Optimizing Polar Observing with Asset-Level Metadata Interoperability Across Networks

William Manley[1], Roberta Pirazzini[2], Taco De Bruin[3], Allison Gaylord[4], Christoph Wohner[5], Michael Allchin[6], Adrienne Canino[7], Joseph Nolan[8], Elmer Topp-Jørgensen[9], Chantelle Verhey[10], Jonathan Blythe[11], Maureen Biermann[12], Shannon Christoffersen[6], Jay Pearlman[13], Josephine-Mary Sam[12], Dennis Walworth[14], and other POAwg Participants[15]

[1]University of Colorado, [2]Finnish Meteorological Institute, [3]Royal Netherlands Institute for Sea Research, [4]Nuna Technologies, [5]Environment Agency Austria, [6]University of Calgary, [7]Axiom Data Science, [8]European Polar Board, [9]Aarhus University, [10]International Technology Office, [11]Bureau of Ocean Energy Management, [12]University of Alaska Fairbanks, [13]IEEE, [14]US Geological Survey, [15]polarobservingassets.org

- **Want to showcase your network?**
- **Interested in best practices for sharing information about observing sites, tracks, projects, stations, and more?**
- **Want an easier way to create, populate, expand, or deploy a catalog of observing assets?**

Polar Observing Assets Working Group (POAwg)

There is broadly recognized need for an integrated Arctic observing system, including a means of identifying overlaps and gaps, a "knowledge map" to clarify directions, and ways to build capacity to better meet observing goals. To assist with these needs, a working group has formed under the SAON Committee on Observations and Networks (CON) to reduce effort while showcasing and integrating the summed contributions of multiple systems.

Observing Assets

POAwg builds upon steps taken by the polar data community for the interoperability of "dataset-level" metadata, but in this case for discovery-level metadata about observing ***infrastructure*** such as:

- fixed platforms, stations, facilities, plots, moorings, observatories, community-based observations, or wherever repeat measurements have been made.
- mobile platforms, vessels, buoys, aircraft, vehicles, etc.

... as well as observing ***activities*** such as: research projects, field campaigns, programs, and the observing networks themselves.

A Registry of Polar Observing Systems

As its first task, POAwg is building a registry of polar observing systems – with details on geographic and observational scope as well as asset-level metadata standards, vocabularies, and transfer protocols in practice by each system to catalog their own assets. Use cases have been identified, and crosswalks developed across prior inventories. The registry will have a federated backend as well as a frontend allowing users to browse, search, and filter, with links to more information. Other POAwg tasks include: facilitating crosswalks & translation tools; and creating recommendations for adoption and implementation of established solutions & best practices.

Collaboration & Benefits

POAwg will help to clarify best practices for observing-related metadata sharing; establish a basis for a more comprehensive perspective of polar observing through aggregation and federated search; better inform local communities of observing activities nearby; and guide network assessment & planning. Most important, outcomes will make it easier for individual networks to create, improve, and share their own catalogs, thus saving time and effort.

For more info.: POAwg Short Statement for AOS 2022
Join POAwg at: PolarObservingAssets.org