SAON Strategy

# Introduction

SAON was established following the 2011 Arctic Council (AC) Nuuk Declaration. The declaration recognizes the “importance of the Sustaining Arctic Observing Networks (SAON) process as a major legacy of the International Polar Year for enhancing scientific observations and data-sharing.” The declaration text also defines the SAON governance structure, and Terms of Reference for SAON was approved in 2012[[1]](#footnote-2). SAON is a joint initiative of the Arctic Council and the International Arctic Science Committee.

In 2014, the SAON Board finalized the first implementation plan for SAON, including a decision to establish two committees: The Arctic Data Committee (ADC) and the Committee on Observations and Networks (CON). The overarching goal of ADC is to promote and facilitate international collaboration towards the goal of free, ethically open, sustained, and timely access to Arctic data through useful, usable, and interoperable systems. The overarching goal of CON is to promote and facilitate international collaboration towards the goal of a pan-Arctic observing system.

This document provides a 5-10 year strategy for addressing current and future Arctic observing needs. It describes SAON’s vision, mission, guiding principle and goals, and outlines the manner in which the goals will be achieved. The document sets priorities for how SAON will fulfil its mission.

An additional document *SAON Implementation* exists. In this document, detailed information about the objectives is provided; this includes description of timelines, cooperation with external organisation and resource/funding requirements.

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# Vision

SAON's vision is to facilitate a connected, collaborative, and comprehensive, long-term, pan-Arctic Observing System that serves societal needs.

# Mission

SAON facilitates, coordinates, and advocates for coordinated international Arctic observations and mobilizes the support needed to sustain them.

# Guiding Principles

SAON’s guiding principles reflect its overarching philosophies that inform how SAON operates. They include:

* SAON values both research and operational needs for Arctic observations;
* The design and operation of the Observing System is guided by a balance between bottom-up and top-down needs and priorities;
* The Observing System will be implemented and sustained in a transparent and open cooperation and collaboration with all those committed to Arctic observations;
* SAON promotes contributions of all types of Arctic observations including but not limited to *in situ*, remotely sensed, and community-based observations, and the infrastructure supporting them;
* The Observing System will utilize Indigenous and local knowledge guided by ethical use and honouring the proprietary rights of data contributors;
* SAON promotes ethically free and open access to ethically-collected data;
* SAON works with counterparts in Antarctic, global, as well as national observation communities, where appropriate.

Following these principles, SAON will promote Arctic observing and mobilize the support needed to achieve full implementation and sustained operation on time scales of decades and beyond.

SAON itself will not undertake research, science planning, policymaking, observations, data archiving, or funding of these efforts, which will remain the responsibility of the ongoing networks/sites/systems and data centers, the organizations that support them, or appropriate decision-makers.

# Goals

In keeping with the above vision and mission, SAON has adopted three goals that it shall pursue and emphasize. SAON’s guiding principles support its work across these three goals and define SAON’s operating procedures.

The SAON Strategy is organized around three key goals:

1. Creating a roadmap to well-integrated Arctic observing system;
2. Free and ethically open access to all Arctic observational data; and
3. Ensuring sustainability of Arctic Observing.

Each of these three goals includes a subset of objectives outlined below.

Addressing the goals will require the expertise and cooperation of a wide range of stakeholders and knowledge systems. While the Arctic Council is well-positioned to coordinate state level priorities and actions, effective implementation of the SAON Strategy will require partnership with policy makers at all levels, Arctic Indigenous Peoples organizations, non-Arctic states, academia, civil society and the private sector at the national level, as well as engagement from other multilateral/international groups. Effective implementation generally requires gender-responsive and gender-balanced approaches, and the participation of Indigenous Peoples and local communities.

## Goal 1: Creating a roadmap to well-integrated Arctic observing system

The rapid on-going changes in the Arctic present an urgent need to better observe, characterize and quantify processes and properties in all subsystems of the Arctic.

SAON will engage and facilitate connections among the producers and end-users of Arctic observations to create and maintain a sustained Arctic Observing System. A consistently adopted, community-endorsed framework will be essential to fulfilling this goal. The International Arctic Observations Assessment Framework[[2]](#footnote-3), developed in partnership with SAON, provides such a starting point. SAON will help to flesh out the observations, products, and services that complete the Arctic Observations value tree[[3]](#footnote-4). A holistic benefit analysis will assess the current observing system sustainability and its potential expansions and can be used to create a roadmap to well-integrated Arctic observing capacity. The case will be strengthened by identifying funding possibilities to support infrastructures required for observations and facilitating technological innovations to improve observation capacity.

SAON will work closely with other prominent Arctic and international organisations as well as with the Arctic Council Permanent Participants in finding synergies and joint activities, and avoiding overlaps in the efforts in reaching Goal 1. The collaboration will include, but is not limited to: AMAP, ARCS (Japan), CAFF (CBMP), EU-PolarNet, GEO, GEOCRI, IASOA, ICC, INTAROS, INTERACT, PRIC, Saami Council, SIOS, and WMO.

This Goal has five objectives:

### Conducting an inventory of national observational capacities.

### Assessment of the Arctic observational capacity.

1. Providing recommendations for future Arctic observational capacities.
2. Creating opportunities to develop and implement Arctic Societal Benefit Areas (SBAs).
3. Provision of a long-term repository for relevant project deliverables.

## [Goal](file:///C:\SAON%20Strategy%20Framework\Updating%2008NOV%20version\02_30NOV_WA_11_SAON_Strategic_Framework_08NOV_PLP_WGA.docx#_djrrklsokyrs) 2: Free and ethically open access to Arctic observational data

One of SAON’s guiding principles is to promote ethically free and open access[[4]](#footnote-5) to ethically-collected data.

A review of literature and the results of a series of different meetings, workshops and conference sessions focused on Arctic data management have identified myriad requirements, characteristics, and visions for an open, interconnected, international system for sharing data across disciplines, domains, and cultures. These include but are not limited to:

* A distributed design that connects different data repositories and other resources. This implies and requires interoperability that supports sharing data among various information systems in a useful and meaningful manner;
* “Common access, Single Window” to discuss and access data through information technology;
* High quality, ethically open data preserved over time (implies sustainability);
* Data as a responsive, “live” service rather than simple download approach;
* Inclusive of Indigenous and local perspectives and information;
* Access to “big data” and powerful analytical tools (e.g. cloud platforms);
* Cost effective, maximizing the investments made to develop and maintaining the system.

The approximately sixty international participants at the 2016 Polar Connections Interoperability Workshop and Assessment Process agreed that the key current challenges impeding the development of a globally connected, interoperable system are social and organizational rather than technical: supporting human networks, promoting standards, and aligning policy with implementation.

In recognizing the elements of the envisioned system and the key challenges identified by the community, SAON will first focus on working with the global Arctic data community, including data providers, technologist, funders, direct users, and beneficiaries within society, to improve connections, collaboration, and cooperation between and among actors. This effort will provide the necessary collaborative foundation needed to achieve the desired system.

This Goal has three interdependent objectives:

### Create a road map outlining steps towards achieving a system that will facilitate access to Arctic observational data.

### Advance a system to facilitate access to Arctic observational data.

### Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data.

## Goal3: Ensuring sustainability of Arctic Observing

Goals 1 and 2 can only be successful if the need for improved coordinated Arctic Observation and sharing of data and resources, as well as need for additional resources are understood, accepted and supported by all relevant stakeholders over the long term. Several steps are needed to achieve sustained Arctic observing, which should be realized through these three objectives:

### Develop a strategy for long-term financial commitment in Arctic observations.

### Apply the strategy developed in 3.1 to lobby funding agencies and states to ensure sustainability of Arctic observing.

### Secure funding for international SAON secretariat and operational costs.

1. https://www.arcticobserving.org/images/pdf/Terms\_of\_Reference/saon-terms-of-reference.pdf [↑](#footnote-ref-2)
2. https://www.arcticobserving.org/images/pdf/misc/STPI-SAON-International-Arctic-Observations-Framework-Report-2017.pdf [↑](#footnote-ref-3)
3. At the top level of the value tree are the Societal Benefit Areas (SBAs) that define the environmental, economic, and social domains in which services, operations, and research provide societal benefit. Sub-areas represent natural thematic divisions of each SBA. Each sub-area is composed of key objectives (KOs). KOs are service, operational, or research activities that are clearly supported by and can be linked to Earth-observing systems and their data and information products. The bottom of the value tree consists of identified complementary products, services, and research outcomes that contribute to the achievement of international objectives in the Arctic. [↑](#footnote-ref-4)
4. The source of this concept is *International Arctic Science Committee, 2013. Statement of Principles and Practices for Arctic Data Management*: <https://www.iasc.info/data-observations/iasc-data-statement> [↑](#footnote-ref-5)