

Developments In ARMAP And AOV With ISO Metadata And RESTful Architectures For Data Sharing And Interoperability

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Making observations in the Arctic presents many unique challenges related to difficult logistical planning and execution and involvement of multiple agencies and programs from many countries. The Arctic presents unmatched opportunities for collaboration and cooperation at many levels. The Arctic Research Mapping Application (ARMAP) and the Arctic Observing Viewer (AOV) provide examples of the benefits of such collaboration and cooperation. ARMAP (<http://armap.org/>) is a suite of online applications and services that provide project-tracking information (who's doing what, when and where in the region) for over 2400 projects funded by 17 different U.S. Agencies. The Arctic Observing Viewer (<http://ArcticObservingViewer.org>) compiles detailed information for over 7700 observation sites pertaining to U.S. Arctic Observing efforts across multiple networks. Contributing partners include the U.S. NSF, USGS, ACADIS, ADIwg, AOOS, a2dc, AON, ARMAP, BAID, IASOA, INTERACT, and others. The web applications allow users to visualize, navigate, select, advance search, draw, print, and more. Together these projects provide critical information for 1) project planning, 2) data site selection and 3) clarifying activities required to achieve scientific objectives. The ARMAP and AOV databases have been developed and maintained separately but are now connected using RESTful web services that integrate collection site information into project searches using hierarchical ISO metadata structures and embedded metadata components (XLinks). The next phase will add links to dataset-level metadata to form an integrated web-accessible knowledge base spanning the data life-cycle from project planning through site selection and data collection to user discovery, use and understanding with interactive mapping and data services at all phases. This approach provides data sharing and interoperability across a distributed information system, so that project managers and planners, scientists, data managers and archives, and other users from multiple organizations can take advantage of web services, interoperable metadata standards, a comprehensive perspective, and more to meet the diverse goals of the Arctic data community.