In Pursuit of Interoperability

An ultimate goal is that information for multiple observing networks is discoverable, authoritative, and up to date. Due credit should be given to data sources. And the information should be made accessible for use by various groups in a variety of ways for their own purposes.

In essence, what is needed is a dynamic network of distributed nodes for information sharing. This in turn relies on establishment of web services that are compatible with other observation networks to optimize opportunities! Consider joining a network of agencies and organizations that are sharing information for both individual and collective benefit.

Collaborate

Would you like to showcase your sites? Increase visibility for your organization? Strategically assess your monitoring activities within the context of other observation networks to optimize opportunities! Consider joining a network of agencies and organizations that are sharing information for both individual and collective benefit.

Visualization, Strategic Assessment, and Decision Support for Arctic Observing: The Arctic Observing Viewer (AOV)

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Abstract

To better assess progress in Arctic Observing made by U.S. SEARCH, NSF, AOI, SAI, and related initiatives, an updated version of the Arctic Observing Viewer (AOV) has been released. This web mapping application and information system conveys the who, what, where, and when of “data collection sites” – the precise locations of monitoring assets, observing platforms, and wherever repeat marine or terrestrial measurements have been taken. Over 7700 sites in AOV encompass a range of boreholes, ship tracks, buoys, towers, sampling stations, sensors, vegetation plots, stream gauges, ice cores, observatories, and more at http://ArcticObservingViewer.org.

Contributing partners are the U.S. NSF, ACADIS, ADWG, ADOOS, a2dc, AOI, CAF, GINA, IASOA, INTERACT, NASA ABoVE, and USGS, among others. While focusing on U.S. activities, information exchange with international groups is welcomed for mutual benefit. Users can visualize, navigate, select, search, draw, print, view details, and follow links to obtain a comprehensive perspective of environmental monitoring efforts.

We continue to develop, populate, and enhance AOV. Recent improvements include: a more intuitive and functional search tool, a modern cross-platform interface using JavaScript and HTML5, and hierarchical ISO metadata coupled with RESTful web services & metadata XLinks to span the data life cycle (from project planning to establishment of data collection sites to release of scientific datasets). AOV is founded on principles of interoperability, such that agencies and organizations can use the AOV Viewer and web services for their own purposes. In this way, AOV complements other distributed yet interoperable cyber resources, and helps science planners, funding agencies, investigators, data specialists, and others to: assess status, identify overlap, fill gaps, optimize sampling design, refine network performance, clarify directions, access data, coordinate logistics, and collaborate to meet Arctic Observing goals.

AOV is Part of the Project & Data Life Cycle

- Project Planning
- Collection Site Monitoring
- Dataset Usage & Understanding

- Who is doing what, when and where?
- How do we plan for logistics?
- Where are medical facilities, field research stations, airports, etc.?
- Where are existing data collection sites?
- Who operates and manages existing sites?
- Which sites can I use?
- Where are more sites needed?
- Is this dataset suitable for my research?
- Does it cover my area for the right time period?
- How was it created? What are the errors? Who do I contact with questions?

Connecting Systems with ISO Metadata and RESTful Services

Each project location is a logistical base of operation. Each data collection site is a sensor, observing platform, or repeat measurement. Each data collection site can have many datasets.

A new AOV Viewer has just been released with a clean, fast, and modern interface. This prototype app – based on HTML5, Javascript, and hierarchical ISO metadata – is mobile friendly while being intuitive and more informative. Users can click on the points or lines to view details about each “data collection site”: a borehole, flux tower, drifting buoy, etc.

Detail information on data collection sites, as ISO 19115-1 metadata, flows from the AOV database via web services to the AOV Viewer, and to applications or databases hosted by other organizations.

A new Search tool makes it easier to find sites of interest. Run complex searches based on Funding Agency, Funding Program, Year, Discipline, Type of Measurement, GCMD Science Keywords, and more. Search results are shown in a table at bottom, with numerous details and links to more information as well as dataset catalog pages.