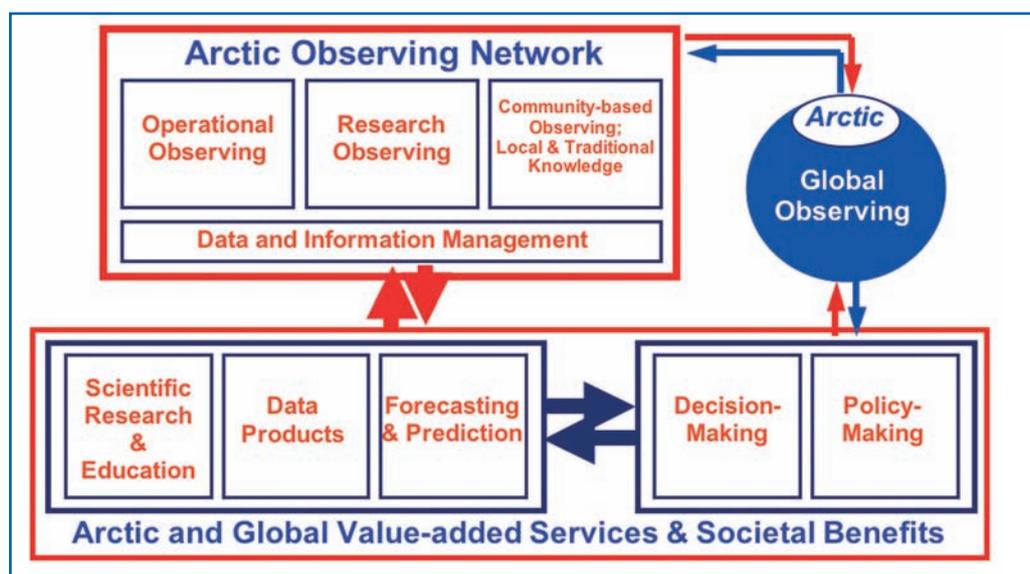


## The GEOSS Standards and Interoperability Registry

### Description

The Arctic Observing Network (AON) is an activity being conducted by a partnership among agencies of the U.S. government, their academic collaborators and Arctic residents. The AON was launched in 2007 as a part of the International Polar Year (IPY) and will extend for several years beyond the end of the IPY in March 2009. The AON partners intend that some AON components will be continued for a significant period of time as a “legacy” of the IPY; an Implementation Plan for the legacy effort is being prepared under the auspices of the US Inter-agency Research Policy Committee.

Conceptual diagram of AON and the flows and exchanges of information that represent its contribution to value-added services and societal benefits of regional and global importance, and comprehensive observation of the Earth system.



Conceptual diagram of AON and the flows and exchanges of information that represent its contribution to value-added services and societal benefits of regional and global importance, and comprehensive observation of the Earth system.

The AON partners recognize that an international approach is required to achieve the long-term goals of AON, and efforts are underway among several international Arctic science organizations to create a mechanism for an international effort. The international effort is called Sustained Arctic Observing Networks (SAON) and is also being conducted as a project of the IPY. The objective of SAON is to develop a set of recommendations to governments and international Arctic organizations leading to implementation of a coordinated multi-national Arctic Observing Network that will continue in the post-IPY period to support societal goals. SAON will accomplish its objective by conducting a series of three international workshops, starting in November 2007 in Stockholm. A second workshop will be held in Canada in spring 2008 and the final workshop in Finland in fall 2008. These workshops will focus sequentially on three questions:

1. Are current Arctic observing and data and information management activities sufficient to meet users' needs?
2. How will Arctic observing and data and information management activities be coordinated and sustained over the long term? and
3. What actions should be recommended to Arctic governments and international organizations to ensure realization of sustained and coordinated Arctic observations and data and information management?

## Added Value

All of the Arctic countries are members of GEO and all are already engaged in some level of environmental observations in the Arctic. GEO will provide an already-agreed upon framework for organizing an international approach to environmental observations in the Arctic region. The scope of GEO is broad and allows a multi-media, multi-disciplinary approach to environmental observing, which is essential for the Arctic where there are immediate links and feedbacks between atmosphere and surface, land and ocean, physics and biology, and environment and human society. GEO will have the option of embracing a nascent regional observing capability that should be a highlight among GEO's long-term accomplishments.

## Relevance to GEO

The AON will contribute to many existing GEO tasks as defined in the GEO 2007-2009 Work Plan.

The most relevant tasks include:

- CL-06-03 Key Terrestrial Observations for Climate
- CL-06-05 GEOSS IPY Contribution
- CL-06-06 Global Ocean Observing System
- WA-06-05 In-situ Water Cycle Monitoring
- EC-06-01 Integrated Global Carbon Observation
- EC-06-07 Regional Networks for Ecosystems
- EC-07-01 Global Ecosystem Observation and Monitoring Network
- BI-07-01 Biodiversity Observation Network
- US-06-01 Identify Priorities and Synergies Between SBAs
- DA-06-04 Data, Metadata, and Products Harmonisation

## Participants

The international expression of AON will include the eight Arctic countries (Iceland, Denmark/Greenland/Faroes, Finland, Sweden, Norway, Russia, Canada, United States) and other countries having interests in Arctic observations (e.g., United Kingdom, Germany, France, Poland, Spain, China, Korea, Japan).

The Arctic Council and several international Arctic science organizations are involved in the initiation of the international AON.

## Current Status and Next Steps

Within the U.S., the National Science Foundation (NSF) has recently funded 21 new Arctic observing projects as part of AON and the IPY. Several other U.S. agencies (e.g., the National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS) and the National Aeronautics and Space Administration (NASA)) are continuing several Arctic observation projects that are candidates for inclusion in the AON. These and other agencies have agreed to prepare an AON Implementation Plan that will define the initial state of an observing network that meets U.S. and international needs in the Arctic region. This plan will be available in early 2008.

Simultaneously, through the international SAON process, scientists representing many agencies and international organizations are developing a set of recommendations that, if implemented, would result in the formation of a coordinated and sustained set of observations in the Arctic region focused on meeting needs of Arctic residents and decision- and policy-makers at all levels. These recommendations will be available as a product of the IPY in spring 2009.

Both efforts will identify existing observing efforts that are likely to be continued, will evaluate the most important gaps, and will suggest ways that continued observations can be conducted on an international basis in well coordinated and efficient manner.