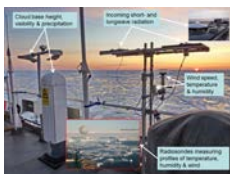


Coordinator: S. Sandven, deputy coordinator: H. Sagen, Nansen Environmental and Remote Sensing Center, Norway

WP leaders and co-leaders: E. Buch, EuroGOOS, R. Pirazzini, FMI, D. Gustavson, SMHI, A. Beszczynska-Möller, IOPAN, P. Voss, GEUS, F. Danielsen, NORDECO, L. Iversen, NERSC, P. Gonçalves, Terradue, T. Hamre, NERSC, G. Ottersen, IMR, M. Sejr, AU, D. Zona, USFD, N. Dwyer, Eurocean

Overall objective

INTAROS will build an efficient integrated Arctic Observing System (iAOS) by extending, improving and unifying existing systems in different regions of the Arctic



Observing system on icebreakers (I/B Oden)



UAV with met sensors (M. Jonassen, FMI)



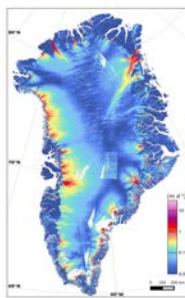
Marine terminating glacier (W. Walczowski, IOPAN)



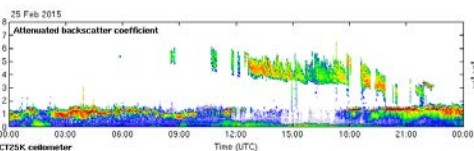
Local observers (PISUNA Photo: F. Danielsen)



Community-based observing and capacity-building (NORDECO with partners) Photo: M. Enghoff, PISUNA

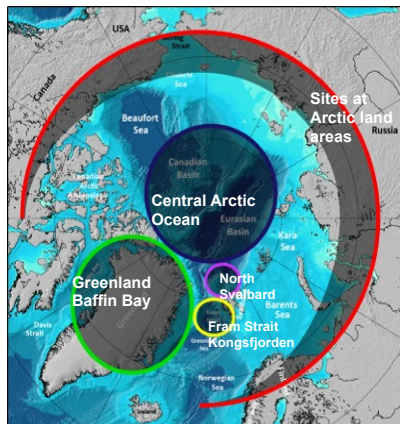


Surface velocity of the Greenland ice sheet (A. Anisimov, GEUS)



Cellometer observations of aerosols, clouds and precipitation (Ewan O'Connor, FMI)

Deployment areas for INTAROS observing systems



Surveys of atmospheric and sea ice variables with AWI aircraft (T. Vihma)



Pallas global atmosphere watch station (FMI/RV Johan Hjort in Longyearbyen (IMR)



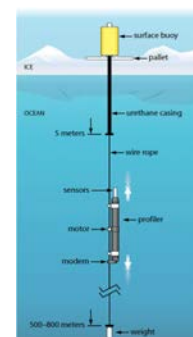
Observatory on the Greenland ice sheet – the EGRIP camp (<http://easip.org>) (Peter Voss, GEUS)



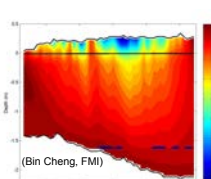
Observing station in Alaska (D. Zona, USFD)



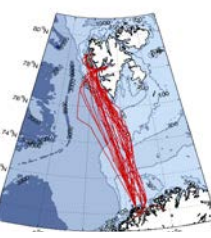
KV Svalbard in the Fram Strait



Ice-tethered platforms for measurement of ocean variables under sea ice and data transmission via Iridium (WHOI)



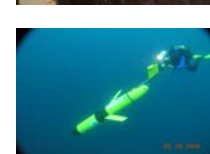
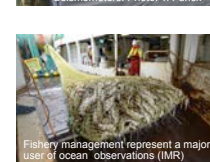
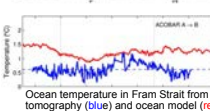
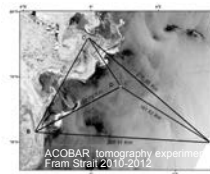
Seasonal thickness and temperature of snow and sea ice from ice mass balance buoys



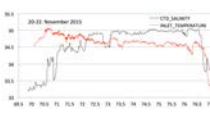
FerryBox route of MS NORBJØRN collecting data between Tromsø and Svalbard (NIVA)

Multidisciplinary

observing systems covering atmosphere, ocean, sea ice, marine ecosystems, glaciology, snow, hydrology and other land surface processes, natural hazards and community-based systems



Glider experiments in Baffin Bay (Takuvik)

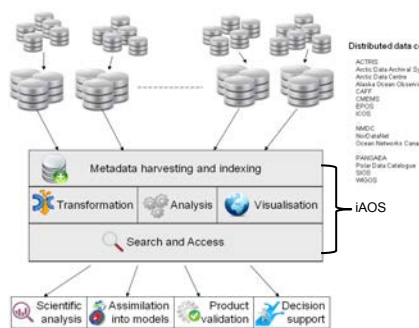


Ferrybox data from MS NORBJØRN/NIVA

Applications of iAOS towards stakeholders

- Assess the impact of improved observational sea-ice data on climate prediction by data denial experiments
- Advance ecological and environmental understanding by merging and synthesizing iAOS data through ecosystem modelling
- Provide better ice-ocean state estimates to establish background knowledge and constraints in risk assessment for Arctic operations
- Demonstrate the capabilities to integrate data from various databases in modelling using data assimilation
- Identify key processes across disciplines that govern Arctic greenhouse gas cycles and links to climate change
- Demonstrate use of iAOS for mapping of natural hazards aiming towards disaster risk reduction.
- Cross-fertilize community-based and scientific observing
- Assess the economic value and societal benefit of iAOS locally to globally through a suite of selected applications towards industry, governance, local communities and research

Data management and integration



Dissemination and outreach

- Raise awareness of Arctic challenges for the public in general and scientific communities
- Improve understanding of Arctic among key stakeholder communities
- Train the next generation of scientists and policy makers

Impact

- Increase the temporal and geographic coverage of observational data to improve the assessment and prediction of Arctic changes
- Add capacity to existing in situ observing systems by including new sensors
- Exploit and enhance established research infrastructures across the Pan-Arctic region
- Improve inter-operability of distributed databases
- Enhance data provision for the Copernicus services
- Strengthen the Sustaining Arctic Observing Networks (SAON) process
- Contribute to GEO Cold Region Initiative, Transatlantic Ocean Research Alliance (TORA), Year of Polar Prediction (YOPP), International Arctic Systems for Observing the Atmosphere (IASOA) and Global Cryosphere Watch
- Improved information for decision-makers
- Support Arctic Council and its working groups
- Support EU's Arctic strategy

Consortium members

Norway: NERSC, UIB, IMR, UNIS, NIVA, NORUT, DNV-GL
Greenland/Denmark: GEUS, DTU, GINR, NORDECO, Aarhus University
Sweden: SMHI, Stockholm University
Finland: FMI, University of Helsinki
Germany: AWI, Univ Hamburg, Univ Bremen, MPG, GFZ
UK: University of Sheffield

Poland: IOPAN, IGPAN, Univ Slaski
France: CNRS, Ifremer, ARMINES
Spain: Polyt. Univ Madrid, Barcelona CS
Portugal: Eurocean
Belgium: EuroGOOS AISBL
Ireland: Maynooth University
Italy: Terradue, JRC
Russia: RIHMI-WDC, NIERSC

USA: UAF, SIO, WHOI, JPL
Canada: U Laval, ONC
China: RAD, NMEFC, PRIC
Japan: NIPR
South Korea: KOPRI

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