

## Management and integration of Arctic data

State-of-the-art and challenges: In 2014, SAON established the Arctic Data Committee (ADC) to map Arctic data management projects and services with their locations and relationships, to identify and promote common metadata elements, to provide a guide on data publication and citation, and to conduct interoperability experiments for selected regions and SBAs (Social Benefit Areas). They also established the Committee on Observations and Networks (CON), to advise the SAON Board on funding, coordinating and extending existing observation systems, and planning for their sustainability. Several Spatial Data Infrastructures (SDIs) and data repositories hold data for either the whole, or part of, the Arctic. These SDIs are operated by different organisations and communities world-wide, making it a challenge to reach agreement on common metadata and data standards, data policies and governance frameworks.

A further challenge is to reach a higher level of interoperability between the different SDIs that hold relevant data for Arctic regions. This concerns both technical interoperability (i.e. the capability of systems to exchange metadata and data via predefined standard protocols and formats without human intervention), as well as semantic interoperability (i.e. the capability of systems to interpret the meaning of the metadata and data exchanged, by means of automated systems).

### Expected progress beyond state-of-the-art:

- Develop a joint data governance framework for a Pan-Arctic Observation System.
- Integrate distributed data repositories into an integrated Arctic Observing System platform.
- Improve technical interoperability between the Arctic SDIs and data repositories.
- Incorporate best practices on documenting the semantic meaning of a dataset.