



Arctic Regional Hydrographic Commission (ARHC)

Final minutes of the 8th Arctic Regional Hydrographic Commission Conference 11-13 September 2018, Longyearbyen, Svalbard

A. Opening Formalities

A.1 Opening of Conference

The ARHC Chair, Ms Birte Noer Borrevik opened the conference and confirmed that a quorum of the following member states was present:
Canada (CA), Denmark (DK), Norway (NO) and United States of America (US).

Associate members Finland (FI) Iceland (IC) and Italy (IT) were also present at the meeting.

The Russian Federation (RU) did not attend the meeting and had notified the chair of their absence.

The IHO secretariat was also present at the meeting.

Docs:

- ARHC8-A1 Participants.
- ARHC8 List of Documents.

A2. Welcome form the host country

The ARHC Chair and host provided some opening remarks, welcomed all the delegations. The programme for the conference were presented along with some administrative and logistical information.

Docs:

- ARHC8 A2 ARHC8 Program.

A.3 Adoption of Agenda

The agenda and timetable were approved as presented.

Docs:

- ARHC8 A3 Agenda.



A.4 Minutes and actions from ARHC7

No comments were received concerning the final minutes of the ARHC 7 conference.

The status of the list of actions from ARHC -7 and Special ARHC 3 were reviewed:

ARHC3 Special Action 5: RU to provide status on CATZOC for the Russian region to chair of OTWG – *It was noted that this has been achieved through cooperation with PRIMAR. Action discontinued*

Action ARHC7-01: NO to present an Automated Identification System (AIS) tool for the ARHC MS- *It was noted that this would be demonstrated later in the conference. Action discontinued*

Action ARHC7-02: Chair ARHC to remind Russia on the action item Special ARHC3-05 about CATZOC – *Completed. Action discontinued.*

Action ARHC7-03: Chair ARHC to include Ocean Noise in the ARHC8 agenda - *Completed. Action discontinued.*

Action ARHC7-04: US to provide a status paper on Ocean Noise - *Completed. Action discontinued.*

Action ARHC7-05: ARHC MS to include in their National Reports any experiences on the exchange of personnel between HO - *Completed. Action discontinued*

Action ARHC7-06: NO to send relevant information about the Norwegian S-102 project to ARHC MS - *Completed. Action discontinued.*

Action ARHC7-07: All ARHC MS with members of the IHO HSPT to consider MS view on alternative standards to the ones needed for safety of navigation - *Completed. Action discontinued.*

Action ARHC7-08: Chair ARHC to contact the Russian delegation about the IHO Council meeting regarding representation of Arctic navigational issues - *Completed. Action discontinued.*

Action ARHC7-09: OTWG to re-run the Chart Adequacy Assessment analysis. – *It was noted that this would be reported later in the conference – Action discontinued.*

Action ARHC7-10: ARHC MS to provide relevant updates to OTWG for the Chart Adequacy Assessment analysis - *Completed. Action discontinued.*

Action ARHC7-11: ARHC to coordinate the Chart Adequacy Assessment analysis presentation to PAME – *It was noted that this would be done following completion of the assessment analysis after the meeting. Action discontinued.*

Action ARHC7-12: OTWG to present a status report on Autonomous Vehicles at the ARHC8 - *It was noted that this would be reported later in the conference – Action discontinued.*



Action ARHC7-13: ARHC MS to include information about Autonomous Vehicles in their National Report issues - *Completed. Permanent action.*

Action ARHC7-14: AICCWG to prepare a graphic overview of existing coverage of paper charts and ENC's including known national ENC production plans - *Completed. Action discontinued.*

Action ARHC7-15: Chair ARHC to send the ARMSDIWG Whitepaper to PAME for information - *Completed. Action discontinued.*

Action ARHC7-16: AICCWG to consider the ENC overlapping and provide recommendations to relevant MS - *Completed. Action discontinued.*

Action ARHC7-17: AICCWG to update the relevant sections in the ENC overlapping report and report back to ARHC and IC-ENC - *Completed. Action discontinued.*

Action ARHC7-18: NOAA on behalf of the ARHC to send feedback to the PAME WG in support of PAMEs effort to build out its Arctic Shipping Best Practices so the information may be considered at the PAME-II 2017 meeting in September 18-20 in Helsinki, Finland - *Completed. Action discontinued.*

Action ARHC7-19: All ARHC MS to inform PAME heads of delegation about ARHC support to PAMEs effort to build out its Arctic Shipping Best Practices - *Completed. Action discontinued.*

Action ARHC7-20: IHO to provide a status report on CATZOC to AICCWG – *Overtaken by events. Action discontinued*

Action ARHC7-21: AICCWG to update ARHC MS information on backup requirements for paper charts – *It was noted that the action was 80% complete, awaiting response from Russian Federation.*

Action ARHC7-22: CA and DK to investigate the possibility to participate in the Sedna project – *It was decided not to do this. Completed. Action discontinued.*

Action ARHC7-23: IHO to include the information about nautical charts of the Arctic Waters in their report to IMO NCSR – *Action is pending for this item.*

Action ARHC7-24: NO to produce a Polar projection of chart coverage in the Arctic and send it to IHO for the IHO report to IMO NCSR – *Action is pending for this item.*

Action ARHC7-25: FI to give a status report on the project proposal by Finland and the Russian Federation. Harmonized implementation of the Polar Code – *It was noted that this Action would continue.*

Action ARHC7-26: OTWG to investigate the potential possibilities to cooperate with EMSA - *Not completed but action discontinued.*



Action ARHC7-27: Chair ARHC to inform Italy about the approval of their application to become an associated member of ARHC - *Completed. Action discontinued.*

Action ARHC7-28: Chair ARHC to coordinate with Russia concerning the position as Vice Chair - *Completed. Action discontinued.*

Action ARHC7-29: ARHC MS to engage with national AC representatives about IHO application for observer status at the AC and report – *Action discontinued until IHO Secretariat wishes ARHC to pursue this further through national representatives.*

Docs:

- ARHC8 A4a ARHC7 Final Minutes
- ARHC8 A4b Status of ARHC7 List of Actions.

B. IHO Work Programme 1 – "Corporate affairs"

B.1a IHO Secretariat's Report

IHO Secretary General presented the IHO Secretariat Report. Emphasis was given to the following:

- Since the last ARHC Conference, the Council as a new organ of the organization is put into operation.
- The status of RHC's within the overarching IHO framework.
- Maritime Safety Information – IHO capacity building lays particular emphasis on the provision of maritime safety information (MSI) for all coastal states. Consideration should be given to the guidance provided in S-53, which is a joint enterprise between IMO/IHO/WHO 'Manual on Maritime Safety Information'.
- WWNWS took place in Monaco August 2018 – two main issues considered:
 - Inmarsat i-3 to I-4 satellite migration.
 - Development of the S-124 product specification on navigational warnings.
- Crowd-Sourced Bathymetry – B-12 guidelines awaiting endorsement. Those who attending council are encouraged to familiarize themselves with the guidelines in readiness for discussion prior to endorsement. Should aim for endorsement at Council to avoid delay of up to 1 year. Delaying adoption of B-12 counterproductive.
- Seabed 2030 – Is an important element of GEBCO. The initiative should be supported where possible.
- Current primary charting authorities in Antarctica should be encouraged to consider future production and distribution of s-100 based products for Antarctica, in their charting responsibilities



Docs:

- ARHC8 B1 IHO Secretariat's Report to ARHC.

B.1b Engagement with industry during ARHC conferences:

It was noted that conferences such as ARHC attract significant industry interest and It was acknowledged that providing an arena to engage with industry is important.

Recognition that industry involvement provides valuable field experience and information on user needs.

Discussion regarding the format of the ARHC meeting and the level of industry involvement in open forum setting.

Final proposal was to maintain the same structure as present and review it as necessary in the future.

B.2 National Report of Canada:

CA Gave a presentation of their national report with emphasis on:

- Organizational change and demographic change within the organization.
- Surveying activities in the arctic.
- Vertical datum enhancements – short-term gauges currently being used but no plans to increase the number of long-term gauges.
- ENC and paper charting activity in arctic waters since ARHC7.
- Canada's Ocean Protection Plan (OPP).
- S-100 business plan.
- Other development and activities including Data access issues, crowd-sourced bathymetry and Automated Hydrographic Surface Vehicles (AHSV).

Docs:

- ARHC8 B2 CA National Report Canada.

B.3 National Report of Denmark:

DK presented their national report with focus on:

- New organizational structure established over last two years – fewer experienced employees. Struggling to produce charts in Greenlandic waters.
- Much work being done with MSDI.
- Potential establishment of Faroe Islands Hydrographic office in 2020.
- Trial of drones for coastline and shoal detection – some legal restrictions



Docs:

- ARHC8 B3 DK National Report Denmark.

B.4 National Report of Norway:

NO gave a presentation of their national report highlighting the following:

- Restructuring in the organization – aim to make role as a charting authority more visible.
- User driven hydrographic surveys 2017 – New corridor in Storfjorden, Svalbard surveyed allowing circumnavigation of Spitsbergen.
- Pilot project for S-102 (presentation given at the open forum).
- Planning for MAGIN project (Coastal Zone Management project for Norwegian Coastal waters).
- A demonstration was given of the Havbas GIS tool including AIS data.

Docs:

- ARHC8 B4 NO National Report Norway.

B.5 National Report of Russian Federation:

RU did not attend the meeting members advised to read the national report in the absence of a representative.

Docs:

- ARHC8 B5 RU National Report Russian Federation.

B.6 National Report of United States of America:

US presented their national report with emphasis on:

- Several changes in leadership.
- Hydrographic exchanges. NOAA currently has a cartographic advisor at UKHO. Expected UKHO send someone to NOAA.
- 2018 arctic surveys have focused on existing needs, passages, harbours, anchorages etc.
- Move towards new national charting plan –strategy to improve all charts.
- Moving to a gridded system.
- Nautical chart adequacy assessment – NOAA hosts workshop.
- Proposed route through the Bering Strait and Bering Sea.
- MDSI – Continued active role in this activity.



Docs:

- ARHC8 B6 US National report United States of America.

B.7 National Report of Finland (Associate Member):

FI give a presentation of their national report with emphasis on :

- Outsourcing of services since 2004
- Major reorganization planned for 2019.
- No arctic surveys.
- Renewal of bathymetric and chart production system.
- New bathymetric database management system (MERTA).
- Implementation of new ENC and paper chart production system.
- Working with testing S-102 data

Development of 'rolling coin' method for automated contours.

Docs:

- ARHC8 B7 FI National Report Finland.

B.8 National Report of Iceland (Associate Member):

IC presented their national report with emphasis on:

- New organizational structure adopted December 2017
- Status and plans for surveys in Iceland. EEZ of Iceland to be surveyed next 10- 15 years.
- Baseline for territorial waters updated June 2017.

Docs:

- ARHC8 B8 IC National Report Iceland.

B.9 National Report of Italy (Associate Member):

IT give a presentation of their national report with emphasis on:

- High North – joint research program in the arctic.
- Full data sharing of hydrographic data acquired.
- IT contributes to the work of the Arctic Council subsidiary bodies.

Docs:

- ARHC8 B9 IT National Report Italy.



B.10 Contribution to the preparation of the IHO Council:

IHO Secretary General provided a briefing for the IHO Council meeting October 2018.

Announcement of additional informal preparatory meetings will in future be communicated at an earlier stages to allow for adjusted travel plans.

Three issues for all conference primaries to consider prior to Council:

1. Strategic topics
2. S-100 service provision
3. Acknowledgement that it is the last chance to set things in motion before the Assembly.

There was a discussion on the revised version of IHO Resolution 2/1997 and an action created as a result.

ACTION: ARHC MS to comment and report to NO on the revised version of IHO RESOLUTION 2/1997 (Annex C of IRCC10 REPORT).

Docs:

(https://www.iho.int/mtg_docs/council/C1/C1Docs.html)

ARHC8 B10a Agenda C2

ARHC8B10b Redbook C2

C. IHO Work Programme 2 – "Hydrographic Services and Standards"

C.1 Operational and Technical Working Group Report:

US presented the report of the OTWG with emphasis on the update to the earlier 2015 arctic hydrographic adequacy assessment.

Three-parameter model intersecting Depth, Survey Quality (CATZOC) and AIS data to determine levels of potential concern for navigation.

It is noted that some challenges were faced when working with AIS data.

Potential for this work to be used to support crowd-sourced bathymetry initiatives.

ARHC approved sharing the analysis with PAME.



IC was asked for permission to extrapolate CATZOC data from PRIMAR for inclusion in the analysis.

Lt Cmd. Sam Greenway was thanked for his valuable efforts and contribution as chair of OTWG on behalf of ARHC. It was noted that he will be unable to continue in this role due to a new assignment.

ACTION: ARHC MS to propose replacement for chair to the OTWG.

C1b OTWG Autonomous Vehicles:

A presentation was given as part of the Open Forum and this item was not discussed further.

C1c Overview research on effect of echo sounders on marine life

IHO Secretary General reported on the outcome of the 19th meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea on the theme “*Anthropogenic underwater noise*”

ACTION: CA to update and enhance the A4 flyer “Effects of Noise on Arctic Marine Mammals” with relevant information based on the UN report on anthropological noise.

Docs:

ARHC8 C1a Report of the Operations and Technology WG

ARHC8 C1b OTWG Autonomous Vehicles

ARHC8 C1c Overview research on effect of echo sounders on marine life

C.2 International charting considerations for the Arctic:

NO as Region N Chart Coordinator presented the Arctic International Charting Coordination working group report.

The report resulted in the following actions:

ACTION: NO to propose new/revised TORs for the AICCWG in order to include the provisioning of other hydrographic services in the region.

ACTION: AICCWG Chair to include data from Iceland in the INT chart and ENC scheming.

The Secretariat presented INTOGIS phase II highlighting the many new features and functionalities. Currently in testing phase but due to be available to all early 2019.

US providing AIS for most of the world. NO is making arctic AIS data available and is working on improving in the usability of the data.



The outcome of the WENDWG and overlapping ENC's in the Arctic were discussed. As stated in the report of the AICCWG, significant progress made in eliminating gaps and overlaps in ENC coverage in Region N. In particular, attention the collaborative efforts between The United States and the Russian Federation to address overlapping issues was highlighted and commended.

NO reported the outcome of the WENDWG 8 two items highlighted:

1. Reinforced the fact that the one-year "clock" to resolve overlaps should begin once the overlapping issues have been reported to ENC producers.
2. WENDWG ToR's have been amended with the aim of bringing more societal value – revised Tor's endorsed by IRCC.

Arctic ENC's

DK gave a presentation of the establishment of an ENC Simple.

ENC simples are stripped back ENC's which include just coastlines and multibeam/SCALGO data and are produced only for areas where other ENC's do not currently exist. Currently a pilot project in two areas. Plan to check ENC simple against s-58 specifications.

Docs:

ARHC8 C2 Rev1 Report of the Arctic International Charting Coordination Working Group (AICCWG).

ARHC8 C2b Progress on the Resolution of Overlapping ENC Coverage in the Bering and Chukchi Seas

D. IHO Work Programme 3 – "Inter regional Coordination and Support"

D.1 Arctic - Marine Spatial Data Infrastructure Working Group Report:

US presented the report of ARMSDIWG.

DK presented the report from the IHO MSDIWG

ARHC noted both reports and agreed on the following actions.

ACTION: All MS to reply to the ARCTIC MSDI questionnaire published in June 2018.



ACTION: ARMSDIWG to connect GEBCO Undersea feature names Gazeteer for the Arctic and Into GIS II charting info into the Arctic SDI Geoportal base map.

ACTION: US and IHO Secretariat to review joint statement of intent regarding cooperation between Arctic SDI and ARHC.

ACTION: ARMSDIWG Chair to circulate the proposed logo to the MS and ask for comments and/or approval.

ACTION: MS to check if they have a Socio-economic study or other relevant studies and best practises and include it in the MSDI portal template.

ACTION: MS to consider participating in the OGC workshop in Washington D.C 23rd of October 2018. Possible to participate online.

Docs:

- ARHC8 D1a Arctic MSDIWG report NGA
- ARMSDIWG_WorkPlan_2017_2020.pdf
- Note_C_ARMSDIWG_ARHC_IHO_A1.pdf
- ARMSDIWG_WhitePaper_V1_1.pdf
- 20170306 MSDI Proposal OGC.PDF
- ARHC8 D1b IHO MSDIWG report Denmark

D.2 Data policy, (how) do we use Crowd Source Bathymetry?

US presented their Data policy strategy and a consideration of issues relating to the utilisation of crowd-sourced bathymetry.

ARHC agreed the following actions:

ACTION: US to present their work on datum modelling to ARHC national experts on tides and water level in an online presentation / Skype meeting.

ACTION: MS to review their Data policy for bathymetric data used in hydrographic services (especially for non-traditional data such as Crowd Sourced Bathymetric data) in order to support crowd sourced bathymetry and report at ARHC9

Docs:

ARHC8 D2.1 US_Data Policy stratetgy.



D.3 Crowd Source Bathymetry, our contribution to Seabed 2030.

NO Initiated a discussion on how to support and encourage contribution of crowd-sourced bathymetry. Suggested establishment of a Seabed 2030 compliant data overview or status report that could be updated to help direct resources.

ACTION: US, on behalf of ARHC, to ask the GEBCO Guidance Committee on how Regional Commissions can best contribute to / support Seabed 2030, specifically for Gap analysis, while providing examples of the work done in the US and NO.

D.4 Marine Spatial Management tool

NO Demonstrated their Marine Spatial Management tool and emphasised the important future role HO's can play in MSDI's.

D.6 Outreach-Arctic Council WG's

Arctic SDI members were welcomed to the meeting and a brief presentation on their task, role and activities was given.

A draft joint statement of intent between Arctic SDI and ARMSDIWG to strengthen cooperation and avoid duplication of efforts was presented and was commended by ARHC.

The proposal to formalize a relationship between ARHC and the Arctic Councils Protection of the Arctic Marine Environment Working Group (PAME) was discussed. It was proposed to start to formalize this cooperation by way of developing a Memorandum of Understanding (MoU) between the two groups. This was well received by both groups.

ACTION: US and CA to respond to the US and CA representatives of PAME and take appropriate steps to develop a MoU.

Docs:

ARHC8 D6a ARHC report to PAME

ARHC8 D6b Arctic Shipping Best Practices Forum Update

ARHC8 D6c Project Plan improved access to marine geospatial information for the Arctic

A joint meeting was held between Arctic SDi and ARMSDIWG

D.7 Status of IHO-EU Network

ARHC members were invited to review the report of the IHO-EU network working group (IENWG) prepared by DK



It was noted that funding for Arctic survey activities could potentially be available from the EU but it was stressed acquiring such funding would involve a significant amount of work.

NO and DK agreed to monitor the situation:

ACTION: NO and DK to pay attention to possible EU projects for cooperation in the arctic region and report to ARHC MS when identified.

Docs:

- ARHC8 D7 DK Report of IHO-EU Network

D.8 Coordination and liaison

US informed ARHC members on activities related to the newly established UN-GGIM MGIWG (that has good representation from ARHC members)

RU had reported beforehand that they consider the proposal to begin the process to draft and establish a formal relationship between ARHC and PAME through the development of an MOU and to draft and sign the MOU in 2019 at an appropriate venue or by correspondence.

D.9 Capacity building

NO acting as Capacity Building Coordinator for the Arctic reminded members to inform the relevant regional coordinator on relevant CB activities.

ACTION: MS to report to relevant regional coordinators when doing capacity building

NO highlighted the importance of harmonising the way HO's populate their status of survey into C-55. Especially since C-55 is used by the IHO Secretariat to report the global status of survey to the IMO.

ACTION: US and CA to participate with GIS experts in the C-55 PT online meeting

ACTION: MS to share the best practice on the population of CATZOC values and report to the DQWG

E. Any other business

E.1 Associate membership



Kartverket

In accordance with the ARHC statutes, the application of the United Kingdom to become an associate member of ARHC was circulated among ARHC member states and put on the agenda for the ARHC8 Conference. Prior to the start of the ARHC8 Conference, we received input from one of the ARHC member states with regards to the UK application. The preliminary response from this member was not supportive but the final decision will be provided to the ARHC Members when their interdepartmental elaboration of this issue is finished. Based on this input we decided to defer a broader discussion on Associate membership and participation of observers for a larger part of our Conference to the ARHC9 Conference. Subsequently, a decision with regards to the UK application is also deferred to ARHC9.

Associate membership and participation of observers and other stakeholders at the ARHC conference were discussed in general terms but no conclusion was drawn.

ACTION: ARHC chair to set up an agenda item discussing future membership of and participation in ARHC conferences on the next ARHC conference.

ACTION: ARHC-chair to add to the agenda of the next ARHC conference the deferred discussion on the application of UK to become an associate member.

NO to inform UK.

ACTION: US and RU provide input to the 2019 and 2020 IHO Work Program for ARHC

Docs:

ARHC8 E1 Application for Associate Membership by UKHO

F. Election of new Chair and Vice-Chair

RU was elected to take over as Chair of ARHC 2019 starting at the end of ARHC 8.

US was elected as Vice-Chair of ARHC 2018 Starting at the end of ARHC 8.

G. Place and date of the next ARHC9 Conference

ARHC member agreed that the next conference should be held 17-19 September 2019 based on consideration of other IHO events.



ACTION: RU to confirm location of the ARHC conference and confirm the proposed date: 17 to 19 September 2019.

ACTION: US as Vice- Chair to make a proposal for amendments to the Statutes, in particular to make it possible to arrange alternative venues for the conference.

H. Review of ARHC8 List of actions

The list of actions was reviewed and amended with comments from the ARHC members.

Docs:

- *ARHC8 List of Actions*

I. Closing of the conference

The Chair Birte Noer Borrevik concluded that the conference had been very productive thanked the ARHC member for their participation and the conference was official closed.