

ARHC Virtual Teleconference Meeting-01  
April 29, 2020  
Participating from locations in  
Canada, Denmark, Germany, Finland, France, Iceland, Italy, Monaco, Norway, UK, Sweden, USA  
(updated May 26, 2020)

## **1. Welcome and Introductions**

ARHC Chair Admiral Shephard M. Smith (USA) welcomed the group to the virtual video teleconference meeting promptly at the meeting start time (13:00 hours European Central Time). The meeting was conducted using google hangouts and included 33 participants as indicated in the participant list (*updated May 8*).

Admiral Smith conveyed the regrets of the representatives of the Russian Federation for being unable to participate today. With the quorum of four of five full members of the ARHC, the meeting proceeded. No updates to the agenda were offered.

Admiral Smith indicated minutes would be prepared by the USA shortly following the meeting and invited participants to use the "chat" feature of google hangouts to share any information during the meeting itself, beyond verbal interventions. For convenience, these are captured in Annex A to these minutes. Additionally, if any other points were important to capture but for which participants preferred not to affect the flow of the virtual teleconference, they were invited to send notes to Jonathan Justi for purposes of developing minutes.

## **2. Update: Developments since ARHC-9 Actions**

**ARHC action review:** With reference to ARHC\_VTC01\_2020\_02A the summary status of actions were presented. Of 35 actions listed at ARHC-9, there were approximately

- 9 completed actions (ARHC-9 actions: 2, 13, 14, 15, 21, 27, 29, 32, 33)
- 10 ongoing or progressing activities (ARHC9 actions: 3, 4, 8, 10, 11, 12, 17, 20, 24, 26)
- 8 are being addressed today (ARHC-9 actions: 5, 6, 16, 18, 19, 22, 23, 31)
- 8 require some near term attention (ARHC9 actions: 1, 7, 9, 25, 28, 30, 34, 35), including
  - Review of the Statutes before A-2 (ARHC9-01) CA and US have been collecting thoughts and need to put them on paper.
  - Respond to letter from DCDB Director that was sent to the ARHC last year. I think following today's discussion we will be in a good position to respond.
  - Note OTWG action to follow up on CATZOC practices to DQWG (Action9-03)
  - Officially inform PAME of the new ATCM Resolution (ARHC9-07)

The PAME-ARHC MoU was confirmed signed by the Chairpersons of the respective organizations on March 30, 2020.

Many of the actions were integrated into the course of the ARHC VTC agenda.

***Arctic International Chart Coordination Working Group - CA Arctic ENC Grid Cell Study -Draft***

CA presented a draft report on the options for a pan-Arctic ENC schema for ARHC's review and consideration if member states could come up with an agreed chart scheme for the Arctic.

NO reported the AICCWG is taking a look at this now and will come back to the ARHC-10, or if not timely, then ARHC-11, with any recommendations. Countries are happy with national gridding but now may be more open to pan arctic gridding. ARHC Chair suggested a report could be explored during the second half of this year at the Director level for further discussion. USA and CA have been working on these ideas also. ARHC Chair thanked CA for raising the topic.

DK expressed support for the idea of developing an Arctic gridded ENC schema and suggested that OGC, aeronautical, and SAR grids should also be considered in the investigation.

USA expressed interest and noted that it has already released more than 20 ENCs on their new grid on the North Slope of Alaska.

IHO Secretary-General Jonas reminded the group that gridded concept for ENCs is something being approached on a number of past occasions and hasn't been brought to fruition due to various reasons. The Arctic region could serve as a test area- technical aspects of a grid and agreement of countries of a region. A second comment noted one principal subject of the IHO is "uniformity of nautical charting." Whatever this region does should be in sync with other regions- the global community doesn't want a diversity of approaches. Uniformity is a valid target for global ENC coverage- scales and schema of ENCs.

**ACTION ARHC VTC01-01: ARHC tasked AICCWG, chaired by NO, to organize a review of options and report back to ARHC-10, if possible. Arrange a discussion at the Director level at the appropriate time.**

#### **Blackout Zone (USA)**

John Lowell presented ARHC\_VTC01\_2020\_02E with special focus on the content of Slide 8. A multinational effort over recent years has been very beneficial to understanding the implications of the magnetic jerk. Most recently, several polygons have been added in the World Magnetic Model (WMM)- including the "blackout zone." These zones indicate the magnetic field is unusable in some areas as one approaches. They identify areas where the mariner should not use or be careful using the compass.

**ACTION ACHC VTC01-02: Include this for discussion for charting implications at ARHC-10 meeting. John Lowell will share the url with the group for reference.**

#### ***ARMSDWIG Report***

Sebastian Carisio, Chair ARMSDIWG, reported:

The last two weeks ARMSDIWG held two virtual meetings (22 & 27 APR), primarily focused on the Arctic Voyage Planning Guide (AVPG) and planning for a future hackathon.

Regarding actions ARHC9-19, ARHC9-20:

--As of today, we have received responses from Canada, Denmark, Finland, Iceland, Norway, and the

United States members participating in ARMSDIWG to the online, AVPG Initialization Survey. By ARHC-10, we'll provide a report assessing what web services and data are available, and where the gaps exist in being able to provide marine geospatial data for each of the AVPG themes.

Regarding action ARHC9-21:

--Mr. Carisio has received confirmation from those same 6 Member States and Associate Members that they are participating in ARMSDIWG, and of course the Working Group is always happy to have all ARHC Member States and Associate Members put forth a representative to achieve complete ARHC participation. Please reach out to Mr. Carisio if you would like to contribute to the ARMSDIWG.

Regarding actions ARHC9-22, ARHC9-23:

--Last week Mr. Carisio met with Arctic SDI leads for their Data Working Group and Communications Working Group. He relayed to them some of the questions that arose from the ARHC-9 meeting. As a quick refresher, Arctic SDI was not interested in making their relationship with ARHC or ARMSDIWG more formal as they believed this would be an administrative and legal challenge for each of the National Mapping Agencies in Arctic SDI, with how their MoU is currently structured. As I understand it, adding a MoU with ARHC would require each of their National Mapping Agencies to enter into a MoU with the hydrographic offices that makeup the ARHC. They believe the current, informal way we've been collaborating with each other is effective at this time; however, the Arctic SDI working group level and ARMSDIWG would still like to have a Joint Statement of Intent approved by both the Arctic SDI and ARHC. The Joint Statement of Intent has been refined once more by Arctic SDI, and has been restructured to be directly between the Arctic SDI Board and the ARHC, rather than with the ARMSDIWG-level. Mr. Carisio will meet with the Arctic SDI working group leads again tomorrow, and can provide a summary of this whole discussion, along with the recent verbiage of the DRAFT Joint Statement of Intent, to the documents for this intersessional meeting.

--Finally, ARMSDIWG has determined at this point, we should focus on our respective hydrographic offices to both identify and provide quality, geospatial web services before we make a determination on what to use as a portal. Arctic SDI has expressed to us in the past that this is possible to use their geoportal, so this may be an option for us. But once we understand what data is available to address the needs defined in all the Arctic Voyage Planning Guide work, that's happened thus far, as well as Arctic Council's working groups and their Arctic users' needs captured in the Norwegian User Survey report, we'll be able to determine what sort of portal would be best for the what data we have and how we will facilitate it from each of our multiple providers.

**ACTION ARHC VTC01-03: Follow up on letter of intent with Arctic SDI from ARHC.**

In discussion, ARMSDIWG Chair noted the planning for the AVPG is focusing on earlier themes identified at ARHC-4.

***"Year in Review" Concept Document Draft***

There is much timely and valuable information contained in the Annual Reports that the countries of the

ARHC update, produce and deliver routinely every year. Much of that information or even a broader awareness or perspective of what is happening near real time hydrographically in the Arctic is likely not being fully promulgated to wide audiences. NOAA took a look at the Reports from ARHC-9 especially as they all follow a standard format per IHO Resolution, with the aim to make an attractive one-pager (front-back) summary of selected/highlighted content for sharing with other organizations and stakeholders. See ARHC\_VTC01\_2020\_02F Rev and --02G.

**ACTION ARHC VTC01-04: review this concept document and provide feedback on usefulness and content to [Alexis.Maxwell@noaa.gov](mailto:Alexis.Maxwell@noaa.gov) and [Jonathan.Justi@noaa.gov](mailto:Jonathan.Justi@noaa.gov). Please indicate if you believe the ARHC should consider something similar after ARHC-10 meeting based on member state National Reports.**

### **3. PAME's 1st Arctic Shipping Status Report (ASSR) & 4. PAME's Arctic Ship Traffic Data (ASTD) System**

Peter Oppenheimer made a brief presentation on the Arctic Ship Traffic Data (ASTD) System, an initiative of the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME). Launched in February 2019, the ASTD System is a repository for a wide range of ship traffic information, including ship tracks by ship type, information on number of ships in over 60 ports/communities across the Arctic, detailed measurements on emissions by ships, shipping activity in specific areas (e.g. EEZs, Arctic LMEs and the IMO Polar Code area), and fuel consumption by ships. Those eligible to access the ASTD System use its data to conduct analyses and prepare reports to advance knowledge on the nature, scope, and implications of increasing Arctic ship traffic. (ASTD website). Mr. Oppenheimer also spoke about the PAME's first Arctic Ship Status Report (ASSR), released on 31 March 2020. Using information from the ASTD System, ASSR Report #1 provides information on general Arctic shipping trends between 2013 and 2019 and shows how much Arctic ship traffic has increased during that period. For example, the Report shows that during this six-year period, the number of ships entering the Arctic grew by 25%, and the distance sailed by ships in the Arctic increased by 75%.

During discussion, questions posed and points raised included the following: is it possible to compare where arctic is charted to modern standards vs. where shipping is actually happening? This could possibly relate to ATCM and its recently adopted Resolution on hydrography. ARHC has looked at this for PAME but did not include traffic patterns. This will be considered and flagged as a potential action for ARHC-10 for a way ahead for refreshing our risk analysis for the region.

Dr. Jonas informed that some time ago, IHO ingested AIS info into IHO GIS. Can we transform these datasets in INTOGIS applications?

**ACTION ARHC VTC01-05: Peter Oppenheimer will followup on the above question regarding ingesting data for the IHO INTOGIS.**

NO offered that the PAME database is housed in Norwegian coastal administration and is proprietary. Integrating databases is hard to do but there may be a better system to integrate ship traffic with survey type- EVONET.

CA inquired of the connection to AVPG, ARMSDIWG and the PAME effort for further investigation.

**ACTION ARHC VTC01-06: Member states to explore ASSR report and consider potential ARHC and PAME collaboration, such as a report that depicts areas of the Arctic that are charted to modern standards overlaid with current ship traffic patterns.**

### **5. UN Decade Implementation Plan**

The USA introduced the recent review of the draft UN Decade Implementation Plan and asked the group if other HOs are engaging in this effort and if there interest to coordinate among ourselves to do so?

The IOC Decade is an important global framework that seeks to bring ocean science into action. The hydrographic community has valuable data and activities to contribute. The IHO participated last year by promoting improved mapping and standardization, and the ARHC could potentially expand items that HOs could contribute. This is an effort worthy of tracking, to ensure that the element of bathymetry is in the scope of the Decade. Interoperability is also important to bring science into action.

DK indicated it has not really been following this closely and was something they will start following, especially given the Arctic Regional Workshop being hosted in Copenhagen in October 2020.

**ACTION ARHC VTC01-07: DK will volunteer to attend the Arctic Regional Workshop and requests early cooperation of ARHC on any materials or messages, including talking points, to present.**

CA indicated it did host one of the regional workshops in Halifax in January 2020. CA could share notes with DK about how these regional workshops operate. Women in ocean sciences is especially being promoted, and perhaps we can leverage with the IHO to support women in hydrography.

IT reported the Italian Hydrographic Institute (ISTITUTO IDROGRAFICO DELLA MARINA-IIM) is fully involved with the UN Decade implementation plan with two major projects:

1. *Vespucci*, for the UN Decade of Ocean Science for Sustainable Development 2021-2030
2. The High North Program

The tall ship *Vespucci* will be deployed in a tour around the world for 18 months. During this long campaign, to be present also at the Olympic Games, postponed in July 2021, she will fly the UN-decade flag at mast.



Image provided by the Italian Marine Institute

In both cases, there will be onboard students and young researchers with the scope to contribute to Ocean Literacy Dissemination, identifying a specific project led by an ocean literate person.

The same involvement for the Arctic High North program, where there will be students on board and researchers for a widespread Ocean Literacy dissemination, pillar of IT research programs.

DK confirmed it will monitor the upcoming proposed meeting in Copenhagen.

IHO shared its input provided to the IOC on the Ocean Decade Implementation Plan posted as meeting document ARHC\_VTC-01\_2020\_5C.

#### **6. INF: US and CA Looking at Plans for Paper Chart 2.0**

CA and US informed the group of its plans to submit a paper for consideration to HSSC-11 (October 19-23; United Kingdom) in accord with paper submission guidelines.

Colby Harmon (USA) reported the most recent NCWG where interest was expressed to develop a standard process to develop paper charts from ENC.

**ACTION ARHC VTC01-08: US and CA to inform the NCWG of thinking and plans regarding a paper.**

DK and NO expressed interest to follow-up on this effort following the ARHC VTC.

ARHC notes the invitation to participate to develop paper chart 2.0.

**ACTION ARHC VTC01-09: interested member states will look at joining the paper to HSSC and should follow-up with Douglas.Brunts@dfm-mpo.gc.ca (CA) and John.Nyberg@noaa.gov (USA) directly.**

#### **7. Sharing Experiences and Updates on Hydrographic Office response to COVID-19**

This topic was not addressed due to time management.

## **8. CSB and Seabed 2030**

Norway introduced the topics of Crowdsourced Bathymetry, Seabed 2030 and GEBCO and explained how strongly interrelated the three are. Norway was very pleased to be able to introduce several key players within the GEBCO / Seabed 2030 community both as presenter during this meeting and as participant / contributor to this topic. External participation consisted of:

- Jamie McMichael Phillips, Director Seabed 2030
- Professor Martin Jakobsson, University of Stockholm, Seabed 2030 co-lead Regional Data Acquisition and Coordination Center, Arctic and North Pacific
- Professor Larry Mayer, University New Hampshire, Seabed 2030 co-lead Regional Data Acquisition and Coordination Center, Arctic and North Pacific
- Dr. Vicky Ferrini, Researcher Lamont Doherty Earth Observatory, Columbia University, Chair GEBCO Sub Committee Regional Undersea Mapping
- Jennifer Jencks, NOAA, Director IHO Data Center for Digital Bathymetry, Chair IHO Crowdsourced Bathymetry WG

Due to the fact that the first letter / questionnaire on Crowdsourced Bathymetry activities caused confusion, a second letter / questionnaire is in the making and expected to be circulated among IHO member states by the SG. The letter will also be sent through IRCC Chair to ensure it reaches RHC member states that are not a member yet of the IHO.

The meeting provided an opportunity for both Director Seabed 2030, Jamie McMichael Phillips and the lead for the Regional Data Acquisition and Coordination Center for the Arctic and North Pacific, Professor Martin Jakobsson, to address the Arctic Hydrographic Offices on achievements and challenges related to meeting the Seabed 2030 goals for the Arctic Region. Great progress has been made for the Arctic especially by making existing data accessible. To keep up similar progress will require substantial new mapping activities both by HO's but especially by other ships of opportunity. The Chair for the GEBCO Sub Committee on Regional Underwater Mapping, Dr. Vicky Ferrini, informed ARHC about a tool being developed that monitors and visualizes Seabed 2030 progress in a user friendly way and will allow potential contributors to plan their voyages in such a way that they can maximize their effect of seabed mapping. All ARHC members are encouraged to report on national status, progress and plans related to Seabed 2030, engagement with national research vessel operators, industry to seek opportunities for further potential contributions. NOAA (Peter Oppenheimer) would investigate with PAME how the Arctic can adopt the idea of the resolution that was adopted at the last Antarctic Treaty Consultative Meeting related to Research Vessels contributing to seabed mapping towards, during and back from operations.

On behalf of the ARHC, the Chair, Admiral Smith, thanked CA for their very broad distribution of NONNA 100 for SB 2030 as a model of data sharing. Finally, a National progress report that the U.S. released in April 2020 is available as meeting document ARHC\_VTC-01\_2020\_8B showing a few percentage points progress in mapping US waters year over year.

## **9. ARHC-10 Update**

Admiral Smith updated the group on the plans for ARHC-10 to be held in Alaska, USA. The originally proposed meeting venues for the Science Forum (Anchorage) and the ARHC (Nome) have been scaled back- both meetings will be held in Anchorage due to the pandemic. A draft notional agenda for both meetings was shared with the group for follow-up after the meeting.

**ACTION ARHC VTC-01-10: Member states to review and offer feedback to the USA on the Science Forum, ARHC agenda, and participants list.**

#### **10. Virtual Group Photo and Minutes**

The group took a virtual group photo and Admiral Smith indicated minutes would be drafted by Jonathan Justi and circulated for comment shortly.

#### **11. Next Steps**

Admiral Smith suggested the group consider two virtual meetings over the summer to continue progressing the work of the group. The first meeting would be limited to the full members of the ARHC to discuss updates to the statutes based on assessment and recommendations in connection with ARHC9-01. A second ARHC VTC meeting could be in June/July of the full group to share updates and review preparations for ARHC-10 and any other collaborative matters.

#### **12. Adjourn**

The meeting concluded as scheduled on time.



## Annex A

Comments offered in comment form during the meeting

Shep Smith - NOAA Federal 8:35 AM

Question to discuss sometime...What is the geographic bounds of the Arctic coverage analysis in the Arctic RDACC? Is it close enough to the regional bounds for ARHC for us to use it for a performance measure for the ARHC?

BTW-well done Martin and Larry!

Shep Smith - NOAA Federal 8:36 AM

Could we create a SB2030-resolution S-102 product regionally?

Maybe limited to "deeper" water?

David Genevieve McCormack 8:37 AM

As we make progress with satellite derived bathymetry- could we consider including it as a qualified source of data in seabed 2030, especially for shallow waters in the arctic?

Is there a way we could use the PAME shipping database to tap into new contributors for crowd source bathymetry?

S. Carisio 8:43 AM

Excellent presentations! From a ARMSDIWG and Arctic SDI stand point, we've been very interested in utilizing the IBCAO as a open geospatial web service (e.g. OGC WCS). We see this as being helpful to many Arctic users. If there are plans to make the IBCAO accessible via open web service, I think it would be well supported by the users, beyond the download only format.

Mathias Dirk Jonas 8:46 AM

As indicated earlier, there is a WENDWG action on the US\_NGA (supported by NO for Arctic) to provide the IHO Secretariat/KHOA with a world-wide database for AIS traffic density. EMODnet data for European waters have been already integrated for European waters in the INTogIS II system so RHCs can assess the adequacy of ENC coverage against shipping traffic.

So the action for ARHC is whether you can provide something directly from the ASTD for the Arctic, that would be very useful for Arctic International Coordination Charting WG, until it is superseded by the world-wide database to be provided by the US NGA).

John Lowell 8:54 AM

To Vicki's comment, there is an action on the Chairs of TSCOM and SCRUM "The GGC requested the sub-committees to liaise and develop proposals, in coordination with the Regional Centers and appropriate

relevant IHO and IOC bodies, to identify priority areas for mapping and crowdsourced bathymetry activities." The action is envisioned to standardize the gaps globally from each RDACC.

CA: plan to do survey in Arctic this summer. would welcome hearing other HO experiences have given change of planning conditions.

NO: JL WMM model and the jerk. Does NGA have any insights on RU action? Answer No.

## Annex B

ACTION TABLE  
ARHC VTC01 April 29, 2020

Action #	Description	Who	When
ARHC VTC01-01	ARHC tasked AICCWG, chaired by NO, to organize a review of options and report back to ARHC-10, if possible. Arrange a discussion at the Director level at the appropriate time.	AICCWG Chair	ARHC-10
ARHC VTC01-02	Include this for discussion for charting implications at ARHC-10 meeting. John Lowell will share the url with the group for reference.	John Lowell	ARHC-10
ARHC VTC01-03	Follow up on letter of intent with Arctic SDI from ARHC.	ARMSWIWG Chair	ARHC-10
ARHC VTC01-04	review this concept document and provide feedback on usefulness and content to Alexis.Maxwell@noaa.gov and Jonathan.Justi@noaa.gov. Please indicate if you believe the ARHC should consider something similar after ARHC-10 meeting based on member state National Reports.	All	June 10
ARHC VTC01-05	Peter Oppenheimer will followup on the above question regarding ingesting data for the IHO INTOGIS.	Peter Oppenheimer	July 01
ARHC VTC01-06	Member states to explore ASSR report and consider potential ARHC and PAME collaboration, such as a report that depicts areas of the Arctic that are charted to modern standards overlaid with current ship traffic patterns.	All	Ongoing
ARHC VTC01-07	DK will volunteer to attend the Arctic Regional Workshop and requests early cooperation of ARHC on any materials or messages, including talking points, to present.	DK	August
ARHC VTC01-08	US and CA to inform the NCWG of thinking and plans regarding a paper.	US and CA	ASAP
ARHC VTC01-09	interested member states will look at joining the paper to HSSC and should follow-up with Douglas.Brunts@dfo-mpo.gc.ca (CA) and John.Nyberg@noaa.gov (USA) directly.	All	ASAP
ARHC VTC-01-10	Member states to review and offer feedback to the USA on the Science Forum, ARHC agenda, and participants list.	All	July 01