Summary of INTAROS Stakeholder workshop 05 May 2017

This first INTAROS Stakeholder workshop was organised by EuroGOOS Office in its premises in Avenue Louise 231, 1050 Brussels. Title of the workshop was **"Building long term observing systems in the Arctic – requirements and challenges".** The objective of the workshop was to review and discuss the requirements for observational data in the Arctic across thematic areas such as 1) Atmosphere, 2) Ocean and seafloor, 3) Sea ice, 4) Marine Ecosystem, 5) Terrestrial data, 6) Glaciology, 7) Natural hazards, and 8) Community-based monitoring.

Furthermore, the workshop elaborated on ways ahead to develop and operate long-term observing systems. Satellite earth observation data, especially through meteorological missions and the new Copernicus programme, has secured long-term funding and is therefore relative sustainable. However, most of the in situ data collected in the Arctic are funded by research projects with duration of a few years and are therefore not necessarily sustainable. The workshop is the first in a series of events under INTAROS to develop a Roadmap for building and maintaining sustainable Arctic observing systems. Key challenges that INTAROS will address during the project period are:

(1) Coordination and collaboration between data providers and stakeholders in the pan-Arctic region in order to better use existing systems and resources

(2) Improvement of the observing platforms and sensors, filling of gaps in the observing network and facilitate for year-round operation

(3) Data sampling, transmission, calibration, processing, archiving and retrieval of required variables and building distributed and connected databases

(4) How to develop sustainability of the observing systems

The workshop had about 30 invited attendees including 15 speakers who presented status of observing systems representing different scientific disciplines and application areas.

***Christine Daae Olseng*** from Research Council of Norway, chair of SAON, presented an overview of Sustainable Arctic Observation Network (SAON). The mission of SAON as a high-level organsation is to support and strengthen the development of multinational engagement for sustained and coordinated pan-Arctic observing and data sharing systems that serve societal needs, particularly related to environmental, social, economic and cultural issues.

***Lars-Otto Reiersen,*** from AMAP secretariat, presented a history of main work conducted by the Arctic Monitoring and Assessment Programme from 1991 to present. AMAP is to a large extent based on funding from national programmes and international monitoring network. AMAP has played an important role to obtain EU-funding for Arctic observing systems, which is the background for INTAROS.

***Henrik Steen Andersen*** from European Environment Agency, presented the role EEA as coordinator of the in situ component of the Copernicus Marine Services. Copernicus is a large European programme for monitoring and forecasting of the Earths environment, with focus on satellite Earth Observation data and modeling services: The in situ component is very limited and mainly based on national efforts and research projects.

***Nicole Biebow***, from AWI, is the leader of the EU-PolarNET project, a coordination action for European Polar research. Nicole presented results of stakeholder surveys and workshops to identify the stakeholders in the Arctic and their needs for observing systems.

***Øystein Godøy,*** from Met Norway, presented status of Arctic data repositories and interoperability, where there are significant challenges and barriers to build an integrated Arctic Observing System that can manage distributed data across scientific disciplines and thematic application areas

***Lisbeth Iversen,*** from NERSC, presented an example of ongoing studies on community based observing systems where requirements are based on local needs and challenges. In Longyearbyen, it is particularly snow avalanches and landslides that are most important to monitor and predict.

***Thomas Jung,*** AWI, presented requirements for observations under the Year of Polar Prediction (YOPP) where the goal is to improve the prediction capabilities through enhanced modeling activities, where the EU APPLICATE project plays a key role.

***Cathrine Lund Myhre*** from NILU presented status of research infrastructure and networks in the Arctic for observation of atmospheric composition for climate and air quality monitoring.

***Antonio Reppucci*** from Mercator Ocean presented Copernicus Marine Environmental Monitoring Service (CMEMS) and the specific requirements for observations in the Polar regions. The Arctic component of CMEMS forecasting system is developed at NERSC.

***Inigo Martinez*** from ICES presented the Arctic perspective of the International Council for Exploration of the Sea (ICES). ICES have members from 20 countries and is seeking integrated observations from the Arctic where data on oceanography, ecosystems and vulnerability factors are needed.

***Michael Zemp*** from the World Glagiology Monitoring Service present needs and challenges related to long-term observation of glaciers and ice sheets in the Polar regions and world-wide.

***Elmer Topp Jørgensen*** from Aarhus University presented INTERACT, which is a network of terrestrial platforms for research and monitoring in the Arctic and high mountains.

***Attilio Gambardella***, from the European Commission presented an overview of EU’s polar research strategy and the wider context for the INTAROS project. An important event in 2018 will be the second Arctic Science Ministerial to be organized by EU and Germany, following up the first Arctic Science Ministerial in Washington in 2016.

***Erik Buch*** from EuroGOOS, summarized the workshop and with recommendation for follow-up workshops later in the project.