

SAON Implementation

Introduction

This document provides detailed information about the objectives of SAON. This includes description of timelines, cooperation with external organisation and resource/funding requirements. It is a living document that will be regularly updated.

The document *SAON Strategy* describes SAON's vision, mission, guiding principle and goals.

Introduction	1
Goal 1: Creating a roadmap to well-integrated Arctic observing system.....	3
1) Conduct an inventory of national observational capacities.	3
2) Complete an assessment of adequacy of Arctic observational capacity in support of Arctic Societal Benefit Areas (SBAs).	3
Objective 1.1: Conduct an inventory of national observational capacities	4
Objective 1.2: Complete an assessment of adequacy of the Arctic observational capacity in support of Arctic Societal Benefit Areas (SBAs)	5
Objective 1.3: Provide recommendations for a roadmap for future Arctic observational capacities	6
Objective 1.4: Create opportunities to develop and implement observations in support of Arctic Societal Benefit Areas (SBAs).	7
Objective 1.5: Develop a long-term repository for relevant project deliverables – establishment of ArcticGEOSS.....	9
Goal 2: Free and ethically open access to Arctic observational data.....	11
1) Create a road map outlining the steps towards achieving a system that will facilitate access to Arctic observational data.	12
2) Advance a system to facilitate access to Arctic observational data.	12
3) Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data.....	12
Objective 2.1: Create a road map outlining the steps towards achieving a system that will facilitate access to Arctic observational data.	13
Objective 2.2: Advance a system to facilitate access to Arctic observational data	15
Objective 2.3: Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data.....	18
Goal 3: Ensuring sustainability of Arctic Observing	20
Objective 3.1: Develop a strategy for long-term financial commitment in Arctic observations .	21
Objective 3.2: Apply the strategy developed in 3.1 to advocate to funding agencies and states to ensure sustainability of Arctic observing	23
Objective 3.3: Secure funding for international SAON secretariat and operational costs	24
List of abbreviations.....	25

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 of the Arctic system.

SAON will engage and facilitate connections among the producers and end-users of Arctic observations in order to create and sustain an Arctic Observing System. In order to achieve this goal, SAON believes that it is essential for participating parties to adopt a community-endorsed framework. The International Arctic Observations Assessment Framework¹, developed in partnership with SAON, provides such a starting point. SAON's role in further developing and implementing this framework will be to help to identify critical observations, products, and services that are relevant to the Arctic Observations *value tree*². A holistic benefit analysis can then be used to assess the responsiveness of current Observing System and identify potential expansions. The results of this analysis will be central to the creation of a roadmap to well-integrated Arctic observing that is responsive to Societal Benefit Areas. This roadmap will also be used to identify funding sources to support infrastructure required for sustaining or adding new observational capabilities as well as technological innovations to improve observation capacity.

SAON will collaborate closely with its partners and other prominent Arctic and international organisations as well as with the Arctic Council Permanent Participants to find synergies and joint activities to avoid overlapping efforts to achieve Goal 1³.

Goal 1 has five objectives:

- 1) Conduct an inventory of national observational capacities.
- 2) Complete an assessment of adequacy of Arctic observational capacity in support of Arctic Societal Benefit Areas (SBAs).
- 3) Provide recommendations for a roadmap for future Arctic observational capacities.
- 4) Create opportunities to develop and implement observations in support of Arctic Societal Benefit Areas (SBAs).
- 5) Develop a long-term repository for relevant project deliverables.

¹ <https://www.arcticobserving.org/images/pdf/misc/STPI-SAON-International-Arctic-Observations-Framework-Report-2017.pdf>

² 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. For more information about the *value tree* concept, see the source under footnote 2)

³ SAON partners: <https://www.arcticobserving.org/partners>

Objective 1.1: Conduct an inventory of national observational capacities

Description: Develop an on-going inventory of national capacities in terms of both long- and short-term observations and monitoring, science/implementation plans, and investment strategies. Information about contributing networks already integrated internationally (e.g. WMO WIGOS) will also be invited for the inventory. The purpose of the inventory is to give the countries an overview of the current observational capacities - including the list of specific Arctic Societal Benefit Areas they are targeting – to allow identification of gaps and overlaps to be addressed at regional, national or international level. The information will be gathered through national focal points, partner organizations and observing networks and maintained in an open database of - and gateway to - all Arctic observing activities.

Urgency: High

Timelines: 2018-2020. Requirements and prototypes to be finalised in 2018.

Lead: SAON CON

Tasks:

- SAON CON will lead the coordination of the inventory, together with the national organisations/offices.
- Each country will establish a national SAON organisation/office/contact point to gather information and report on capacity and monitoring efforts. SAON will facilitate the establishment of national organisations/offices/contact points by providing suggestions for ToR and relevant membership, and by providing examples on different organizational models.
- Partner organizations contributing their observing networks to SAON will also facilitate the provision of relevant information to the Inventory.
- Observing networks will provide input and information on the observations and targeted applications.
- The Atlas of Community Based Monitoring (CBM Atlas) will be utilized and recognised in the inventory. Other appropriate tools such as, e.g., the Arctic Adaptation Exchange Portal can also be utilized.
- The inventory will be compiled and maintained by the SAON Secretariat.
- Board will monitor the development of this objective and give feedback.

Outreach: Inventory will be open for utilization on the SAON web site.

Resources and funding: In-kind contributions from nations, networks, and organisations. In the early phases EU-PolarNet inventory work is a contribution to this activity.

Goal Create opportunities to develop and implement observations in support of Arctic Societal Benefit Areas (SBAs).

1) Develop a long-term repository for relevant project deliverables.

Objective 1.2: Complete an assessment of adequacy of the Arctic observational capacity in support of Arctic Societal Benefit Areas (SBAs)

Description: The assessment will, building upon the inventory (Objective 1.1), to identify infrastructure/technology gaps where the observational needs in support of SBAs are not yet covered by the existing systems, not appropriate or not cost effective. The goal is to optimize the observing system while it will evolve, building on existing infrastructure with consideration of cost effectiveness and SAON priorities.

Urgency: High

Timelines: 2018-2021.

Lead: SAON CON

Tasks:

- SAON CON will lead the coordination of this activity.
- A task force or committee is needed to retrieve information from the inventory for analysis and produces the resulting assessment and adequacy report together with the SAON Secretariat.
- The observing networks will participate in reaching these objectives by providing input and information for the assessment work, including on the impact of observing systems on SBAs, and feedback on the resulting report.
- EU-PolarNet will provide the first gap analysis in 2017 as a part of their project outcomes that can be utilized in the assessment for further analysis and updates.
- The Board will monitor the development of this activity and provide feedback.

Outreach: Assessment report. Workshop(s) for SAON national offices and SAON networks during the assessment process. Meeting/event presenting the assessment results and launching the report.

Resources and funding: Funding for 1-2 years will be sought from relevant international funding body.

Objective 1.3: Provide recommendations for a roadmap for future Arctic observational capacities

Description: The purpose of this objective is to identify and provide recommendations on future needs for networks, observing activities, technology and infrastructures by:

1. Providing recommendations for closing gaps or extensions to the integrated Arctic-observing system
2. Engaging potential operators and funding agencies to respond to the gaps and to sustain a well-integrated long-term observing capacity

Urgency: 1) high, 2) medium.

Timelines: 2020-2022

- Recommendation work in 2020- 2022. INTAROS will provide its gap analysis in 2022; this will be utilized to fine-tune and complete the recommendations.
- The potential operators and funding agencies should be engaged throughout the process to raise awareness and obtain feedback.

Board: Lead

Committees: Provide input. Respond/react/advocate.

Networks: Provide input. Respond/react/advocate.

National SAON organisations: Advocate and create awareness about the recommendations work on the national level (national observing entities, infrastructures, national funding bodies) and provide information back to the international SAON level.

Outreach: Recommendations report. Workshops and meetings to engage potential operators and funding agencies.

Resources and funding: Seek funding for 1-2 years in 2020-2022 to develop the recommendations, arrange associated workshops and meetings, and prepare the report.

Objective 1.4: Create opportunities to develop and implement observations in support of Arctic Societal Benefit Areas (SBAs).

Description: SAON will engage in global, regional and local initiatives, networks and organisations aiming to utilise arctic observations to gain societal benefits and aid sustainable observing technology development.

SAON will be facilitating the development of Arctic Societal Benefit Areas (SBAs), and creating awareness on how to utilise arctic observations and derived information to create societal benefits in the arctic regions and beyond, e.g. in the fields of Environmental Issues, Societal Issues, Economic issues, and Cultural Issues.

Secondly, SAON will reach towards the objective by organising technology fora in suitable events to support sustainable and innovative solutions and observation technology development in the Arctic. In the technology fora, the atmospheric, ocean, terrestrial and other domains can share knowhow and best practises on the Arctic observation technology and its implications, and innovate towards future developments. The gap analysis and recommendations obtained in Objectives 1.2 and 1.3. can be used to identify areas where the technology push is most needed for closing gaps or create extensions to reach the integrated Arctic-observing system.

Thirdly, SAON will organise a forum for bringing together the arctic observing community (organisations, networks, projects) and potential funding bodies to discuss how to secure sustained arctic observing networks and ensure future developments, and how to channel funding to leverage societal benefits from the arctic observations and infrastructures.

Urgency: Medium

Timeline: 2018-2022

Tasks:

- SAON CON will provide observation source information to the physical atmosphere and ocean related value tree analysis, starting in 2017 under the Finland AC chairmanship and delivered by 2019.
- SAON CON will arrange, with support from the SAON Secretariat, the technology and funding fora during suitable events, e.g. Arctic Observing Summit.

Board: Will monitor the development and provide feedback. Attendance to technology and funding for events.

Networks: Provide observation source information when needed. Participate in the technology and funding fora events.

National SAON organisations: Provide observation source information. Participate in technology and funding fora events.

Outreach: Technology and funding forum events to be marketed, news on results, reports. Arctic Observing Summit to arrange the events and to communicate the results.

Resources and funding: Resources from volunteering participants, national support for participation.

Objective 1.5: Develop a long-term repository for relevant project deliverables – establishment of ArcticGEOSS

Description: SAON offers to host a long-term repository for relevant project deliverables (e.g. inventories, workshop results, reports). The SAON web site will include element called 'Arctic Archive' for such outputs. If data volume would become a challenge, the Arctic GEOSS data centre can be used for this.

Urgency: Low

Timelines: 2018-2019

Board: None.

Committees: None. Should be informed about the opportunity to store deliverables.

Networks: None. Should be informed about the opportunity to store deliverables.

National SAON organisations: None. Should be informed about the opportunity to store deliverables.

Relationship with international/other organisations: None.

Outreach: Inform relevant projects.

Resources and funding: SAON Secretariat.



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Goal 2: Free and ethically open access to Arctic observational data

One of SAON's guiding principles is to promote ethically free and open access⁴ to ethically-collected data. 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.

A review of relevant Arctic data management efforts and results have guided the SAON vision for an open, interconnected, international system for sharing data across disciplines, domains, and cultures. Requirements and characteristics of such a system 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;
- Many linked catalogues fostering 'single window' search;
- High quality, ethically open data sustainably preserved over time;
- 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); and
- Cost effective, maximizing the investments made to develop and maintain the system.

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

Goal 2 has three objectives:

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>

- 1) Create a road map outlining the steps towards achieving a system that will facilitate access to Arctic observational data.
- 2) Advance a system to facilitate access to Arctic observational data.
- 3) Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data.

Objective 2.1: Create a road map outlining the steps towards achieving a system that will facilitate access to Arctic observational data.

Description: Facilitating the emergence of a world-wide system requires an understanding of the existing and emerging technical and human “nodes” in the system. This enhanced understanding will underpin the activities necessary to enhance cooperation and the establishment of the global network.

Urgency: High

Activities: 2017 - 2019

- Historical: In late 2014, the IASC-SAON Arctic Data Committee (ADC) established the “Mapping the Arctic Data Ecosystem” initiative. In late 2016, the ADC collaborated with the Belmont Forum funded Pan-Arctic Options Project to establish additional resources for this effort. In the middle of 2017, a postdoctoral fellow was hired to dedicate time to this effort. The Pan-Arctic Options component will contribute to the ADC effort. Initial focus of this effort will be on analysing the corpus of the Arctic Council working groups and the connected data resources and infrastructures.
- Additional activities through ADC, project outputs, national efforts will complement the Pan-Arctic Options results..
- Ongoing: In addition to Arctic Data Ecosystem efforts, there are a number of projects and programs producing or discussing the production of relevant materials. Most notable are the Horizon 2020 funded EU-PolarNet and INTAROS projects. Additionally, IARPC in the U.S. and the Canadian Consortium on Arctic Data Interoperability are proposing to do work focused on their national systems.
- Last quarter of 2017, propose initial technical model for collecting and disseminating data about systems at different scales so that they can be used together.
- Quarter 1 and Quarter 2 of 2018. Perform initial publication and analysis of system data combining various sources (e.g. Arctic Data E-CoSystem, EU-PolarNet, and other interested partners). Present results at POLAR 2018 conference.
- Quarter 3 of 2018. Iterate through analysis process; work with global community to establish model to sustain the (eco)system mapping efforts over time.
- Quarter 4 of 2018. If possible, present results at Second ASM as part of broader SAON and partner submission.
- 2019. Continue to populate and grow system capabilities. Provide analytical results to global efforts to enhance collaboration, cooperation etc.

Board: *(To be completed)*

Committees:

- ADC: Convening role
- CON: Contributing role as connection to the observing systems

Networks: Leadership, as central partners

National SAON organisations: Leadership, as central partners (Note: This could be challenging in short term, but may improve with effectiveness of initiative)

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: Leadership, as central partners

Relationship with international/other organisations: Currently there are many initiatives that are funded or conceptualized which are or should be engaging at a global level. To achieve the initial goals, the following initiatives should engage at minimum global efforts: Global Cryosphere Watch (GCW)/YOPP, GOOS, ICES, RDA; Regional initiatives such as: Arctic Portal, University of the Arctic, SCADM, SOOS, EU-PolarNet, INTAROS as part of the new EU Arctic Cluster, CAFFs Arctic Biodiversity Data Service (ABDS), ESA Arctic, SIOS Data Management System; GEO Cold Regions Initiative, Polar View, Arctic Spatial Data Infrastructure; National institutions such as IARPC, Canadian Consortium for Arctic Data Interoperability; Asian partners (e.g Polar Research Institute of China, National Institute for Polar Research in Japan, KOPRI Korea, Russian partners etc.), SIOS; Private industry (Google, World Ocean Council (WOC), IOGP); Academia, including University of the Arctic

Outreach: SAON, IASC, Arctic Council, Arctic Portal, ARCUS, European Polar Board, EU Arctic Cluster, Arctic Observing Summit.

Resources and funding: i) Leverage existing funding (e.g. Arctic Data E-CoSystem, ADC member contributions etc.)

Objective 2.2: Advance a system to facilitate access to Arctic observational data

Description: Advancing a system to facilitate access to Arctic observational data will require global cooperation. There are many projects and programs across a range of scales that are active in polar data management and stewardship. Many of those initiatives now have resources available and are making progress towards an envisioned connected, interoperable polar data system. The international polar data community is eager to improve cooperation and coordination of their efforts. SAON can play a central role in bringing together the actors who will build the system.

Urgency: High

Activities: 2017-2019

- In the spring of 2018, representatives from a wide range of different active programs and projects will meet to focus on coordination of efforts to facilitate data access. This meeting will complement past workshops and fora (e.g. IPY, Polar Data Forums etc.) that have been effective in defining important community challenges and technical issues. The focus of the planned meeting will be to generate detailed plans on how best to mobilize activities to develop a particular international data sharing case study. A decision on the nature of the case study will be made during the fall of 2017.
- Historical: July 2017: proposal submitted to NSF by ADC Chair Peter Pulsifer, Dr. Colleen Strawhacker, and Prof. Maribeth Murray. Grant awarded. Project start date 1 October 2017.
- September 16-18, 2017: ADC-SCADM meeting: Set foundation of concept and consulted with members of the community on value of the workshop and planning details.
- Q4 2017.
 - Confirm preliminary co-organizers of the spring 2018 workshop. For example, Global Cryosphere Watch, EU Arctic Cluster, Polar View GEOCRI, Arctic Spatial Data Infrastructure have all confirmed intention to co-organize.
 - Establish clear model for continued engagement of Permanent Participants.
 - Confirm process to: i) confirm the focus of the “case study” and the initial contributing partners; this will consider societal relevance, appropriateness of scope, existing capacity etc. ; ii) establish a model that will allow for sufficient representation at the workshop while maintaining a group size that is small enough to remain productive ; iii) confirm the schedule, location and other logistical details of the workshop.

- Start the process of obtaining work plans and relevant resource levels (funds, human resources, infrastructure) from each project. These will be analysed by the organizing team to establish opportunities for synergy, overlap, gaps etc. across projects/programs.
- Start initial technical discussions to establish high level architecture (e.g. foundational protocols, services etc.)
- December 2017: present on workshop goals, plans etc. at Arctic Change conference; community engagement, outreach.
- Q1 2018
 - Iterate through process started in Q4 2017
 - January 2018: present at ISAR-5 Conference, Tokyo, Japan; community engagement and outreach (particularly valuable for engaging the Asian community).
- Q2 2018 - 22-24 May 2018 (Boulder): Main Workshop.
 - Detailed work planning and project “sign off” - associated with specific issues identified by community through previous activities
 - Confirmation of system architecture
 - Confirmation of key overacting priorities based on other activities (EU-PolarNet, Interoperability workshop, INTAROS, etc.)
- POLAR 2018, Arctic Observing Summit, June 2018, Davos, Switzerland:
 - Hold ½ - 1 day meeting to share results of the the May workshop. Room has been reserved.
 - Reporting results of workshop at POLAR conference and AOS; consultation, feedback, visibility
 - Community engagement, outreach.

2018 Berlin Arctic Science Ministerial;

- Present a collectively-developed road map and architecture outlining a world-wide system that will provide researchers and others with access to a significant set of Arctic data related to a particular case study.
 - A coordinated, integrated work plan identifying goals and objectives.
 - Will include hard infrastructure as well as “soft” models establishing societal value, a related viable business model, and value to researchers and others.
- Present a representation of the Arctic data system (Results of Objective 2.1)

Board: Provide support in planning efforts. Review of proposed process, outreach and community engagement, review of outcomes.

Committees:

- ADC: Convening role
- CON: Contributing role as connection to the observing systems

Networks: Leadership, as central partners

National SAON organisations: Leadership, as central partners

Relationship with international/other organisations: As for 2.1. The meeting will be co-led and co-organized by key polar data projects and programs. Currently, organizers include: IASC/SAON Arctic data Committee; SCAR Standing Committee on Antarctic Data Management; Southern Ocean Observing System; Global Cryosphere Watch and related WMO activities; Polar View; Arctic Spatial Data Infrastructure; EU Arctic Cluster including 8 current EU funded projects; SIOS Data Management System; GEO Cold Regions Initiative; Canadian Polar Data Workshop Network; Canadian Consortium on Arctic Data Interoperability; representatives from the Arctic Social Science Community; Research Data Alliance. One International Indigenous organization, Inuit Circumpolar Council, was part of the initial conceptualization of project in June of 2017 and more input is needed and is actively being sought from Indigenous organizations.

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: Leadership, as central partners

Outreach: ARCUS, IASC, European Polar Board, EU Initiatives

Resources and funding: i) Leverage existing funding; ii) Leverage existing NSF workshop grant; iii) ESA; iv) Others.

Objective 2.3: Establish a persistent consortium of organizations to oversee the development of a sustainable, world-wide system for access to all Arctic data.

Description: The initial results of the Arctic Data Committee's Mapping the Arctic Data Ecosystem initiative and a series of other related meetings and activities confirm there are many stakeholders who will be part of developing a world-wide system for access to all Arctic data (cf. Pulsifer talk on 4 October at <https://www.arcus.org/research-seminar-series/archive>). Additionally, developing such a system will require ongoing effort of many years. Thus, it is critical for SAON to work cooperatively to establish a persistent consortium of organisations to oversee this development. In recent years, the Arctic Data Committee has consistently taken a leadership role in coordinating community activities. Moving forward, this must continue and expand to ensure that all stakeholders are represented in the process.

A primary goal under Objective 2.1 will be to identify the stakeholders who need to be part of the process. A primary goal under Objective 2.3 will be to establish a persistent global consortium of organizations and a process to oversee the development of a world-wide system for access to all Arctic data.

Urgency: High

Timelines:

- The process has already started through the activities of the Arctic Data Committee and a number of other organizations.
- Foundational work will continue through fall 2018 as part of Objective 2.2
- Ongoing

Board: Extensive guidance and engagement in establishing persistent body.

Committees:

- ADC: Convening role
- CON: Contributing role as connection to the observing systems

Networks: Leadership, as central partners

National SAON organisations: Leadership, as central partners (Note: This could be challenging in short term, but may improve with effectiveness of initiative)

Relationship with international/other organisations: As for 2.1. The establishment of a persistent consortium will be co-led and co-organized by key polar data projects and programs and ideally the Permanent Participants of the Arctic Council. Currently,, organizers include: IASC/SAON Arctic data Committee; Arctic Portal; University of

the Arctic; SCAR Standing Committee on Antarctic Data Management; Southern Ocean Observing System; Global Cryosphere Watch and related WMO activities; Polar View; Arctic Spatial Data Infrastructure; EU Arctic Cluster including 8 current EU funded projects; SIOS Data Management System; GEO Cold Regions Initiative; Canadian Polar Data Workshop Network; Canadian Consortium on Arctic Data Interoperability; representatives from the Arctic Social Science Community; Research Data Alliance. One International Indigenous organization, Inuit Circumpolar Council, was part of the initial conceptualization of project in June of 2017 and more input is needed and is actively being sought from Indigenous organizations.

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: Leadership, as central partners (Note: Follows also from Permanent Participants' representation on ADC)

Outreach: IASC, SAON, ARCUS, IARPC, European Polar Board, EU Initiatives, many others.

Resources and funding: i) Leverage existing funding; ii) Leverage existing NSF workshop grant; iii) ESA; iv) Others.

Goal 3: 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 are supported by all relevant stakeholders over the long term.

Goal 3 has three objectives:

- 1) Develop a strategy for long-term financial commitment in Arctic observations;
- 2) Apply the strategy developed in 3.1 to advocate to funding agencies and states to ensure sustainability of Arctic observing; and
- 3) Secure funding for international SAON secretariat and operational costs

Objective 3.1: Develop a strategy for long-term financial commitment in Arctic observations

Description:

SAON has the mandate to mobilize new/additional resources to meet observing needs as well as promote cooperation and coordination among existing initiatives. SAON shall develop a short and concise engagement strategy to ensure long term support and engagement for Arctic Observations. The strategy will address:

- A short list of key rationales for why long term – sustained – observation is needed (including examples of successful sectors, e.g. – remote sensing, meteorology – and where the advantages are obvious, such as community-based monitoring.)
- A set of arguments why existing observation system benefits from cooperation, infrastructure and data sharing (eg quality of data, necessity of circumpolar coverage, cost saving etc.)
- Create an overview of observation strategies of existing actors and identify places where cooperation would help
- Create an overview of observation strategies to identify gaps
- A discussion on the challenge of national priorities vs circumpolar coordination priorities, and assessment of the benefits of Arctic coordination for the respective national observation priorities
- A summary with main societal benefits of long-term monitoring in the Arctic
- A list of key actors that would benefit from improved observation cooperation – with concrete ideas on advantages
- A list of agencies/organizations that can be approached for support
- A break-down of costs needed for which activities.

Existing meetings and projects can be used to gather information that support this objective. Examples are the Arctic Science Ministerial in 2018 and the IMOBAR⁵ project.

Urgency: High

⁵ The Impact Assessment on a Long-Term Investment on Arctic Observations (IMOBAR) is a European Commission initiative: 'It provides the elements to build the "business case" for sustaining in the long-term Arctic observations (...)'. The work is meant to be finalised in 2018.

Timelines: 2018-19. The strategy will be revised according to needs to ensure that the goal of sustained Arctic observing can be achieved.

Board: Lead and appoint a task force for rapid implementation

Committees: Identify and contribute information

Networks: Contribute and identify targets

National SAON organisations: National/regional nodes must be established within 2018. Should nominate experts and contribute to the implementation

Relationship with international/other organisations: Statements of support of the importance of the activities of SAON. Could involve in-kind support.

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: PP's will have experts in the task force

Outreach: To be determined as part of the strategy

Resources and funding: Board with support from the Secretariat

Objective 3.2: Apply the strategy developed in 3.1 to advocate to funding agencies and states to ensure sustainability of Arctic observing

Description:

SAON has the mandate to mobilize new/additional resources to meet observing needs. SAON will play the liaison/advocate role between the research communities and policy makers.

Develop a prioritized action plan in 2018 – 2019 after Objective 3.1 is finished that targets specific gaps and work with relevant funders to address those.

Urgency: High

Timelines: An ongoing and long-term activity central to the SAON mission with immediate actions to be implemented according to the outcome of Objective 3.1.

Board: The SAON member nations (Board members) will name the individual responsible to provide essential information and provide required resources.

Committees: None

Networks: Provide information of costs of ongoing and projected activities. Provide input to planning

National SAON organisations: The SAON member nations (Board members) will name the individual responsible to provide essential information and provide required resources. Review plans on national support to implement SAON objectives.

Relationship with international/other organisations: Arctic Council Working Groups, ESA, GEO, IASC, ICES, WMO, and others as identified in the outcomes of 3.1.

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: To be part of the activities.

Outreach: Success stories and engagement messages to be contributed for SAON's outreach activities. Acknowledge the contributions of supporting entities.

Resources and funding: Outlined in objective 3.1.

Objective 3.3: Secure funding for international SAON secretariat and operational costs

Description:

SAON as a networked organisation will need a minimum core capacity to ensure progress and implementation of the SAON Strategy.

Member countries are required to contribute to the operational costs of the Secretariat.

Urgency: High

Timelines: Funding for SAON secretariat must be secured during 2018.

Board: Has established task force in 2017 to address the issue.

Committees: None.

Networks: None.

National SAON organisations: The SAON member nations (Board members) will name the individual responsible to provide essential information and provide required resources. Board members should facilitate contact with their appropriate national funding agencies.

Relationship with international/other organisations: Board members from organisations will facilitate the contact with their respective organisations.

Involvement of Permanent Participants/Indigenous organisations; Indigenous/Local knowledge: PP organizations to appoint members to the task force.

Outreach: Acknowledge the contributions of supporting entities.

Resources and funding: Board member contribution

List of abbreviations

ABDS	Arctic Biodiversity Data Service
AMAP	Arctic Monitoring and Assessment Programme
AP	Arctic Portal
ASDI	Arctic Spatial Data Infrastructure
CAFF	Conservation of the Arctic Flora and Fauna
CCADI	Canadian Consortium for Arctic Data Interoperability
ESA	European Space Agency
GCW	Global Cryosphere Watch
GEO	Group on Earth Observations
GEOCRI	GEO Cold Regions Initiative
GOOS	Global Ocean Observing System
IARPC	Interagency Arctic Research Policy Committee
IOGP	International Association of Oil & Gas Producers
ICES	International Council for the Exploration of the Sea
INTAROS	Integrated Arctic Observation System
KOPRI	Korea Polar Research Institute
NIPR	National Institute for Polar Research (Japan)
PRIC	Polar Research Institute of China
RDA	Research Data Alliance
SCAR	The Scientific Committee on Antarctic Research
SCADM	Standing Committee on Antarctic Data Management
SIOS	Svalbard Integrated Arctic Earth Observing System
SOOS	Southern Ocean Observing System
UArctic	University of the Arctic
WOC	World Ocean Council
YOPP	Year of Polar Prediction