

INTAROS Integrated Arctic Observation System

Pedro Gonçalves, Terradue Living Planet Symposium, Milan 2019 EC and ESA collaboration: Polar Science Challenges and future activities





INTAROS Integrated Arctic Observations System

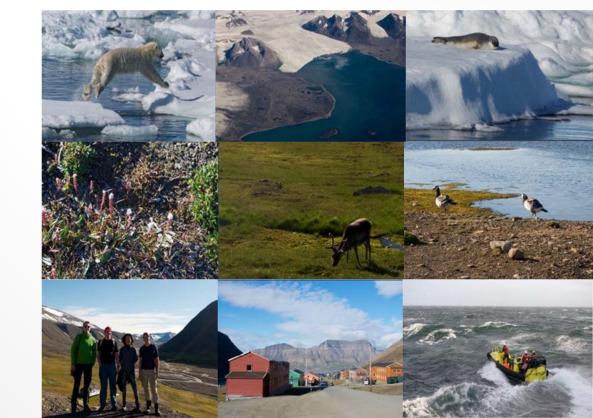
Arctic Observing system funded by H2020-BG-09-2016 for atmosphere, ocean, cryosphere,

terrestrial sciences and local communities

Collaborative effort:

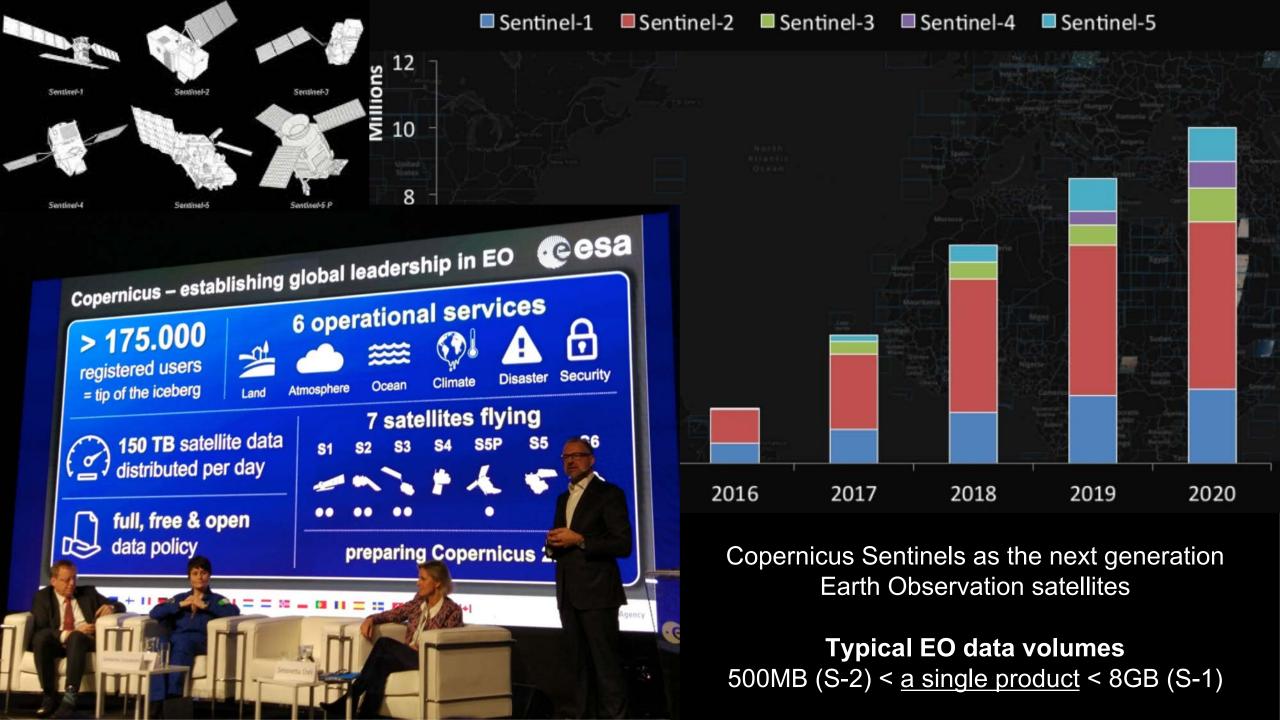
- 200+ scientists
- 49+ organisations
- 20 countries





 Long-term Arctic monitoring rests on a combination of satellite information and in situ observations





INTAROS Field activities in 2017-2018

Temperature profiles of the soil to observe thaw depth in Alaska sites (USFD and Univ. Exeter)

Observing meteorological, snow and soil data from 4 location in Eastern Canadian Arctic by CNRS Takuvik

Oceanographic and marine ecosystem data from bio-Argo floats in Baffin Bay by CNRS
Takuvik

PROMICE weather station data from Greenland Ice Sheet by GEUS

Observations of atmospheric CO2 and CH4 in Siberia and Alaska (MPG)

Oceanographic, sea ice and snow measurements in central Arctic from automated ice buoys (ITPs and IMBs) by FMI and IOPAN

Atmospheric profiles and surface measurements in the central Arctic from icebreaker ODEN (Stockholm University)

Soil temperature and snow measurements from stations in northern Finland (FMI)

Oceanographical CTD sections
In Young Sound fjord, as part of the
Greenland Ecosystem Monitoring
program (Aarhus University)

Satellite and aircraft observations of the Greenland Ice Sheet (GEUS, DTU, UPM)

- Biogeochemical observations in the Fram Strait (Hausgarten) and Kongsfjorden (AWI, CNRS IUEM)
- Oceanographic moorings north of Svalbard incl. biogeochemistry (IOPAN, UiB, IMR, NERSC, CNRS)
- Glider experiment by CNRS LOCEAN





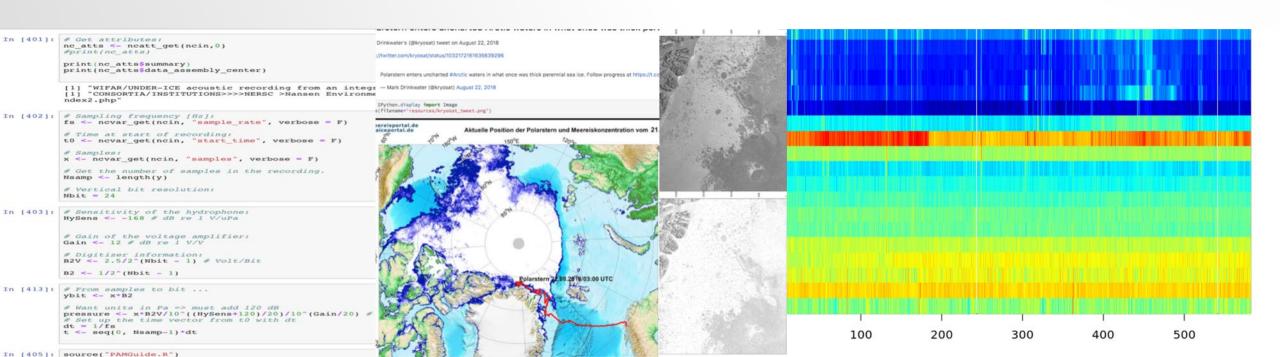
- Integrate existing observing systems
 - Connect observations & derived parameters with EO services and tools for data analysis, transformation & visualization



 Deploy new processing services as scalable Cloud data and computing resources (EOSC & DIAS)



 Manage processing campaigns of new and existing observations (e.g. advanced geostatistics toolkits)



INTAROS Platform supporting Arctic Communities

Most advanced EU-initiative for Community Based Monitoring
 (CBM) in the Arctic, joining local & scientific knowledge



INTAROS Challenges and Activities

- Coordination and collaboration between data providers and stakeholders in the pan-Arctic region
- Improvement of the observing platforms from research to operational systems, filling gaps in observations
- Data sampling, transmission, calibration, processing, archiving and retrieval of required variables
- Survey key resources for sustainability and targeting new sponsorship opportunities (e.g. OCRE, NoR)



