possible and will update c/ARHC as soon as possible on such possibility.	c/OTWG

¹ Protection of the Arctic Marine Environment Working Group and Emergency Prevention, Preparedness and Response Working Group.

ARHC13-A08	C1	If possible, MS request access to the results of the analysis of the Arctic Risk Assessment and c/OTWG to provide access.	All
ARHC13-A09	C1	c/ARHC will update MS on the potential update and expansion of the Arctic Risk Assessment and clarifies with MS, by correspondence, whether the report is approved to be shared with PAME and other relevant stakeholders.	c/ARHC
ARHC13-A10	C1	Upon approval by ARHC, c/ARHC to send the report to PAME and EPPR, Jonathan Justi (ARHC liaison to PAME) will assist by drafting a letter.	c/ARHC

C2: ARHC AICCWG Report

The AICCWG report was presented by Evert Flier (NO).

NO nominated Ms. Siri Reimers for the role of Chair of the AICCWG.

ARHC accepted the nomination.

AICCWG reported that all ENC coverage issues have been treated and solved accordingly. Further, the group focused on their role as S-100 Coordinator in the region. The WG started the process of updating the WENDWG IGIF matrix in preparation for next year’s WENDWG meeting. The group relies on the input of the individual countries to prepare the regional matrix. This will help the WG to analyze the S-100 progress in the Arctic region.

ARHC noted the report.

ARHC13-A14	C2	ARHC tasks AICCWG to gather MS answers to the WENDWG-IGIF Matrix, analyzing and providing general tendencies of S-100 in the Arctic region. To do so, AICCWG is tasked to draft a systematic solution and share it with ARHC for approval before WENDWG14 in 2024.	AICCWG	Oct 2023	n/a
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C3: Report of the IHO-EU Network

DK presented the recent developments in the IENWG, highlighting the four new directions of the WG: Maritime Policies, Promotion of S-100, Capacity Building, Data Collection.

ARHC13-D16	C3	ARHC noted the IENWG report and confirmed DK as ARHC representative to IENWG	n/a	n/a	n/a
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C4: ARHC ARMSDIWG

The ARMSDIWG report was presented by Sebastian Carisio (NGA).

The current c/ARMSDIWG, Sebastian Carisio, won't be available for another term as chair.

The WG reported of their 3 VTC meetings in the last year. The group presented their communication plan including the aim of engaging further with Arctic SDI. Since Arctic SDI paused all activities in the last year, the ARMSDIWG members engaged with Arctic SDI on a national level until they resume their regular activities.

Following the ARMSDIWG report, and in line with the IHO Strategic Plan, ARHC discussed the ambition level for the group, trying to clarify what data may be interested for other Arctic stakeholders and partners.

ARHC noted the report, the communication plan, and further noted the strategy for engagement with Arctic SDI. ARHC member states have further been encouraged to consider potential candidates for the role as Chair of ARMSDIWG.

ARHC-A16	C4	ARHC tasks ARMSDIWG to revise and utilizing the MSDI Aggregated Data Service Checklist for the ARHC in pursue of the IHO Strategic Plan Target 2.1.
ARHC-A17	C4	MS are encouraged to consider and report potential candidates for the role as Chair of ARMSDIWG. Report to outgoing c/ARMSDIWG and c/ARHC. If no Chair is found by the time of C7, c/ARHC to consider appropriate steps.

E1: ATCM Report w/focus on the topical session on the Polar Code

The Antarctic Treaty Consultative Meeting (ATCM) report was presented by IHO Secretary General Dr. Jonas (IHO).

The IHO Assistant Director Yves Guillam participated and represented the IHO at the 45th ATCM meeting. Of particular interest to the ARHC had been the topical session on the IMO Polar Code: With decreasing sea ice in both polar regions and new and surveyed areas potentially open for traffic. In their note to ATCM, the IHO referred to the S-100 navigation standard, opening for a potential inclusion/naming of the S-100 standard in a revised IMO Polar Code.

Since providing input to the IMO Polar Code is a very long and tricky process, Dr. Jonas suggested that ARHC may consider joining forces with PAME.

ARHC decided to talk about the IMO Polar Code at next year’s meeting.

Dr. Jonas further stressed that the ARHC Hydrographic Risk Assessment may also be of interest to the ATCM among others. Also, ARMSDIWG could be a connecting element.

ARHC confirmed to the IHO SG Dr. Jonas, that there are considerations of extending the Risk Assessment to other regions as well. This may include the Antarctic and could be discussed at the next HCA meeting.

ARHC noted and thanked Dr. Jonas and the IHO for the report

ARHC-A22	E1	ARHC to discuss the IMO Polar Code at ARHC14 with the purpose of identifying a potential for hydrography, such as S-100, input in a Polar Code update process.	All	ARHC14	n/a
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D2: WENDWG Report

Evert Flier (NO) is the WENDWG representative of ARHC. ARHC confirmed Evert Flier as representative.

The new c/WENDWG sent a CL with questionnaire to member states.

No report was presented, and the discussion was moved to agenda item D3.

D3: Status of S-100 Coordination in the Region

Following the AICCWG report, the ARHC reflected on the status of the S-100 Coordination in the region.

NO invited member states to reconsider their participation in the AICCWG making sure that the working group has the right personnel to coordinate S-100 regionally.

ARHC decided that AICCWG will take on the task of gathering answers of member states and report back to the c/WENDWG answering the questionnaire (ref. to agenda item D2) from a regional point of view.

ARHC-A18	D2	The ARHC WENDWG representative, in liaison with AICCWG, to reissue WENDWG CL 01/2023, collecting answers from MS, and compile answers respecting the deadline of 30 th Nov 2023.	c/AICCWG WENDWG Representative	Oct 2023	n/a
ARHC-A19	D2	c/AICCWG provides the compiled ARHC WENDWG Matrix, and the answered WENDWG CL01/2023 to the c/ARHC	c/AICCWG	Oct - Nov 2023	n/a
ARHC-A20	D2	c/ARHC to share the completed and answered ARHC WENDWG Matrix, and the WENDWG CL01/2023 questionnaire with MS for approval and the ARHC WENDWG representative to report the results to WENDWGXX	c/ARHC	Nov 2023	n/a

D1: ARHC IHO Strategic Plan Gap Analysis

The c/ARHC recapitulated the work behind the ARHC Strategic Plan Gap Analysis, presented at ARHC12 and based on the methods of South-West Pacific Hydrographic Commission. The project team that did the analysis is no longer active.

ARHC initially gave itself the task to do such analysis on a yearly basis. However, with reference to strategic decisions taken at the IHO Assembly 3, and due to the fact that the ARHC and member states are busy with a lot of other tasks of high priority, ARHC reconsidered the task and for now won't seek an update of the Gap analysis.

To clarify whether RHCs are intended to do a Gap Analysis, ARHC tasked the incoming c/ARHC to contact the c/IRCC.

ARHC-A30	D1	c/ARHC to clarify with c/IRCC whether there is a request from IRCC to conduct RHC-centered Strategic Plan Gap Analysis.	c/ARHC	n/a	n/a
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D4: Items for Council 7 discussion

Denmark moved into the IHO Council on the ARHC mandate.
The c/ARHC briefly presented the current agenda for the upcoming C7.

D5: Arctic Council (PAME) – ARHC

The report on ARHC-PAME cooperation was presented by Jonathan Justi (NOAA).

Jonathan Justi explained that PAME has not met in person since 2021 and he further stressed that the PAME-ARHC MoU, signed in 2020, expires in 2025. PAME is still operating under their work plan 2021-2023, and the cooperation with ARHC is part of Goal 1 of the PAME work plan.

Jonathan Justi presented a number of possibilities for working together with PAME in the future. The suggestions include collaborative ideas, such as the sharing Risk Assessment of 2023, working with MPAs, an update of the ARHC Cautionary Notice, contributing hydrographic data to the PAME/AC Voyage Planning, and S-100.

Dr. Michael Brady (US) suggested that the work of ARMSDIWG may be a good point of departure to bridge Arctic SDI and PAME engagement.

ARHC discussed how the further approach towards PAME and the Arctic Council in general could be structured and formalized. ARHC decided to set up a project team that should analyze, reflect, and ultimately present at ARHC 14 *how the ARHC engagement with PAME is going to go about in the future*.

ARHC thanked Jonathan Justi for the report, the ideas, and the commitment.

ARHC-D12	D5	ARHC to set up a PAME-Engagement PT, evaluating and assessing further cooperation with PAME and the Arctic Council.	n/a	n/a	n/a
ARHC-A23	D5	ARHC tasks Jonathan Justi (NOAA, USA) to chair the PAME-Engagement PT and invites MS to provide contact details of PT members to Jonathan Justi by Oct 2023, ahead of C7.	All	Oct 2023	n/a
ARHC-A24	D5	PAME-Engagement PT to draft ToR and establish a work plan specifying how ARHC may cooperate with PAME and the Arctic Council in the future	PAME-Engagement PT	ARHC14	n/a

C5: ARHC GEBCO, Seabed2030 and CSBWG Coordinator

The GEBCO, Seabed2030 and CSBWG Coordinator presentation was presented by Evert Flier (NO).

The GEBCO/Seabed 2030 Coordinator, Evert Flier, reported on recent activities of GEBCO and the GEBCO Guiding Committee highlighting the 120th anniversary of GEBCO. Evert Flier recapitulated that GEBCO and Seabed 2023 do not ask for high-resolution data encouraging ARHC member states and stakeholders to contribute to GEBCO and Seabed 2030.

With reference to the ARHC report to IRCC15 in 2023, ARHC member states wished to include annual progress of provided data from the ARHC region to IHO DCDB in the upcoming ARHC reports to IRCC.

ARHC confirmed Evert Flier as ARHC representative to GEBCO / Seabed 2030.

ARHC-D15	C5	Following the example of the ARHC report to IRCC15, ARHC decides to include annual progress of provided data from the ARHC region to the IHO DCDB in upcoming ARHC reports to IRCC. ARHC Secretariat to liaise with CSB/Seabed 2030 Coordinator	CSB/Seabed2030 Coordinator	n/a	n/a
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As CSBWG Coordinator of the ARHC, Evert Flier reported on recent CSBWG activities and the updated work plan of the CSBWG.

Further, Evert Flier updated ARHC on the upcoming Coastal State Approval Mechanism introduced by the IHO DCDB to respect CSB caveats of member states.

ARHC member states discussed different caveats and potential reasons behind them. Some member states highlighted that in their capacity as hydrographic offices, they are restricted on the CSB matter due to national policies outside of their influence.

ARHC confirmed Evert as CSBWG coordinator of the ARHC.

D6: ARHC Standing Cautionary Notice of June 2017

With reference to the ATCM report and the PAME report, ARHC discussed whether the Standing Cautionary Notice of June 2017 should be revised and distributed to a wider audience.

NO echoed the PAME report from Jonathan Justi inquiring whether the Cautionary Notice may be redrafted as a joint PAME/ARHC document.

Member states confirmed that the notice as it is written is still valid and useful. An immediate update was therefore not seen as priority.

c/ARHC suggested that this could be a task for the newly established PAME Engagement PT. They may inquire whether PAME is interested. The PT should then make recommendations to ARHC-14.

ARHC-A29	D6	The PAME-Engagement PT to evaluate whether the Standing Cautionary Notice could be a joint PAME-ARHC document and to	PAME-Engagement PT	ARHC14	n/a
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		report to ARHC14 for further consideration.			
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D7: Observations, outcomes, and feedback from the ARHC Open Forum

The c/ARHC provided a brief recap of the ARHC13 Open Forum.

USA stressed that the tradition of arranging an ARHC Open Forum prior to the closed-ARHC meetings is always of great benefit, as it helps to highlight why hydrography matters.

ARHC thanked all participants of the ARHC 13 Open Forum.

E4: Danish Finance Act 2023: Satellite Project in Greenland

DK presented a new Satellite Project in Greenland financed by the Danish Finance Act 2023.

Funds of 4.4 million DKK (around 640 000\$) have been allocated to the Danish Geodata Agency to map a portion of the coastline and near-coast areas around Greenland. By creating an overview of hazard areas/no-go areas, and engaging with external partners, DK aims to increase remote-sensing capabilities.

ARHC member states mentioned similar remote-sensing projects in other countries of the region, and agreed on seeking further collaboration in the field of satellite mapping.

FI kindly reminded participants of the HSWG SDB PT that also serves as important exchange platform.

ARHC13-D17	E4	ARHC noted the DGA report of DGA Satellite Project in Greenland.	n/a	n/a	n/a
ARHC-A32	E4	ARHC MS to provide contact details of experts working with Remote Sensing (SDB and Coastal Imagery) to c/OTWG with the aim to create a platform for written exchange of experiences.	n/a	Nov 2024	n/a

F1: Confirmation of Chair and Vice-Chair

ARHC confirmed Norway as c/ARHC, and USA as vc/ARHC, deviating from the alphabetical order with reference to ARHC CL01/22, ARHC Statutes paragraph 13 and 19. The National Hydrographer of Norway, Ms. Birte Noer Borrevik, will take on the role as c/ARHC, while RDML Ben Evans (USA) will function as vc/ARHC.

ARHC13-D18	F3	Norway confirmed as c/ARHC and USA as vc/ARHC, deviating from the alphabetical order with reference to ARHC CL01/22, and ARHC Statutes paragraph 13 & 19.	n/a	n/a	n/a
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Further, with reference to paragraph 13 of the ARHC Statutes, c/ARHC provides the future meeting default rotation for the next five years in the minutes of the meeting.

	ARHC	Chair	Vice Chair	Venue
2024	ARHC-14	Norway	USA	Tromsø, NO
2025	ARHC-15	USA	Canada	Tbd.
2026	ARHC-16	Canada	Denmark	Tbd.
2027	ARHC-17	Denmark	Norway	Tbd.
2028	ARHC-18	Norway	Tbd.	Tbd.

F2: Next Meeting ARHC14

The incoming c/ARHC, Birte Noer Borrevik (NO), informed ARHC that ARHC14 will take place in week 36/2024, from 3-5 September 2024, in the city of Tromsø, Norway.

F3: Summary of Actions and Decisions

The c/ARHC and the ARHC Secretariat presented the list of Actions and Decisions of ARHC13. The full list is attached to the summary report.

F4: Closing Remarks

The c/ARHC thanked all participants and delegates for their input, cooperative spirit, and congratulated ARHC for a very successful meeting.

The present delegates thanked and applauded Mr. Lars Hansen (DK) for his year-long contribution to ARHC.

F5: Closure of Meeting

The c/ARHC officially closed the 13th Arctic Regional Hydrographic Commission meeting.

ARHC Actions, Decisions, and Recommendations

From ARHC13 (05-07 September 2023)

Ref # A=Action D=Decision	Agenda Item	Actions	For	Deadline	Status
ARHC13-D01	A1	ARHC Full Member established a quorum and approved Agenda v.02.	n/a	n/a	n/a
ARHC13-A01	A3	MS are encouraged to review the List of Actions of ARHC13 and return any comments/updates to ARHC Secretariat.	All	2023-11-01	Ongoing
ARHC13-D02	B1	ARHC noted the briefing from the IHO Secretariat and took note of the recommendations.	All	n/a	n/a
ARHC13-A02	A3	MS are encouraged to participate at the 5 th Arctic-Antarctic and North Pacific Mapping Meeting, Nov 26-27, 2023, in Bremen (Germany)	All	Nov 2023	n/a
ARHC12-A10	C2	Arctic Grid Study Project Team to prepare a presentation to WENDWG	AGSPT	n/a	Ongoing

ARHC12-A17	D1	For communication purposes, MS to submit to the ARHC Secretariat projects that have been endorsed by the UN Ocean Decade.	All	As soon as practically possible.	Ongoing
ARHC12-A22	E4	ARHC members are invited to share experiences with respect to options and opportunities for the greening of hydrographic activities.	All	n/a	Ongoing
ARHC13-A03	A3	ARHC to discuss the greening of hydrographic operations and the possible impact of hydrographic data to climate-related research at ARHC14	c/ARHC	ARHC14	n/a
ARHC13-A04	A3	UK to provide document "Navigating to a Greener Future" to c/ARHC to be posted to ARHC13 site	UK	n/a	DONE
ARHC13-D03	B2-B10	ARHC noted the presented National Reports	n/a	n/a	n/a
ARHC13-D04	C1	ARHC noted the Arctic Risk Assessment Report, thanked OTWG for the work, and requested the report to be updated expanding the geographical scope including Southern Greenland.	n/a	n/a	n/a
ARHC13-D05	C1	ARHC accepted the nomination of LCDR Bart Buesseler (NOAA, US) as new Chair of the OTWG	n/a /	n/a	n/a
ARHC13-A05	C1	MS to provide updated contact details of OTWG members to c/OTWG	All	As soon as possible	n/a

ARHC13-A06	C1	CA to provide CATZOC data for areas that they would like to see included in the OTWG Arctic Risk Assessment	CA	As soon as possible	n/a
ARHC13-A07	C1	Based on comments by MS wanting to expand the geographical scope of the Arctic Risk Assessment, c/OTWG verifies whether an update to the document is possible and will update c/ARHC as soon as possible on such possibility.	c/OTWG	As soon as possible	n/a
ARHC13-A08	C1	If possible, MS request access to the results of the analysis of the Arctic Risk Assessment and c/OTWG to provide access.	All	n/a	n/a
ARHC13-D06	C1	MS allow the sharing of the underlying data of the Arctic Risk Assessment with ARHC.	n/a	n/a	n/a
ARHC13-A09	C1	c/ARHC will update MS on the potential update and expansion of the Arctic Risk Assessment and clarifies with MS, by correspondence, whether the report is approved to be shared with PAME and other relevant stakeholders.	c/ARHC	As soon as possible	n/a
ARHC13-A10	C1	Upon approval by ARHC, c/ARHC to send the report to PAME and EPPR, Jonathan Justi (ARHC liaison to PAME) will assist by drafting a letter.	c/ARHC	n/a	n/a

ARHC13-D07	C2	ARHC approved Siri Reimers (NHO, Norway) as new Chair of the AICCWG	n/a	n/a	n/a
ARHC13-D08	C2	ARHC noted the AICCWG report.	n/a	n/a	n/a
ARHC13-A11	C2	AICCWG to update the official list of Working Group representatives in an appropriate manner.	c/AICCWG	As soon as possible	n/a
ARHC13-A12	C2	MS to consider their membership in the AICCWG, and potentially provide updated contact details to the c/AICCWG.	All	As soon as possible	n/a
ARHC13-A13	C2	c/AICCWG to contact DK to clarify missing ENC coverage on the provided graphic in the AICCWG report.	c/AICCWG	n/a	n/a
ARHC13-A14	C2	ARHC tasks AICCWG to gather MS answers to the WENDWG-IGIF Matrix, analyzing and providing general tendencies of S-100 in the Arctic region. To do so, AICCWG is tasked to draft a systematic solution and share it with ARHC for approval ahead of WENDWG14 in 2024.	AICCWG	Oct 2023	n/a
ARHC13-A15	C2	AICCWG to provide guidance to the Arctic Grid Study Project Team on their presentation to WENDWG related Action ARHC12-A10.	AICCWG	n/a	n/a

ARHC13-D09	C4	ARHC noted the ARMSDIWG Report, Communication Plan 2023-2026, the Strategy of ARMSDIWG's Engagement with Arctic SDI in Annex B, and thanked Sebastian Carisio (NGA, USA) for his work as Chair of the ARMSDIWG	n/a	n/a	n/a
ARHC-A16	C4	ARHC tasks ARMSDIWG to revise and utilizing the MSDI Aggregated Data Service Checklist for the ARHC in pursue of the IHO Strategic Plan Target 2.1.	ARMSDIWG	n/a	n/a
ARHC-A17	C4	MS are encouraged to consider and report potential candidates for the role as Chair of ARMSDIWG. Report to outgoing c/ARMSDIWG and c/ARHC. If no Chair is found by the time of C7, c/ARHC to consider appropriate steps.	All c/ARHC	13 th October 2023	n/a
ARHC-D10	D2	ARHC confirmed Evert Flier (Norway) as ARHC representative to WENDWG	n/a	n/a	n/a
ARHC-A18	D2	The ARHC WENDWG representative, in liaison with AICCWG, to reissue WENDWG CL 01/2023, collecting answers from MS, and compile answers respecting the deadline of 30 th Nov 2023.	c/AICCWG WENDWG Representative	Oct 2023	n/a
ARHC-A19	D2	c/AICCWG provides the compiled ARHC WENDWG Matrix, and the answered WENDWG CL01/2023 to the c/ARHC	c/AICCWG	Oct - Nov 2023	n/a

ARHC-A20	D2	c/ARHC to share the completed and answered ARHC WENDWG Matrix, and the WENDWG CL01/2023 questionnaire with MS for approval and the ARHC WENDWG representative to report the results to WENDWGXX	c/ARHC	Nov 2023	n/a
ARHC-D11	E1	ARHC noted the ATCM report, and its recommendations.	n/a	n/a	n/a
ARHC-A21	E1	c/OTWG to share the Arctic Risk Assessment with c/HCA for consideration	c/OTWG	n/a	n/a
ARHC-A22	E1	ARHC to discuss the IMO Polar Code at ARHC14 with the purpose of identifying a potential for hydrographic, such as S-100, input in a Polar Code update process.	All	ARHC14	n/a
ARHC-D12	D5	ARHC to set up a PAME-Engagement PT, evaluating and assessing further cooperation with PAME and the Arctic Council.	n/a	n/a	n/a
ARHC-A23	D5	ARHC tasks Jonathan Justi (NOAA, USA) to chair the PAME-Engagement PT and invites MS to provide contact details of PT members to Jonathan Justi by Oct 2023, ahead of C7.	All	Oct 2023	n/a
ARHC-A24	D5	PAME-Engagement PT to draft ToR and establish a work plan specifying how ARHC may cooperate with PAME and the Arctic Council in the future	PAME-Engagement PT	ARHC14	n/a

ARHC-A25	D5	PAME-Engagement PT to prepare recommendations to c/ARHC prior to potential PAME meeting in 2024	c/ PAME-Engagement PT	n/a	n/a
ARHC-A26	D5	c/ARHC to consider ARHC participation at any upcoming potential PAME meeting notified by c/PAME-Engagement PT.	c/ARHC	n/a	n/a
ARHC-A27	D5	PAME-Engagement PT to report to ARHC14 on their work plan, recommendations, and future collaboration with PAME and the Arctic Council	c/ PAME-Engagement PT	ARHC14	n/a
ARHC-A28	D5	PAME-Engagement PT to liaise with incoming c/ARMSDIWG	c/ PAME-Engagement PT	n/a	n/a
ARHC-A29	D6	The PAME-Engagement PT to evaluate whether the Standing Cautionary Notice could be a joint PAME-ARHC document and to report to ARHC14 for further consideration.	PAME-Engagement PT	ARHC14	n/a
ARHC-D13	D1	ARHC terminates the PT Strategic Plan Gap Analysis	n/a	n/a	n/a
ARHC-A30	D1	c/ARHC to clarify with c/IRCC whether there is a request from IRCC to conduct RHC-centered Strategic Plan Gap Analysis.	c/ARHC	n/a	n/a
ARHC-D14	C5	ARHC noted the GEBCO/Seabed2030/CSB report and confirmed Evert Flier (NO) as respective ARHC CSB/Seabed 2030 coordinator.	n/a	n/a	n/a

ARHC-D15	C5	Following the example of the ARHC report to IRCC15, ARHC decides to include annual progress of provided data from the ARHC region to the IHO DCDB in upcoming ARHC reports to IRCC. ARHC Secretariat to liaise with CSB/Seabed 2030 Coordinator	CSB/Seabed2030 Coordinator	n/a	n/a
ARHC-A31	C5	With reference to IRCC recommendation 14/2023, ARHC encourages MS and other stakeholders to contribute to IHO DCDB	n/a	n/a	Ongoing
ARHC13-D16	C3	ARHC noted the IENWG report and confirmed DK as ARHC representative to IENWG	n/a	n/a	n/a
ARHC13-D17	E4	ARHC noted the DGA report of DGA Satellite Project in Greenland.	n/a	n/a	n/a
ARHC-A32	E4	ARHC MS to provide contact details of experts working with Remote Sensing (SDB and Coastal Imagery) to c/OTWG with the aim to create a platform for written exchange of experiences.	n/a	Nov 2024	n/a
ARHC13-D18	F3	Norway confirmed as c/ARHC and USA as vc/ARHC, deviating from the alphabetical order with reference to ARHC CL01/22, and ARHC Statutes paragraph 13 & 19.	n/a	n/a	n/a

IHO ARHC13 Agenda

ARHC - 13 Overview	SEPTEMBER 04 Evening Icebreaker Reception Guided tour at Greenlandic National Museum + Reception (hosted) Time: 17:00	SEPTEMBER 05 Open Forum Climate & Hydrography in the Arctic Hotel Hans Egede, Nuuk, Greenland & Illisimatusarfik (University), Sailing tour on Nuuk Fjord (hosted)	SEPTEMBER 06 ARHC13 Meeting Day 1 (closed) Hotel Hans Egede, Nuuk, Greenland.	SEPTEMBER 07 ARHC13 Meeting Day 2 (closed) Hotel Hans Egede, Nuuk, Greenland.	SEPTEMBER 08 Travel Day
Notes: <ul style="list-style-type: none"> - Nuuk follows the WGST (GMT-2). This means Nuuk is 2 hours ahead of Washington DC, 4 hours behind Copenhagen, 5 hours behind Helsinki. - Dresscode: Icebreaker: Smart Casual; ARHC13: Business Casual (no tie) - Please be aware that it can already get quite cold in Nuuk, including rain and/or snow with temperatures between 02° - 07°. Winter outfits recommended. 					
Evening Icebreaker + Reception					
Guided tour at the Greenlandic National Museum + Reception (hosted) at 17:00h					
Open Forum (attached agenda)					
Open Forum "Climate & Hydrography" at Hotel Hans Egede					
Visit Illisimatusarfik (Greenland University)					
Visit Danish Defence, Joint Arctic Command					
Sailing Tour on Nuuk Fjord (limited space)					

ARHC13 DAY 1				
Agenda Item	Day/Time	Topic	Discussion Lead	Notes
A. Opening and Administration				
A1	Day 1 09:00	Welcome, Opening Remarks, and Participant Introductions <i>ARHC13-A1 List of Participants</i>	Denmark Dr. Mathias Jonas ; All	Establishment of a quorum.
A2	Day 1 09:45	Approval of the Agenda <i>ARHC13-A2 Agenda</i>	Denmark	
A3	Day 1 09:50	Review of Actions from ARHC12	Denmark All	
A4	Day 1 10:20	Review of Actions from IRCC15	Denmark All	
B. IHO and National Reports				
B1	Day 1 10:35	IHO Secretariat's Report to ARHC <i>ARHC13-B1 IHO Report</i> <i>ARHC13-B1A IHO Report -Presentation</i>	Dr. Mathias Jonas	
10h50 Coffee break + ARHC Photo				
B2	Day 1 11h05	National Report -Canada <i>ARHC13-B2 Canada National Report</i> <i>ARHC13-B2A Canada National Report - Presentation</i>	Canada	
B3	Day 1 11h20	National Report -Denmark <i>ARHC13-B3 Denmark National Report</i> <i>ARHC13-B3A Denmark Presentation</i>	Denmark	

B4	Day 1 11h35	National Report -Norway <i>ARHC13-B4 Norway National Report</i>	Norway	
B6	Day 1 11h50	National Report –United States of America <i>ARHC13-B6 US National Report</i> <i>ARHC13-B6A US National Report</i>	US	
B7	Day 1 12h05	National Report -Finland <i>ARHC13-B7 Finland National Report</i> <i>ARHC13-B7A Finland Presentation</i>	Finland	
B8	Day 1 12h15	National Report -Iceland <i>ARHC13-B8 Iceland National Report</i> <i>ARHC13-B8A Iceland Presentation</i>	Iceland	
12h30 Lunch break (hosted)				
B9	Day 1 13:30	National Report -Italy <i>ARHC13-B9 Italy National Report</i> <i>ARHC13-B9A Italy Presentation</i>	Italy	
B10	Day 1 13h45	National Report -United Kingdom <i>ARHC13-B10 UK National Report</i> <i>ARHC13-B10A UK Presentation</i>	United Kingdom	
C. Reports of the ARHC Working Groups and other IHO working groups of relevance				
C1	Day 1 14h00	ARHC OTWG Report <i>ARHC13-C1 OTWG Report</i>	c/OTWG (US)	Presentation of new CAA
C2	Day 1 14h20	AICCWG Report <i>ARHC13-C2 AICCWG –Report</i>	c/AICCWG (Norway)	AICCWG, S-100 Coordination

C3	Day 1 14h45	Report of the IHO-EU Network <i>ARHC13-C3 IHO-EU Network –Report</i>	Denmark	
15h00 Coffee break				
C4	Day 1 15h15	ARMSDIWG Report <i>ARHC13-C3A ARMSDIWG -Report</i>	c/ARMSDIWG (US)	
E. Other Items of Interest (part 1)				
E1	15h35	ATCM Report w/ focus on the topical session on the Polar Code <i>ARHC13-E1-ATCM45_IHO_Report</i>	IHO Secretariat All	Report from recent ATCM meeting in Helsinki. Potential open exchange on the Polar Code and the introduction of S-100? Do Hydrographic Offices have developed an opinion on that matter?
E2	16h00	?		
E3	16h15	?		
16h30 End of Day 1				
ARHC12 DAY 2				
D. Issues of Strategic Relevance				
D2	Day 2 09h00	WEND WG Report <u>WENDWG CL 02/2022</u> <i>ARHC13-D2-ARHC_Matrix_WEND</i>	ARHC rep. to WENDWG	<u>Annual update</u> of WEND-100 IGIF Matrix S-100– WEND100-IGIF Matrix

D3	09h20	Status of S-100 Coordination in the Region How does ARHC wish to coordinate in the future? AICCWG has been tasked with the S-100 Coordination role at ARHC12.	Open discussion, introduced by c/ARHC, and ARHC representative to WEND-WG.	Member States are invited and encouraged to provide input regarding the status of S-100 Coordination in the region.
D1	Day 2 09h40	ARHC IHO Strategic Plan Gap Analysis – <u>Annual Review</u> ARHC12-D1A ARHC SP Gap Analysis	ARHC SP Project Team	<u>Quoting ARHC report to A3:</u> Observations by the project team were addressed at ARHC12, concluding with a list of possible actions. <u>It is the intent of ARHC to carry out a SP gap analysis on an annual basis.</u> Review?
10h00 Coffee break				
D4	10h25	Items for Council 7 for discussion <i>Items follow in due time</i>	Open discussion, introduced by Denmark / c/ARHC	ARHC Members invited to suggest other items for discussion. Does ARHC wish to coordinate a position?
D5	11h00	Arctic Council (PAME) – ARHC - Update of Joint Statement on Hydrography in the Arctic 2023 -Report on past or planned activities. -ARHC report to PAME	US (liaison)	Status on ARHC-PAME coordination. Policy Paper, Danish Chair of PAME, ARHC report to PAME.
C5	Day 2 11h20	ARHC GEBCO and Seabed 2030 Coordinator Report <i>ARHC13-C5 ARHC GEBCO-Seabed 2030 - Report</i>	c/GGC (Norway)	

D6	Day 2 11h40	ARHC Standing Cautionary Notice of June 2017 <i>ARHC13-D6-Standing Notice 2017</i>	All	The current Standing Notice distributed by ARHC is already almost 6,5 years old. Would an update/revision/republication be desired?
12h30 Lunch Break				
D7	Day 2 13h30	Observations, outcomes, and feedback from the ARHC Open Forum: <i>Climate & Hydrography</i>	All	This agenda item intends to lead to a broader discussion on how hydrography can play its part in global efforts addressing climate change? <u>IRCC 15/Recommendation 4:</u> <i>RHCs and Subordinate Bodies to consider to open the debate on future engagement in climate chance related activities in reference to strategic goal 3.</i>
E. Other Items of Interest (part 2)				
E4	Day 2 14h00	Danish Finance Act 2023: Satellite Project in Greenland	Denmark	DGA will present a remote-sensing project added to the 2023 Finance Act of the Danish Government.
E5	Day 2 14h15	??		
E6	Day 2 14h30	??		
E7	Day 2 14h50	??		
14h50 Coffee break				

F. Administration and Closure				
F1	Day 2 15h05	Confirmation of Chair and Vice-Chair	All	
F2	Day2 15h15	Next Meeting ARHC13	Incoming c/ARHC	Incoming c/ARHC is invited to briefly present the planned location and date for ARHC14.
F3	Day 2 15h20	Summary of Actions -In the next 60 days ARHC will...	Denmark Norway	
F4	Day 2 15h35	Closing Remarks and Observations	Denmark Dr. Mathias Jonas	
F5	15h45	Closure of Meeting	Denmark	

13th Meeting of the ARHC
Face-to-face, 05-Sep-2023 07-Sep-2023

Category	Country	Organization / Company	Name	Status	E-mail	Date
IHO Member State	Canada	Royal Canadian Navy	Kray ROBICHAUD	Member of delegation	Kray.Robichaud@Forces.gc.ca	2023-06-30
IHO Member State	Canada	Royal Canadian Navy	Andrew MUIR	Member of delegation	andrew.muir@forces.gc.ca	2023-07-30
3 IHO Member State	Canada	CANADIAN HYDROGRAPHIC SERVICE	Chris MARSHALL	Head of delegation	chris.marshall@dfo-mpo.gc.ca	2023-07-1
IHO Member State	Canada	CANADIAN HYDROGRAPHIC SERVICE	Sonja BHATIA	Member of delegation	sonja.bhatia@dfo-mpo.gc.ca	2023-07-06
5 IHO Member State	Denmark	DANISH GEODATA AGENCY - GEODATASTYREL SEN (GST)	Lars HANSEN	Member of delegation	larsh@gst.dk	2023-06-27
IHO Member State	Denmark	DANISH GEODATA AGENCY - GEODATASTYREL SEN (GST)	Pia DAHL HOJGAARD	Head of delegation	pdh@gst.dk	2023-06-27
7 IHO Member State	Denmark	DANISH GEODATA AGENCY - GEODATASTYREL SEN (GST)	Elizabeth HAGEMANN	Member of delegation	ehage@gst.dk	2023-06-27
IHO Member State	Denmark	DANISH GEODATA AGENCY - GEODATASTYREL SEN (GST)	Hendrik STANG	Member of delegation	hejus@gst.dk	2023-06-27
9 IHO Member State	Finland	FINNISH TRANSPORT AND COMMUNICATIONS AGENCY	Rainer MUSTANIEMI	Head of delegation	rainer.mustaniemi@traficom.fi	2023-06-29
IHO Member State	Finland	FINNISH TRANSPORT AND COMMUNICATIONS AGENCY	Seppo MAKINEN	Member of delegation	seppo.makinen@traficom.fi	2023-07-06
11 IHO Member State	Iceland	ICELANDIC COAST GUARD HYDROGRAPHIC DEPARTMENT (ICG-HD)	Georg LARUSSON	Head of delegation	georg.larusson@lhg.is	2023-08-11
IHO Member State	Iceland	ICELANDIC COAST GUARD HYDROGRAPHIC DEPARTMENT (ICG-HD)	Árni VÉSTEINSSON	Member of delegation	arni.vesteinsson@lhg.is	2023-08-1
13 IHO Member State	Italy	ISTITUTO IDROGRAFICO DELLA MARINA (Italian Hydrographic Institute)	Maurizio DEMARTE	Member of delegation	mdemarte@gmail.com	2023-07-30
IHO Member State	Norway	Norwegian Mapping Authority	Birte Noer BORREVIK	Head of delegation	borbir@kartverket.no	2023-08-23
15 IHO Member State	Norway	Norwegian Mapping Authority	Evert FLIER	Member of delegation	evert.flier@kartverket.no	2023-08-23
IHO Member State	United Kingdom of Great Britain and Northern Ireland	UNITED KINGDOM HYDROGRAPHIC OFFICE	Simon HARDERN	Head of delegation	simon.hardern@ukho.gov.uk	2023-06-27
17 IHO Member State	United States of America	National Oceanographic and Atmospheric Administration (NOAA)	Bart BUESSELER	Member of delegation	bart.o.buesseler@noaa.gov	2023-07-06
IHO Member State	United States of America	National Oceanographic and Atmospheric Administration (NOAA)	Jonathan JUSTI	Member of delegation	Jonathan.Justi@Noaa.gov	2023-07-06
19 IHO Member State	United States of America	Office of Coast Survey / National Ocean Service (OCS/NOS)	Benjamin EVANS	Member of delegation	benjamin.k.evans@noaa.gov	2023-07-06
IHO Member State	United States of America	NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)	Sebastian CARISIO	Chair of Sub-Committee WG / PT	Sebastian.P.Carisio@nga.mil	2023-07-05

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21	IHO Member State	United States of America	NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)	Michael BRADY	Member of delegation	MICHAEL.B.BRADY@NGA.MIL	2023-06-29
	IHO Member State	United States of America	NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)	John LOWELL	Member	john.e.lowell@nga.mil	2023-06-29
23	IHO Secretariat		International Hydrographic Organization	Mathias Jonas	Observer	mathias.jonas@iho.int	2023-06-30