

SIOS Data Management System

Ilkka Matero, SIOS-KC

ilkka.matero@sios-svalbard.org

2. oktober 2024



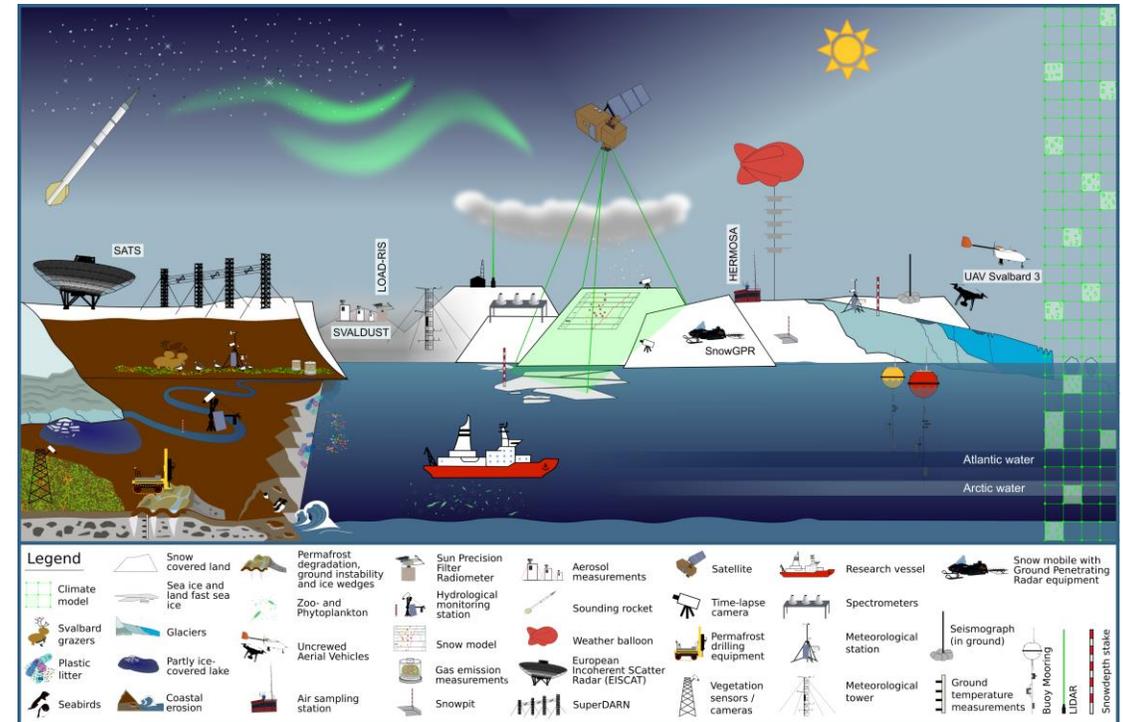
The Svalbard Integrated Arctic Earth Observing System (SIOS)

- A consortium of institutions with research infrastructure in & around Svalbard

- An observing system for Earth System Science (ESS)

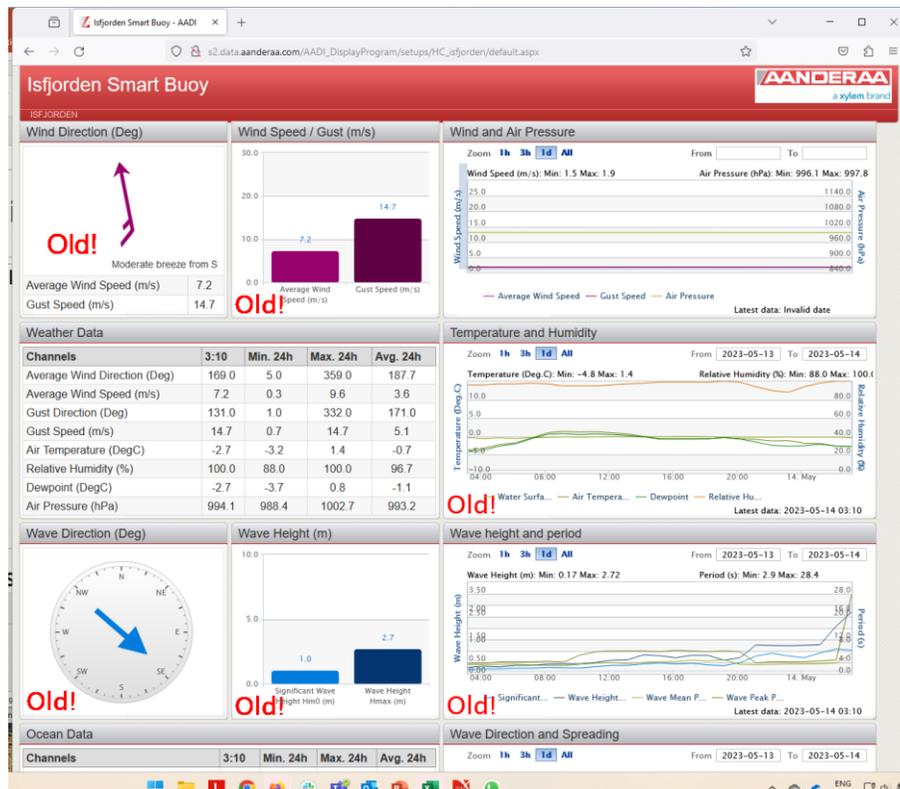
Focus on processes, eg. environmental and climate change

Independent organisation
28 institutions from 10 countries



Key data-related activities of SIOS

- PROVIDE ACCESS TO RELEVANT DATA
- HARMONIZATION OF DATA AND OBSERVATIONS
- FACILITATE INTERDISCIPLINARY RESEARCH COLLABORATION
- EU Horizon projects: POLARIN, Blue-Cloud 2026, Arctic PASSION



A joint initiative of GIOS and SIOS

GIOS – Greenland Integrated Observing System
GIOS is a coordinated network of sustainable long-term research infrastructures in and around Greenland observing the changing air, ice, land, and ocean conditions. GIOS is a national research infrastructure linking all institutions and universities currently carrying out Arctic research in the Danish Realm. <https://gios.org/>

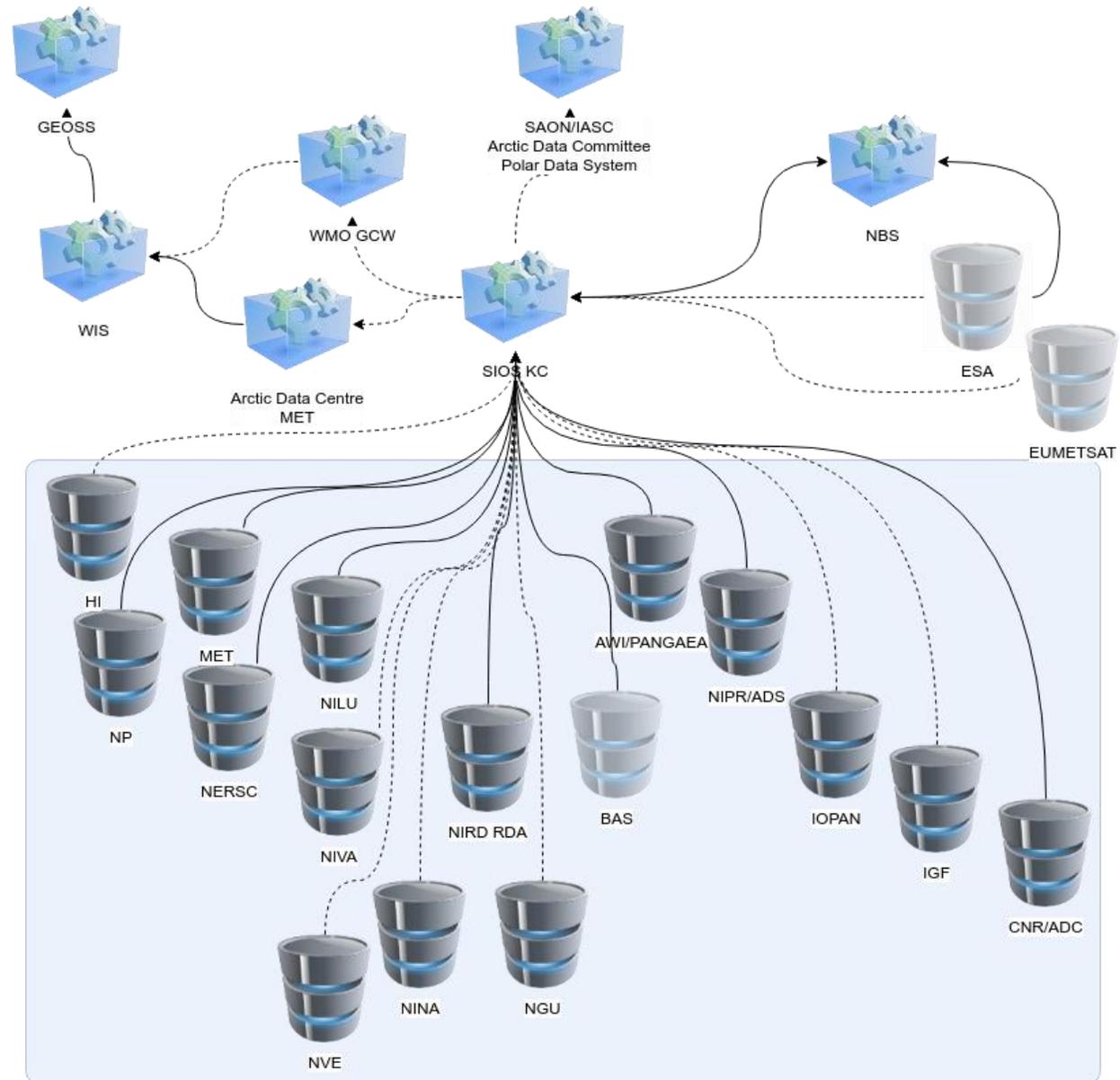
SIOS – Svalbard Integrated Arctic Earth Observing System
SIOS is an international partnership of research institutions studying the environment and climate in and around the Norwegian archipelago of Svalbard. SIOS develops an efficient observing system, shares technology, experience and data, closes knowledge gaps and decreases the environmental footprint of science. <https://sios-svalbard.org/>

Ready to get involved?
Contact information@sios-svalbard.org

Bridging the Fram Strait
Understanding climate and environmental change between Greenland and Svalbard – on land and in the sea

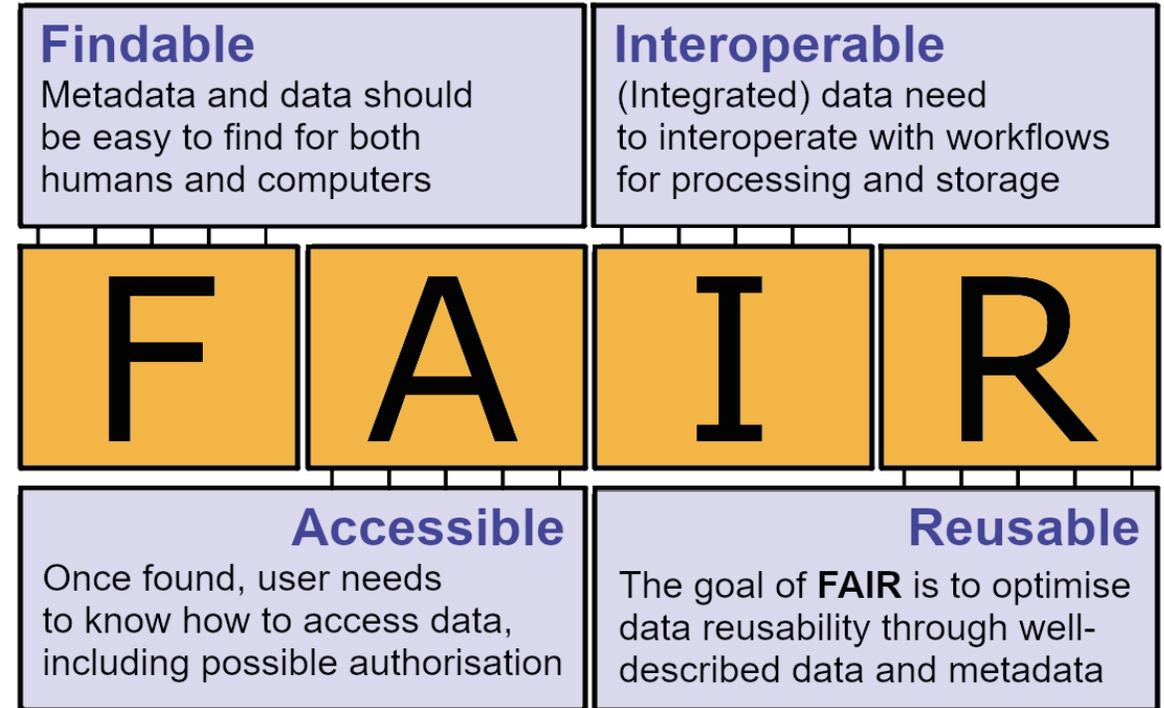
SIOS Data Management System

- Virtual data centre
- Harvest metadata from collaborating data centres
- Make data available through central Data Catalogue
- Provide cross-disciplinary services and products on top of data
- Distributed data management – access data in multiple places without rehosting

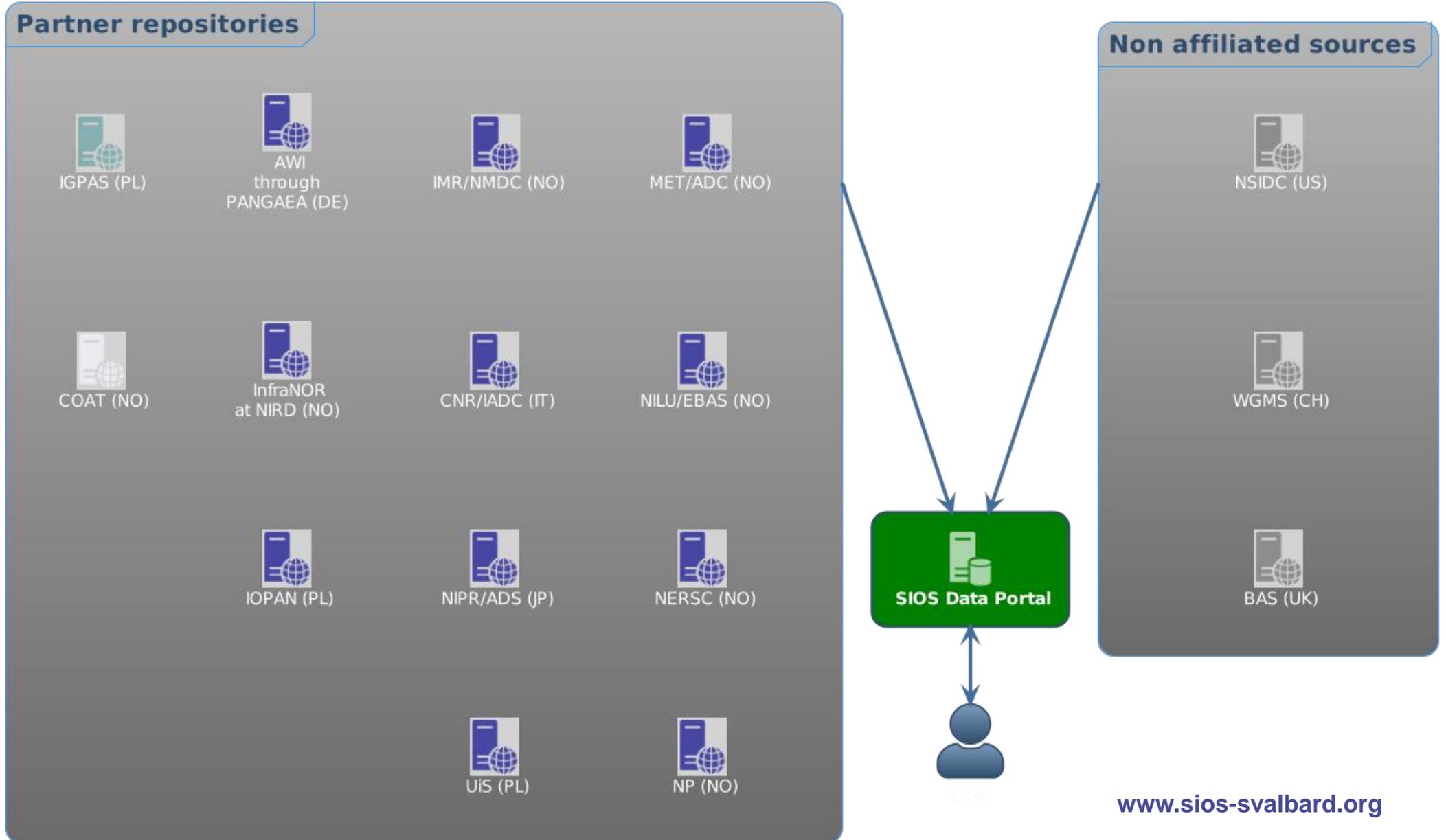


SDMS – Main Principles

- Open and free data sharing
- FAIR data compliance
- Support for use and contribution through workshops/ trainings/ tutorials/ tools



SDMS – Harvested data centres



Data Catalogue

- About the Data Access Portal
- Citation of data and service
- SIOS Core Data
- Nansen Legacy Data
- Brief user guide

Search

Contains all of these words

Enter your search here

Start Date **End Date**

dd.mm.yyyy dd.mm.yyyy

Has children
 Select whether datasets are parents with children (i.e. records of the same type)

Advanced options

Search Reset

Dataset Level

Parent (506676)

Iso Topic Category

- oceans (504017)
- climatologyMeteorologyAtmosphere (503981)
- imageryBaseMapsEarthCover (502573)
- biota (159)
- geoscientificInformation (154)
- environment (143)
- elevation (25)
- society (17)
- boundaries (10)
- inlandWaters (9)

Show more

Keywords

- Land cover (502513)
- Orthoimagery (502509)
- Earth Science > Atmosphere > Atmospheric radiation > Reflectance (375359)
- Oceanographic geographical features (127152)
- Earth Science > Spectral/Engineering > Microwave > Microwave imagery (127150)
- Earth Science > Spectral/Engineering > RADAR > RADAR

Select projection: EPSG:4326 UPS North UPS South Select spatial filter: Within Intersects

Create bounding box filter Visualise all Sentinel products in Map Reset search Reset map

© OpenStreetMap contributors.

506676 datasets found. Showing datasets 121 - 135 on page 9 of 33779 pages.

S2B_MSIL1C_20230621T144759_N0509_R082_T29XNJ_20230621T16500



Nasjonalt BakkeSegment (NBS)
Institutions: Norwegian Meteorological Institute, Norwegian Meteorological Institute
Last metadata update: 2023-06-21T22:42:46Z
 Temporal Extent

Project

- NBS (502509)
- Nansen Legacy (1283)
- APPLICATE (450)
- SIOS (450)
- YOPP (450)

Show more

Collection

- SIOS (506620)
- NBS (502509)
- ADC (4146)
- NSDN (3227)
- AeN (1359)

Show more

Personnel

- NBS Helpdesk (502509)
- NBS team (462350)
- Arnfinn Morvik (1632)
- Øystein Godøy (475)
- Norwegian Polar Institute (326)

Show more

Organisation

- Norwegian Meteorological Institute (503007)
- NO01L, Norwegian Institute for Air Research, NILU, Instituttveien 18, 2007, Kjeller, Norway (424)
- NO01L, Norwegian Institute for Air Research, NILU, Atmosphere and Climate Department, Instituttveien 18, 2007, Kjeller, Norway (89)
- DK01L, National Environmental Research Institute, NERI, P.O.Box 358, Fredriksborgvei 399, DK-4000 Roskilde, Denmark (68)
- Norwegian Meteorological Institute / Arctic Data Centre (62)

Show more

Data Center

- METNO (502509)
- NO/NMDC/IMR (932)
- Norwegian Polar Institute (588)
- UNIS (576)
- WMO (450)

Show more

Publisher

Observation Facility Catalogue

- Overview of facilities collecting SIOS data
- Make better use of existing infrastructure
- 250+ unique entries currently

SIOS observation facility catalogue

This catalogue has been developed to provide an overview of the observation facilities which collect SIOS data. An observation facility can be one instrument or a collection of instruments, e.g. a weather station, and is a term used by the World Meteorological Organization (WMO). The annotation is standardised following the WMO standards as far as possible, in order to make entries unambiguous and interoperable internationally.

How to add observation facilities

About OCF



Observation Facility	Variables	Contact	Additional Information
COSMOS - black carbon	Observed Variable: ATMOSPHERE>AEROSOLS>CARBONACEOUS AEROSOLS Start Date: 2012-07-01T12:00:00Z Sampling procedures: continuous	Makoto Koike koike@eps.s.u-tokyo.ac.jp National Institute for Polar Research	Landing Page: Type: land platform (fixed) Status: Operational SIOS project: - RIS ids: 5460

Search with Filters

Observation facility

RIS ID

Institution

- Akvaplan-NIVA
- Alfred Wegener Institute
- Andøya Space Center
- Arctic Centre, University of Groningen
- Institute of Geophysics, Polish Academy of Sciences
- Institute of Marine Research
- Nansen Environmental and Remote Sensing Center
- National Institute for Polar Research

Status

- Planned
- Pre-operational
- Operational
- Partly operational
- Non-reporting
- Stand-by
- Closed
- Not applicable
- Unknown

SIOS project

- SIOS-InfraNor

Type

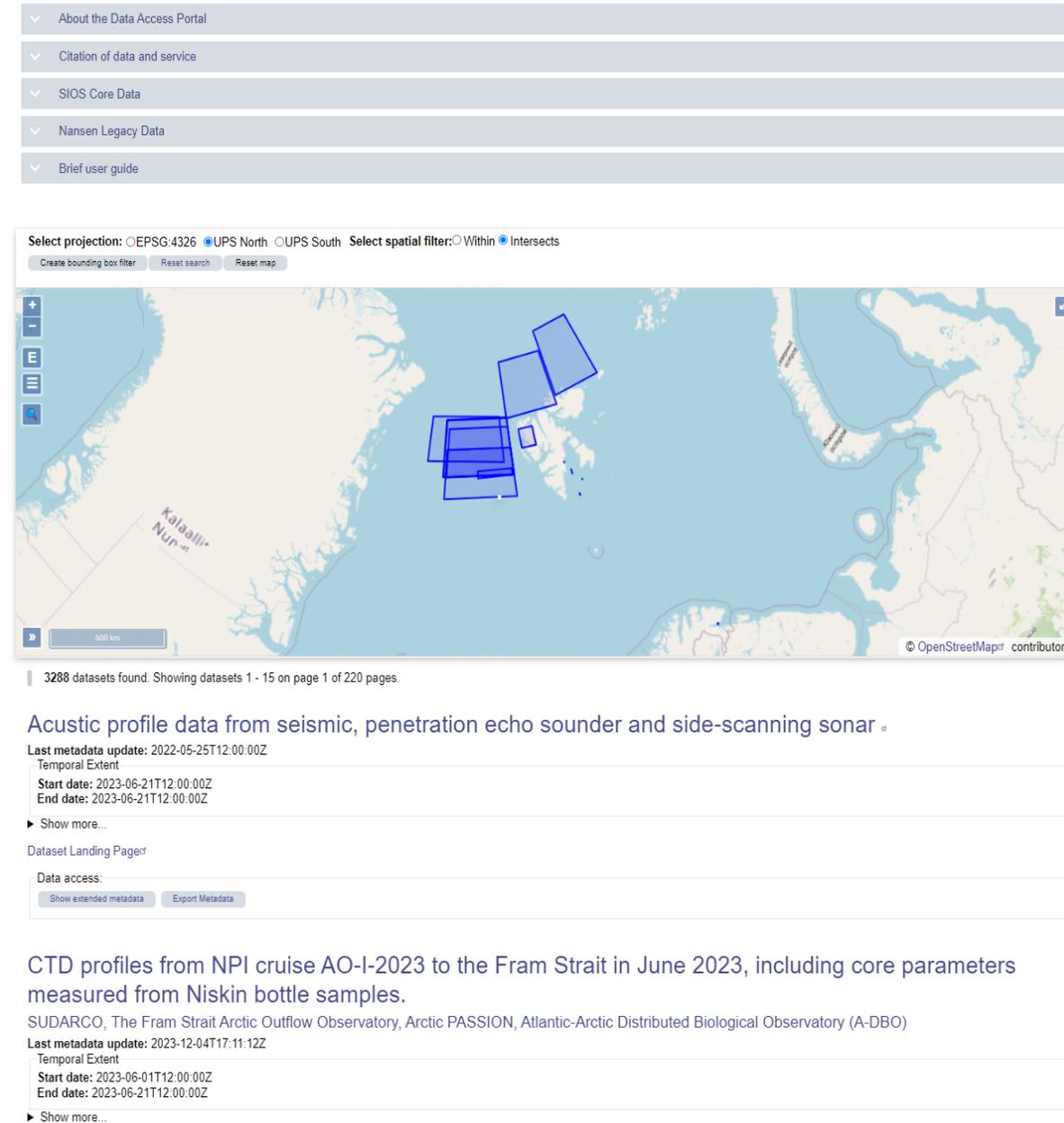
- land platform (fixed)
- land platform (mobile)
- land platform (on ice)
- sea platform (fixed)
- sea platform (mobile)
- sea platform (on ice)
- air platform (fixed)
- air platform (mobile)
- space-based platform

Observed Variable

SIOS Core data

Challenges for Data Availability

- Differing practices in interdisciplinary community
 - Data and metadata formats
 - Readiness of data portals
 - Vocabularies
- Need standards and to stick to them!
 - Enforcing standards on our own "Svalbard ECVs" - the SIOS Core Data. Currently 51 variables
- Data management planning sometimes considered as the 'necessary evil'
- Poor motivation for going the extra mile of making data FAIR and available through connected data centres



▼ About the Data Access Portal

▼ Citation of data and service

▼ SIOS Core Data

▼ Nansen Legacy Data

▼ Brief user guide

Select projection: EPSG:4326 UPS North UPS South Select spatial filter: Within Intersects

Create bounding box filter Reset search Reset map

3288 datasets found. Showing datasets 1 - 15 on page 1 of 220 pages.

Acoustic profile data from seismic, penetration echo sounder and side-scanning sonar

Last metadata update: 2022-05-25T12:00:00Z

Temporal Extent

Start date: 2023-06-21T12:00:00Z

End date: 2023-06-21T12:00:00Z

Show more...

Dataset Landing Page

Data access:

Show extended metadata Export Metadata

CTD profiles from NPI cruise AO-I-2023 to the Fram Strait in June 2023, including core parameters measured from Niskin bottle samples.

SUDARCO, The Fram Strait Arctic Outflow Observatory, Arctic PASSION, Atlantic-Arctic Distributed Biological Observatory (A-DBO)

Last metadata update: 2023-12-04T17:11:12Z

Temporal Extent

Start date: 2023-06-01T12:00:00Z

End date: 2023-06-21T12:00:00Z

Show more...



Thank you!

