ARMSDIWG Report (ARHC11-C3)

Current status and planned actions of the ARMSDIWG in its fifth full year of operation.

11th Arctic Regional Hydrographic Commission Meeting

09-10 NOV 2021

ARMSDIWG5

- **Meetings**
  - ARMSDIWG 5.1, 09 NOV 2020
  - ARMSDIWG 5.2, 12 NOV 2020
  - ARMSDIWG 5.3, 10 MAY 2021
  - ARMSDIWG 5.4, 20 MAY 2021
  - ARMSDIWG 5.5, 30 JUN 2021
  - ARMSDIWG 5.6, 30 SEP 2021

- **Highlights**
  - *An assessment of Arctic Voyage Planning Guide (AVPG) feasibility with limited resources*
  - *An information session on automatic identification system (AIS): Global Maritime Traffic Density Service*
  - *Planning for participating in the Federated MSDI-Pilot activity organized by Open Geospatial Consortium (OGC)*
  - *Potential collaboration to Arctic Council Arctic Data Policy with Arctic SDI*
  - *Reporting national MSDI progress towards ARHC activities*
  - *5-year reassessment of the working group*

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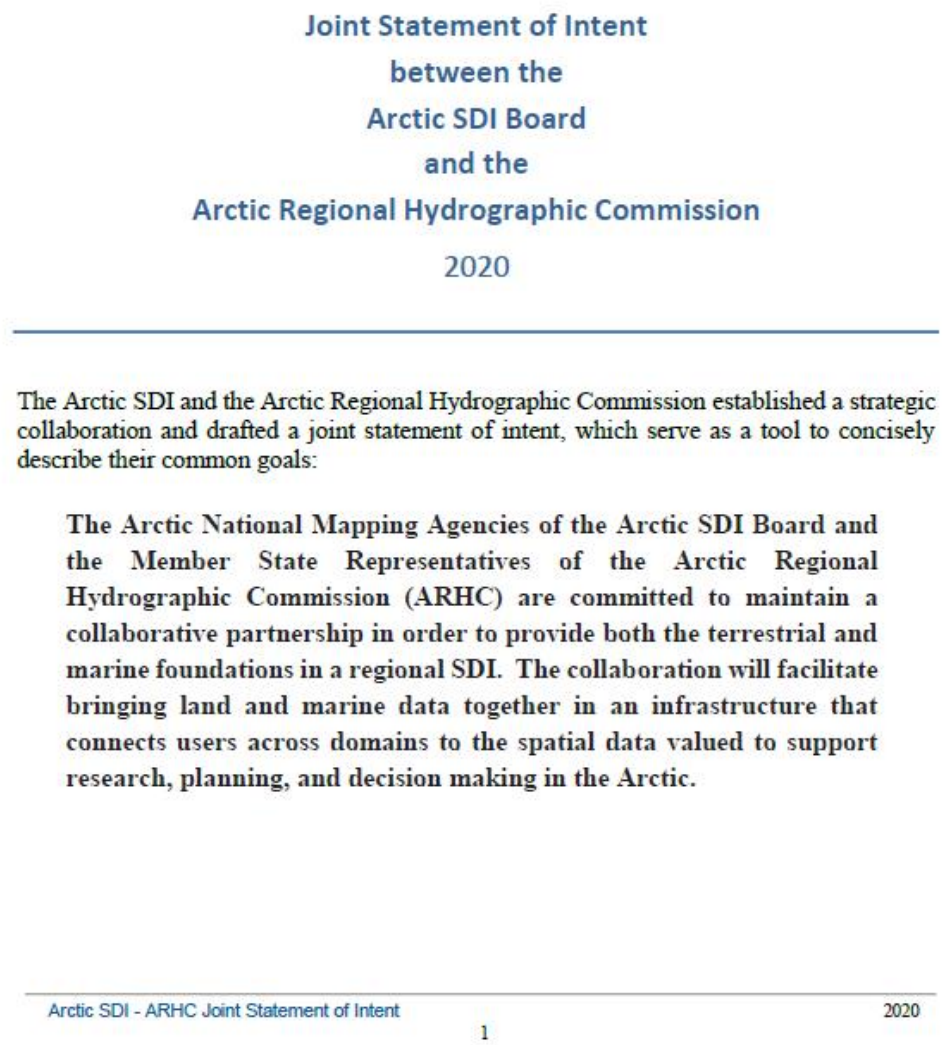
Cooperation with Arctic SDI

- The approved Joint Statement of Intent between the Arctic SDI Board and the Arctic Regional Hydrographic Commission (2020) has been provided in PDF format for posting to the ARHC web page.
- ARMSDIWG confirmed that the Copernicus Marine Service sea ice web services are available, and the US representation from ARMSDIWG began a dialog with the U.S. National Ice Center (USNIC) and the National Snow and Ice Data Center (NSIDC) about potential for future high-quality sea ice web services sourced from NSIDC for reuse.
- ARMSDIWG to participate in Arctic SDI project helping to refine the harvesting of relevant marine data services for the region.



Joint Statement of Intent
between the
Arctic SDI Board
and the
Arctic Regional Hydrographic Commission
2020

The Arctic SDI and the Arctic Regional Hydrographic Commission established a strategic collaboration and drafted a joint statement of intent, which serve as a tool to concisely describe their common goals:

The Arctic National Mapping Agencies of the Arctic SDI Board and the Member State Representatives of the Arctic Regional Hydrographic Commission (ARHC) are committed to maintain a collaborative partnership in order to provide both the terrestrial and marine foundations in a regional SDI. The collaboration will facilitate bringing land and marine data together in an infrastructure that connects users across domains to the spatial data valued to support research, planning, and decision making in the Arctic.

Arctic SDI - ARHC Joint Statement of Intent 2020
1

Federated Marine SDI-Pilot (FMSDI-Pilot)

- Organized by OGC, the FMSDI-Pilot is excellent opportunity for collaboration of stakeholders across the marine domain.
- Builds upon the foundation of the OGC-IHO MSDI Concept Development Study (CDS) from 2018-2019 that included the participation of several ARMSDIWG member organizations.
- Multiple members of ARMSDIWG are currently, or in the process of, supporting the Federated MSDI-Pilot.
- Potential exists to explore use cases of voyage planning with a land/sea interface component in the Arctic, as well as other use cases in other regions.

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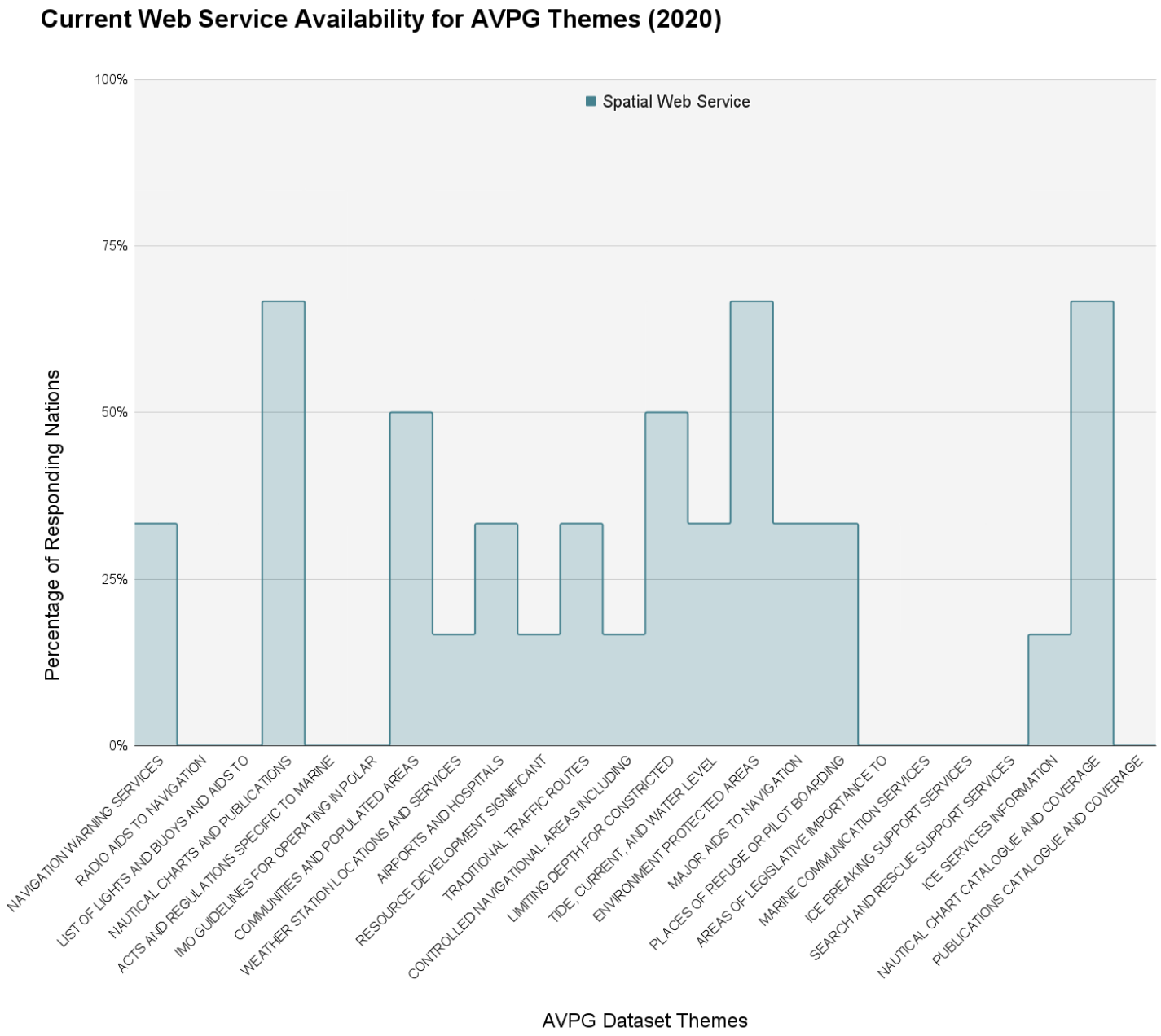
AVPG Status (Web Services)

- Only 21% of AVPG Datasets are collectively available as a **geospatial web service**.
- No single theme is fully covered by ARHC HOs.



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5-year Reassessment of ARMSDIWG

- List of milestones achieved in report.
- ARMSDIWG with their current resources and their organizational breadth/structure are very limited in capacity and cannot equally mirror that of Arctic SDI to contribute in an equal way or support operational tasks that may be desired by ARHC, such as the AVPG.
- ARMSDIWG's previous Terms of Reference (ToR) was not initiated with an operational component, so the last few years of ARMSDIWG interpreting AVPG criteria/requested data, inventorying available datasets, etc. has been a lengthy process without achieving a prototype stage at the very least.

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5-year Reassessment of ARMSDIWG

- The truth today is that an Arctic user still does not currently have a central or common way to find authoritative Arctic marine spatial data from ARHC's HOs, nor do they have a total set (i.e. gaps in coverage) of usable web services available to them for the majority of themes they've asked for in various studies and surveys.
  - ARMSDIWG cannot require an individual HO to create data and make that data Findable, Accessible, Interoperable, and Reusable (FAIR Data Principles)
  - Those requirements come from the HO's government and its office polices to produce data or make it available.
  - ARMSDIWG can help organize and make recommendations as to what types of data HOs could produce to fulfill the feedback received from users in the Arctic (ref. checklist).
  - It is ultimately up to each HO to make available the data that they can share.

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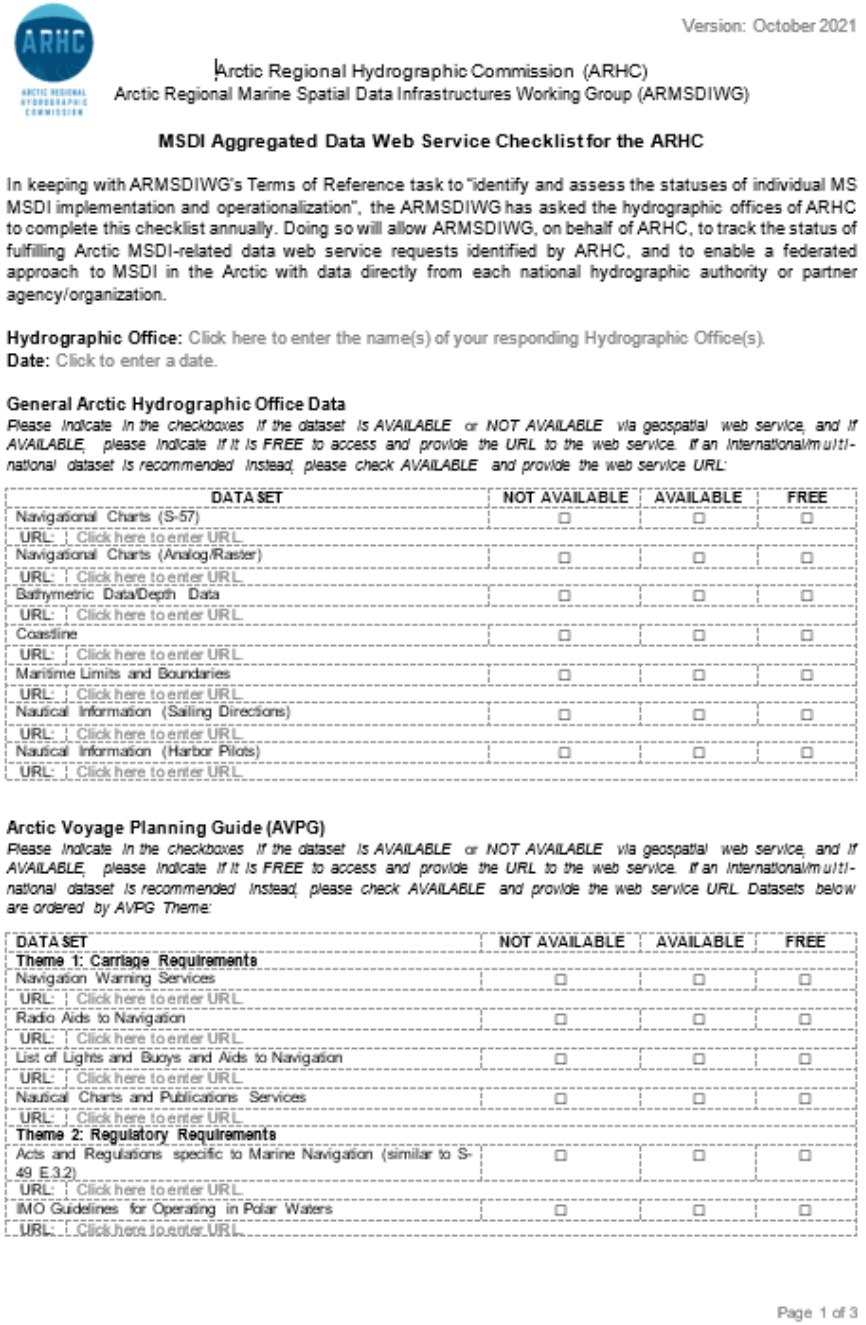

Version: October 2021

Arctic Regional Hydrographic Commission (ARHC)
Arctic Regional Marine Spatial Data Infrastructures Working Group (ARMSDIWG)

MSDI Aggregated Data Web Service Checklist for the ARHC

In keeping with ARMSDIWG's Terms of Reference task to "identify and assess the statuses of individual MS MSDI implementation and operationalization", the ARMSDIWG has asked the hydrographic offices of ARHC to complete this checklist annually. Doing so will allow ARMSDIWG, on behalf of ARHC, to track the status of fulfilling Arctic MSDI-related data web service requests identified by ARHC, and to enable a federated approach to MSDI in the Arctic with data directly from each national hydrographic authority or partner agency/organization.

Hydrographic Office: Click here to enter the name(s) of your responding Hydrographic Office(s).
Date: Click to enter a date.

General Arctic Hydrographic Office Data

Please indicate in the checkboxes if the dataset is AVAILABLE or NOT AVAILABLE via geospatial web service, and if AVAILABLE, please indicate if it is FREE to access and provide the URL to the web service. If an international/multi-national dataset is recommended instead, please check AVAILABLE and provide the web service URL.

DATA SET	NOT AVAILABLE	AVAILABLE	FREE
Navigational Charts (S-57)	☐	☐	☐
URL: Click here to enter URL.			
Navigational Charts (Analog/Raster)	☐	☐	☐
URL: Click here to enter URL.			
Bathymetric Data/Depth Data	☐	☐	☐
URL: Click here to enter URL.			
Coastline	☐	☐	☐
URL: Click here to enter URL.			
Maritime Limits and Boundaries	☐	☐	☐
URL: Click here to enter URL.			
Nautical Information (Sailing Directions)	☐	☐	☐
URL: Click here to enter URL.			
Nautical Information (Harbor Pilots)	☐	☐	☐
URL: Click here to enter URL.			

Arctic Voyage Planning Guide (AVPG)

Please indicate in the checkboxes if the dataset is AVAILABLE or NOT AVAILABLE via geospatial web service, and if AVAILABLE, please indicate if it is FREE to access and provide the URL to the web service. If an international/multi-national dataset is recommended instead, please check AVAILABLE and provide the web service URL. Datasets below are ordered by AVPG Theme:

DATA SET	NOT AVAILABLE	AVAILABLE	FREE
Theme 1: Carriage Requirements			
Navigation Warning Services	☐	☐	☐
URL: Click here to enter URL.			
Radio Aids to Navigation	☐	☐	☐
URL: Click here to enter URL.			
List of Lights and Buoys and Aids to Navigation	☐	☐	☐
URL: Click here to enter URL.			
Nautical Charts and Publications Services	☐	☐	☐
URL: Click here to enter URL.			
Theme 2: Regulatory Requirements			
Acts and Regulations specific to Marine Navigation (similar to S-49 E.3.2)	☐	☐	☐
URL: Click here to enter URL.			
IMO Guidelines for Operating in Polar Waters	☐	☐	☐
URL: Click here to enter URL.			

5-year Reassessment of ARMSDIWG

- After 5 years of ARMSDIWG's existence and meeting the threshold of their current capacity, ARHC may want to reassess what they would like to achieve with regards to MSDI in the region.
- With this report, ARMSDIWG has provided an updated ToR and aligned Work Plan given their current capacity and resources for ARHC consideration.

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Invited Actions of ARHC

- Take note of the report.
- Discuss the question: what would ARHC like to achieve with regards to MSDI in the region?
  - Review, discuss, and/or approve the updated ***ARM SDIWG ToR*** (provided under separate cover).
  - Review, discuss, and/or approve the ***ARM SDIWG Work Plan 2021-2026*** (provided under separate cover).
  - Consider adopting the ***MSDI Aggregated Data Web Service Checklist for the ARHC*** (provided under separate cover) as a standard mechanism to report annually the progress towards individual HO provisioning of data web services to support an Artic federated MSDI approach in response to the various user-driven activities identified by ARHC MS.
- Approve the posting of the ***Joint Statement of Intent between the Arctic SDI Board and the Arctic Regional Hydrographic Commission (2020)*** document (provided under separate cover) to the ARHC website Basic Commission Documents (https://iho.int/en/basic-commission-documents-1).
  - Consider a **press release** avenue to promote the *Joint Statement of Intent*, possibly with the IHO News Archive.
- Take action as seen appropriate.

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