



Mapping Arctic Observing Systems and In Situ Data Collections

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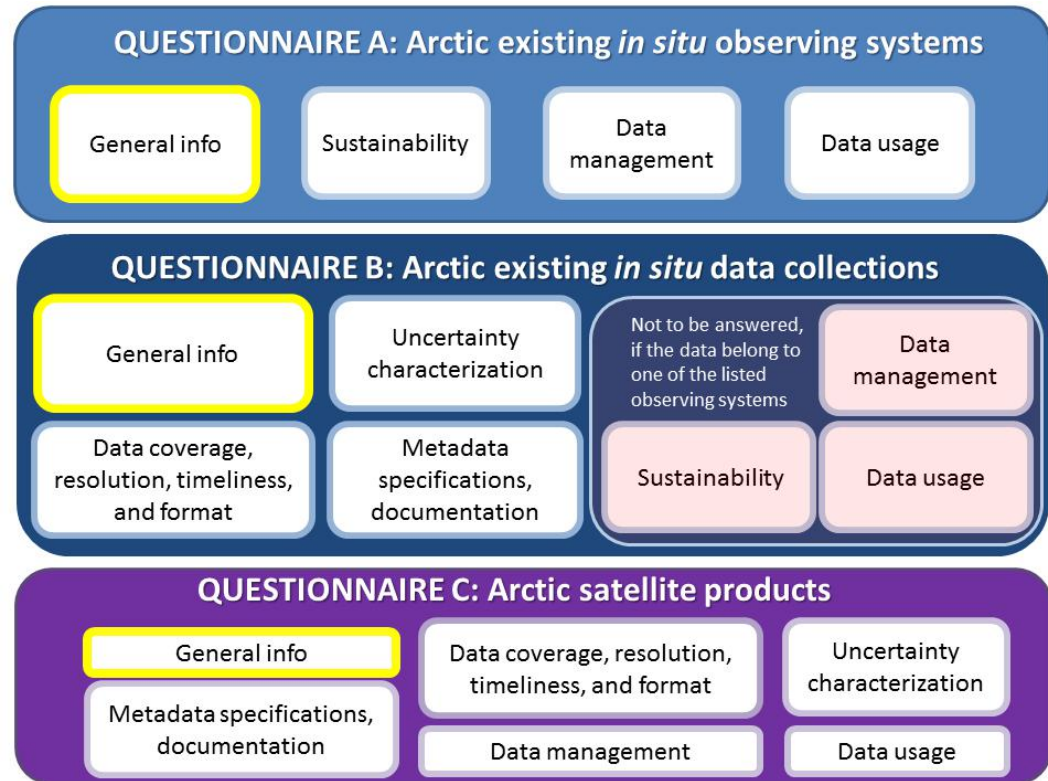
²Finnish Meteorological Institute, Finland



Mapping Arctic Observing Systems

H2020 INTAROS (2016-2021)

- Project under BG-09-2016 An integrated Arctic observation system coordinated by NERSC
- 35 partners from Europe; 12 international partners
- A survey of in situ observation systems and data collections was conducted
- Results used in gap analysis of Arctic in situ observation capacity
- Strong recommendations from EC and SAON to continue and extend the survey

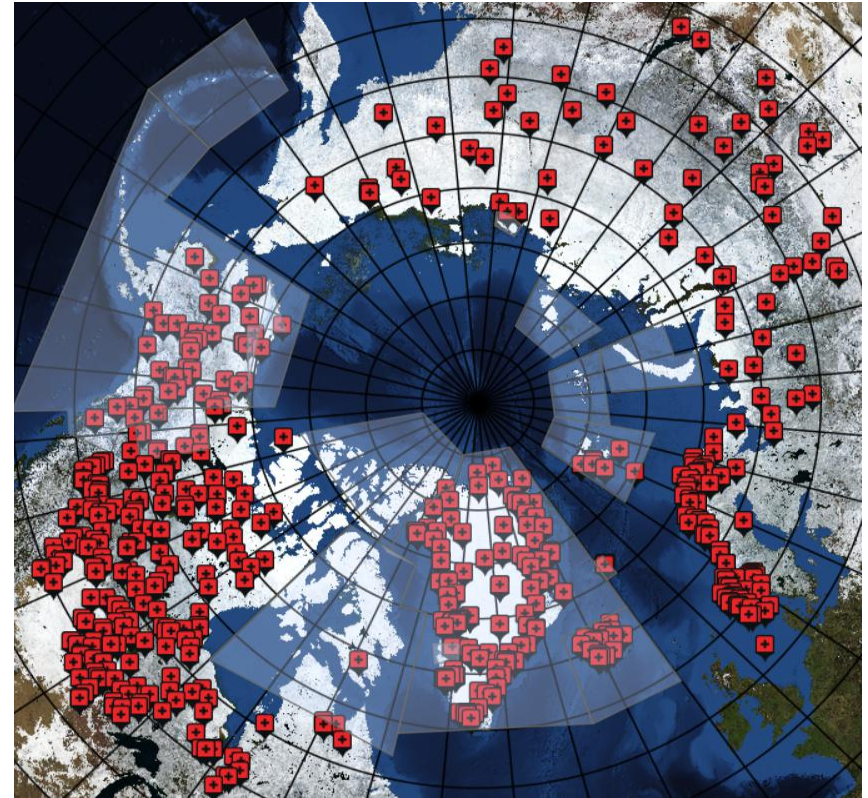


INTAROS; <https://intaros.eu/>

Mapping Arctic Observing Systems

Arctic Mapping: From Mapping to Knowledge

- Spin off project from INTAROS funded by the Norwegian Ministry for Climate and Environment
- Builds on and extends the INTAROS survey
- Develops methodology and tools for keeping survey information updated and analyzing evolution over time
- Additional support from NERSC Basic Funding



Mapping Arctic Observing Systems

- **ARCMAP** is a survey application situ observation systems and th collections
- Developed using open source frameworks wq and Django rest
- Runs in browser; no extra plugins needed
- Version 1 released mid Nov 2019 Polar Data Forum 3
- Updated since with e.g. rich plotting capabilities
- To get access please contact: kjetil.lygre@nerisc.no

arcmap

Log In

Questionnaire A: ARCTIC EXISTING IN SITU OBSERVING SYSTEMS

- 1A.GENERAL INFORMATION ON THE OBSERVING SYSTEM AND THE RESPONDENT
- 1B.LOCATION INFORMATION
- 2. OBSERVATIONS AND POTENTIAL ENVIRONMENTAL IMPACT
- 3. SUSTAINABILITY OF THE OBSERVING SYSTEM
- 4. DATA USAGE
- 5. DATA MANAGEMENT

Home Log In

Logged in as frode

Log Out

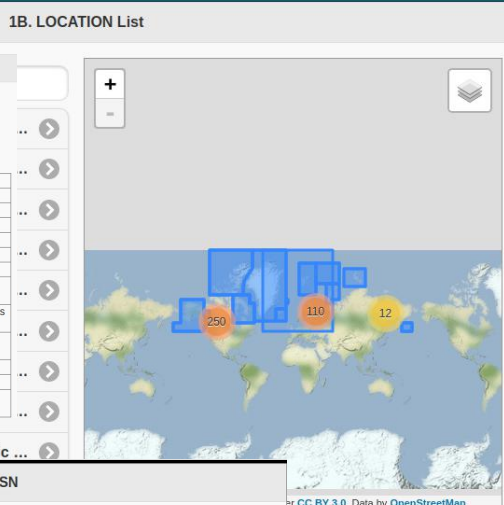
Update data

Click update data to load your forms and return to the questionnaire.

Home Agnieszka Beszczynska-Möller-A-TWAIN Poland...

Agnieszka Beszczynska-Möller-A-TWAIN Poland (Polish contribution to the A-TWAIN moored array)

*Name of the respondent	Agnieszka Beszczynska-Möller
*Affiliation of the respondent	Institute of Oceanology PAS
*Email address of the respondent	abesz@iopan.gda.pl
*Country of the respondent	Poland
*Domain of the observing system	Ocean and sea ice,
*Category of the observing system	OCEAN: Fixed moorings,
Add other categories	
*Provide the name (or identification) of the observing system	A-TWAIN Poland (Polish contribution to the A-TWAIN moored array)
General comments on the observing system	
Different number of moorings in different years. Moorings locations changed in some years. Instrument failures in some years.	
Project(s) or Monitoring Program under which framework the observing system was established (if relevant)	
A-TWAIN	
*Contact details (email) for the observing system	abesz@iopan.gda.pl
URL of the observing system (if it exists)	
Institutional body coordinating the observing system or managing the observing platforms	
Institute of Oceanology PAS	



Home Tine Larsen-GLISN network Greenland-GLISN

Tine Larsen-GLISN network Greenland-GLISN

Reference to the General information page	Tine Larsen-GLISN network Greenland
Spatial coverage: name of location	GLISN
*Spatial coverage: Enter a point location, a line or an area.	Locations with multiple points
*Temporal coverage - Start date	1930-01-01
Temporal coverage - End date	

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Mapping Arctic Observing Systems

- Easy to register new systems and data collections; parts can be stored individually

arcmap

Log In

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How to fill in the questionnaire.

It consists of 6 sub-sections - pages - that are saved separately, meaning you can save parts of the work and getting back to it later.

After login, press update data to activate your forms and return here.

For a new form, always start with page 1A (General Information).

To fill another page (1B, ..., 5), press 'Next Page' to get to the next page for filling in.

Page 1B (Location Information) can be filled in several times in case of multiple locations or deployments of an otherwise similar observation system. Take care to provide a unique name in the field 'Spatial coverage: name of location' for each location.

For any questions, please contact kjetil.lygre@nerisc.no

Nansen Environmental and Remote Sensing Center
arcmap v0.1.6 • powered by [yii](#) and the [DjangoRest framework](#)

Home Edit Questionnaire A: 4. DATA USAGE Delete

Reference to 1A General Information

Hanne Sagen-Fram Strait Multipurpose Acoustic System

Chose a form name for an observing systems General information page to connect this page to

Category of the observation network/system

- Broad network (it includes a broad range of interdisciplinary observations and projects)
- Focused network (is confined to specific themes or disciplines)
- Commercial network (provide observational data for profit)
- Operational network (feeding data into weather service and forecasting entities)
- Resource-extraction network (conducts monitoring or baseline observations specifically for planned or ongoing resource extraction activities)
- Distributed data (from many local networks)

Categories are defined according to Eicken et al, 2013. Dual-purpose Arctic observing networks: Lessons from SEARCH on frameworks for prioritiz...

Application areas

- Climate Research and monitoring
- Process oriented research
- Research supporting operational services
- Operational services
- Climate services
- Public exploitation
- Commercial exploitation
- Environmental assessment
- Risk assessment
- Other:

The ACOBAR moorings (2010-2012) were also used for glider navigation

Select the application area(s) that is(are) most relevant for your observing system

If you could not provide an answer to some of the questions of this section, please explain why. Include here eventual additional comments on this section.

Back Save



Mapping Arctic Observing Systems

- Easy to update information; just edit relevant parts

Home Edit Questionnaire A: 1A. GENERAL INFORMATI... Delete

*Name of the respondent
Tine Larsen

*Affiliation of the respondent
GEUS

*Email address of the respondent
tbi@geus.dk

*Country of the respondent
Denmark

*Domain of the observing system

Atmosphere

Ocean and sea ice

Land including terrestrial cryosphere

You can select multiple domains

*Category of the observing system

ATMOSPHERE: Surface-layer

ATMOSPHERE: Tropospheric profiles

ATMOSPHERE: Surface and tropospheric observations collected during field campaigns

OCEAN: Fixed moorings

OCEAN: Repeated sections

OCEAN: Floats

Home Tine Larsen-GLISN network Greenland Edit


Tine Larsen-GLISN network Greenland

*Name of the respondent	Tine Larsen
*Affiliation of the respondent	GEUS
*Email address of the respondent	tbi@geus.dk
*Country of the respondent	Denmark
*Domain of the observing system	Land including terrestrial cryosphere,
*Category of the observing system	LAND: Permanent and temporary seismic stations,
Add other categories	
*Provide the name (or identification) of the observing system	GLISN network Greenland
General comments on the observing system	Real-time broad-band seismographs. Station spacing is very large, and some parts of the Arctic are not sufficiently covered
Project(s) or Monitoring Program under which framework the observing system was established (if relevant)	Danish Seismological Network and GLISN
*Contact details (email) for the observing system	seismology@geus.dk
URL of the observing system (if it exists)	http://glisn.info
*Institutional body coordinating the observing system or managing the observing platforms	GEUS (seismology@geus.dk), IRIS, GEOFON

Home Tine Larsen-GLISN network Greenland-GLISN

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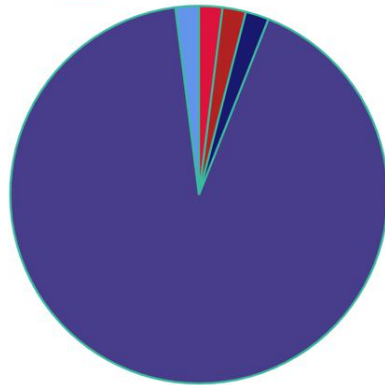
Mapping Arctic Observing Systems

- Information is stored in database; flexible extraction and presentation

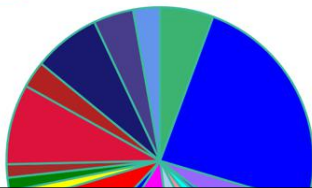
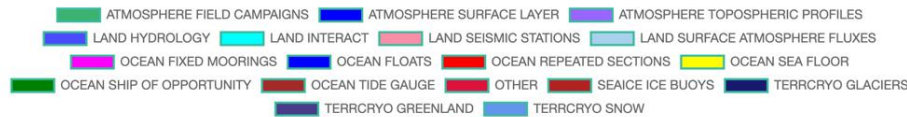
ARCMAP Client Home

Questionnaire Summary

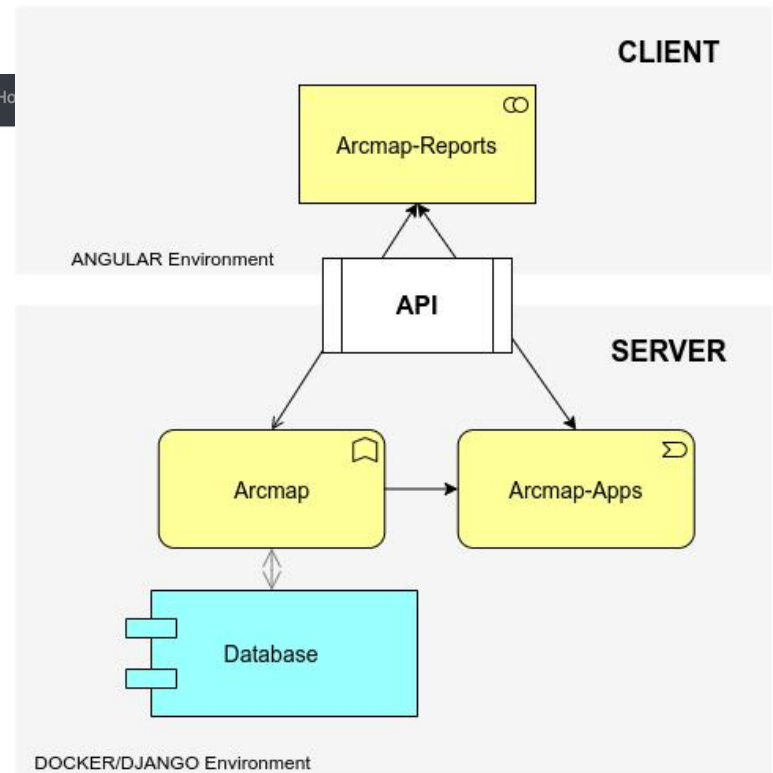
Funding Sources



Categories



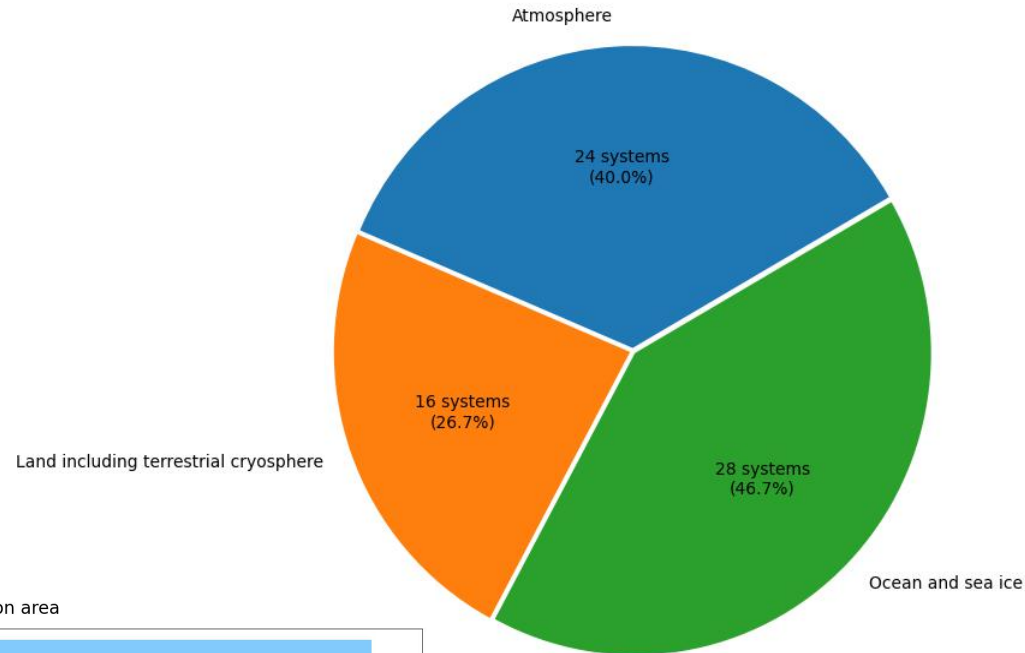
ARCMAP Infrastructure



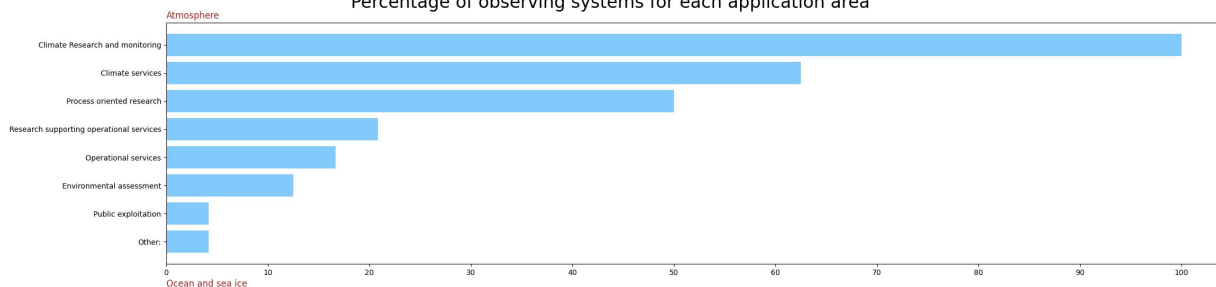
Mapping Arctic Observing Systems

Total number of systems registered : 60

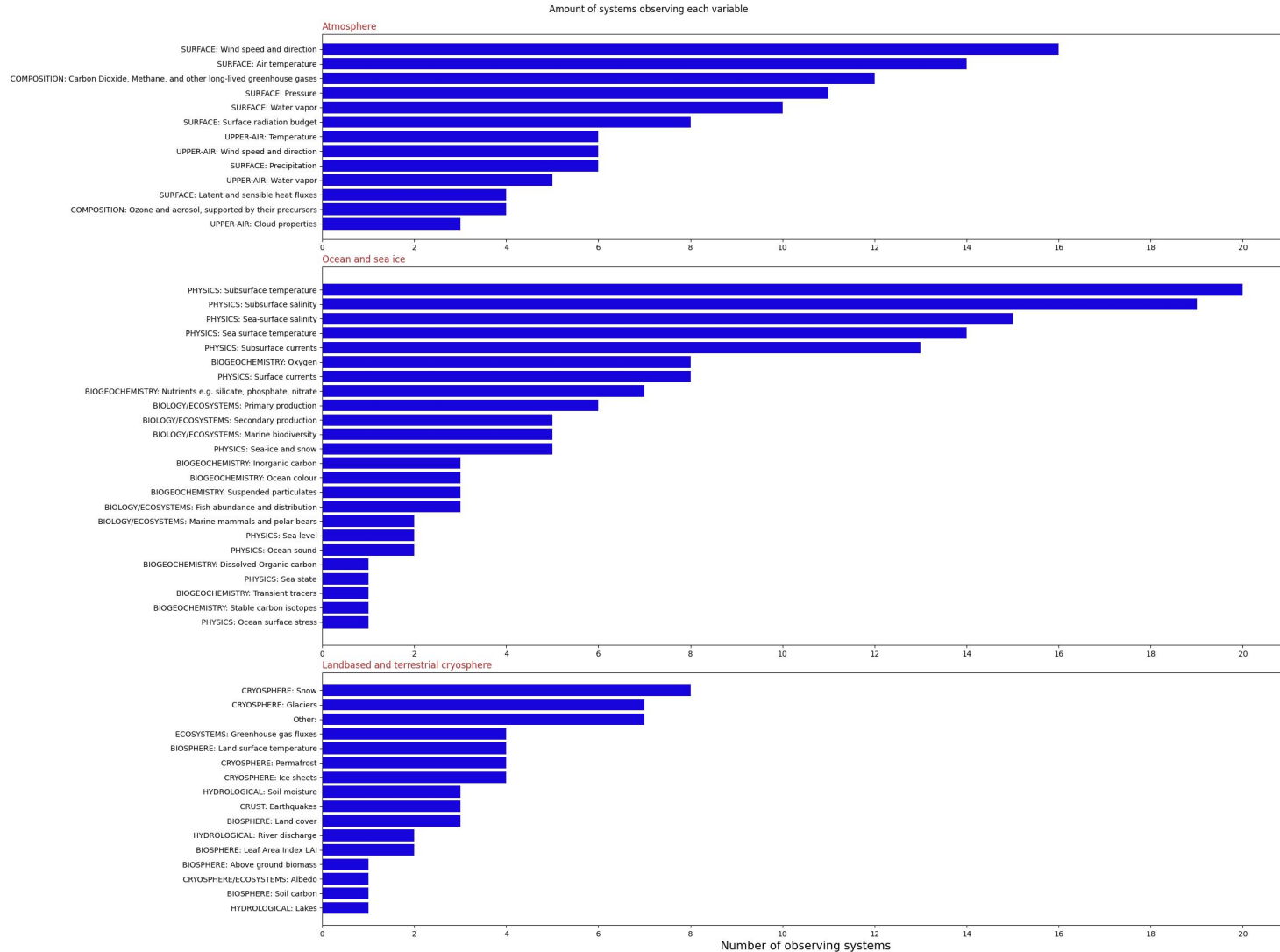
- **ARCMAP** provides statistics and aggregated information for the surveyed observation systems, e.g.
 - Domain (sphere)
 - Application area
 - Variables observed
 - System maturity
 - Data storage
 - Observation period



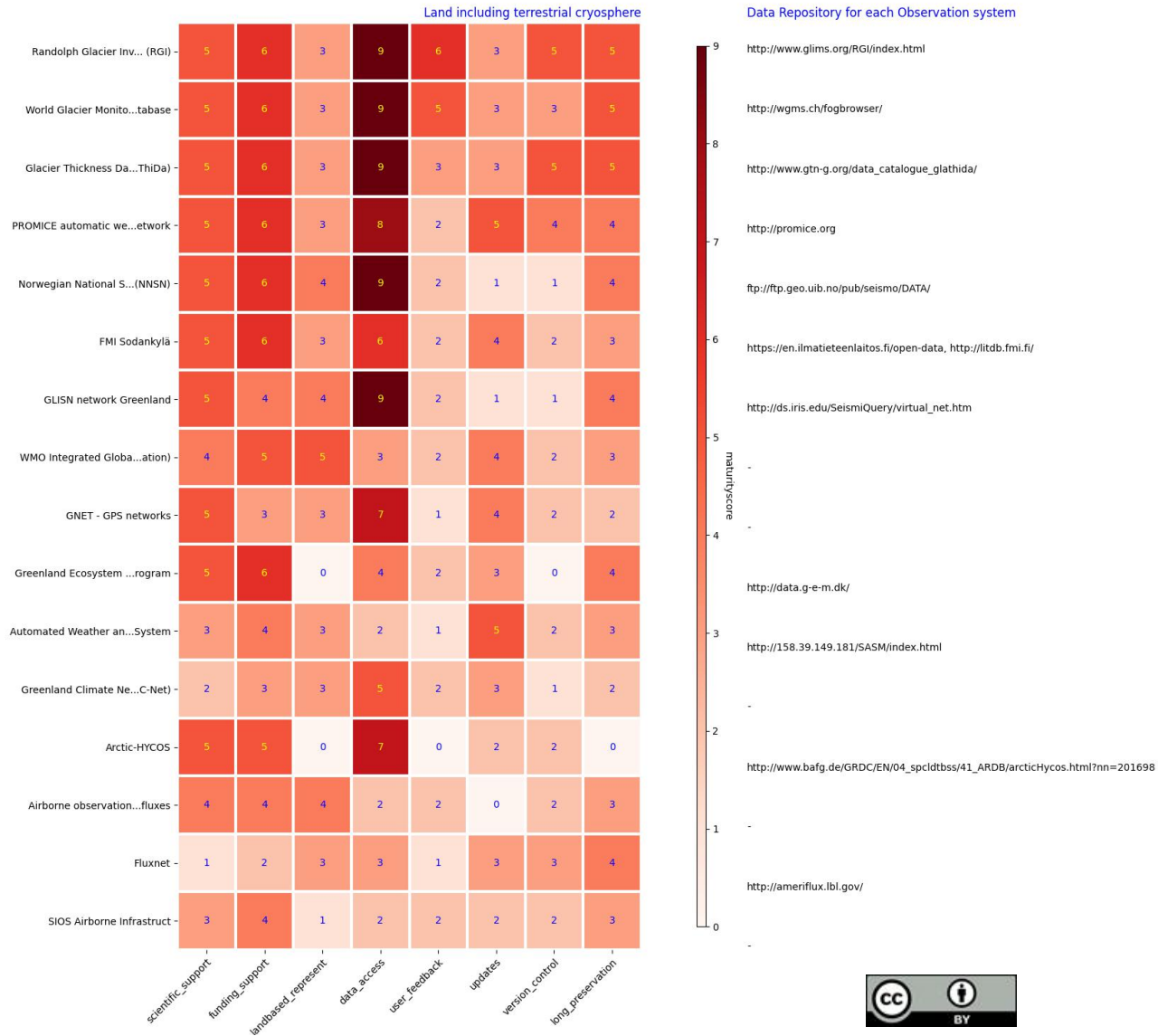
Percentage of observing systems for each application area



Mapping Arctic Observing Systems



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Mapping Arctic Observing Systems

- **ARCMAP** planned extensions
 - Enhance map component and integrate in iAOS Portal



- Develop new indicators and improve presentation capabilities further
 - Work with other projects and initiatives to develop exchange protocols for observing assets metadata
- **ARCMAP** can be accessed from <https://ci.nersc.no/>



Mapping Arctic Observing Systems

Thank you!

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INTAROS

