



# FARO

## Forum of Arctic Research Operators

Promoting dialogue on logistics and operational support  
for scientific research in the Arctic

Open and informal network of  
operators of ships, stations and aircraft

Small and big – national and local



[faro-arctic.org](http://faro-arctic.org)  
Chair Magnus Tannerfeldt, [magnus@polar.se](mailto:magnus@polar.se)



# FARO

**20 Member countries – ca 40 operators, funding agencies, institutes**

<b>Country</b>	<b>National Point of Contact</b>
Austria	Austrian Polar Research Institute
Canada	Dalhousie University
China	Polar Research Institute of China - PRIC
Czech Republic	University of South Bohemia
Denmark	Aarhus University
Finland	Finnish Environment Institute - FMI
France	Institut polaire français Paul Émile Victor - IPEV
Germany	Alfred Wegener Institute - AWI
Iceland	The Icelandic Centre for Research – RANNÍS
Italy	National Research Council - NRC
Japan	National Institute of Polar Research - NIPR
Korea	Korea Polar Research Institute - KOPRI
Netherlands	University of Groningen
Norway	Norwegian Polar Institute - NPI
Poland	Polish Academy of Sciences
Portugal	Portuguese Foundation for Sci & Tech
Russia	Arctic and Antarctic Research Institute - AARI
Sweden	Swedish Polar Research Secretariat - SPRS
UK	National Environmental Research Council - NERC
USA	National Science Foundation - NSF



## How can FARO help?



- FARO works with a pan-Arctic perspective to promote synergies and optimized use of research infrastructures across national borders
- FARO offers its network and expertise to facilitate implementation of transnational planning
- FARO can help integrate scientific priorities with strategic, long-term planning of infrastructures and capacities
- FARO can make inventories of existing infrastructures to identify gaps to be addressed on the pan-Arctic scale, including better connection of existing capacities
- FARO is a link to know-how and development of equipment and infrastructure



## Points to consider



- It takes time to build collaborations. And to build up trust.
- Joint programming should be truly coordinated with RI's operation, development and funding.
- Decision making sometimes has to be made on a higher level than individual infrastructures. We have to agree to cooperate – and thus to pool resources.
- Infrastructure has an important function to coordinate and enhance collaboration between research groups.
- An infrastructure is something that can only be achieved by dedicating resources, it's much more than just cooperation and synchronization of existing programmes.

# Operational aspects

## Investments and priorities for ships, stations, aircraft, equipment



1. Decide **what to invest in** and where to put it, guided by
  - science plans from ICARP, AOS, IASC, ISAC, etc
  - analyses of gaps and needs
2. Dedicate resources
  - **collaborations** between operators to offer resources
  - **international money** to get things going
  - research funding mechanisms with **pooled resources**
3. Optimal use, fill the infrastructures with the best science
  - create **one-stop-shops**
  - enable and promote **international access**
  - maintain **flexibility**, upgrade and renew investments



# Suggested focus for the Arctic Council Task force on Scientific cooperation (TFSC)



## WHAT?

### Research access and transport of samples

Cross-border equipment transport, access for personnel, customs practices, sample and data exchange, research clearances and scientific permitting

## WHY?

- An issue that needs solutions also on the political level
- An issue for the Arctic countries to solve
- Feasible: reasonable time frame, low cost
- Highly prioritized by scientists and managers
- Crucial for the relevance of scientific collaboration and sampling



# Suggested focus for TFSC

## WHAT?

### Research access and transport of samples

Cross-border equipment transport, access for personnel, customs practices, sample and data exchange, research clearances and scientific permitting

## HOW?

- Harmonized regulations with one-stop-shop approach
- Customs clearance connected to permits for sampling and research: temporary import of equipment, and export of samples
- Build on existing institutions, networks and regulations



*Joint use of research infrastructures –  
meeting our needs for Arctic ocean observation  
and marine research*

# ARICE

**Arctic Research Icebreaker Consortium for Europe**

Magnus Tannerfeldt, SPRS  
magnust@polar.se

Nicole Biebow, AWI  
nicole.biebow@awi.de



# Marine Research Infrastructures

## The resources:

POLARSTERN – one of the most sophisticated polar research vessels in the world

ODEN – the most capable research icebreaker in the world (non-nuclear)

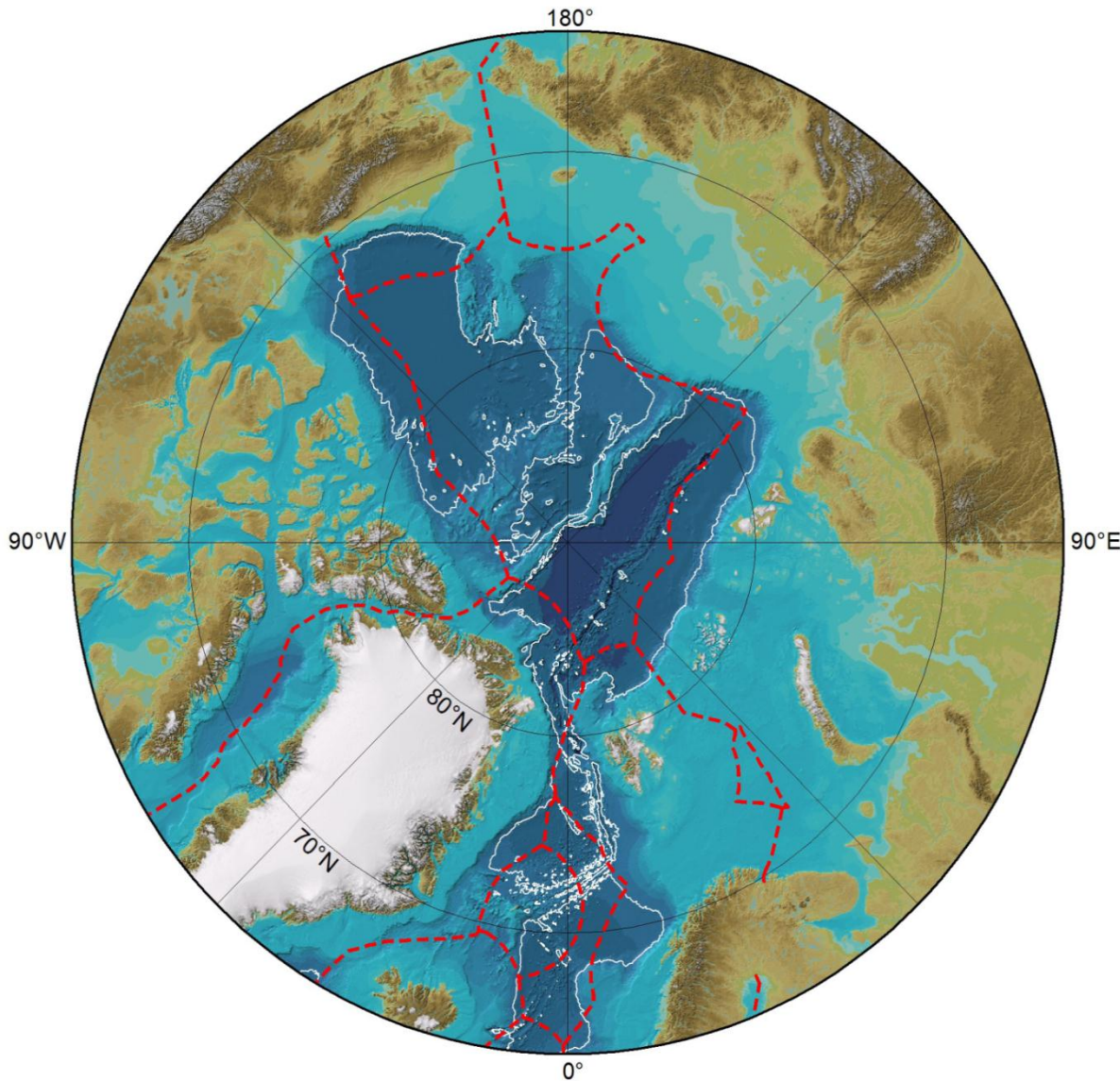
## The idea:

Scientific, political and financial commitment to create a European and international network for joint research icebreaker operations using existing ships.

## The objectives:

- Increase the coordination of available European heavy icebreakers
- Cost-effective usage through transnational harmonisation, especially in the High Arctic





# Access to the High Arctic through ARICE

# The reasons for establishing a strategic initiative at this point in time are:

- Urgent requirement to capture new data and fill gaps in scientific understanding about rapid change in the Arctic Ocean
- Science operations in the High Arctic, especially in the colder season, are costly and logistically demanding
- Plan emerges to build a new German polar research vessel POLARSTERN 2, whilst continuing to operate POLARSTERN
- Swedish polar research icebreaker ODEN operates under renewed 10-year agreement that makes the ship available for research May to December each year



# The ARICE initiative

## Key European Partners:

1. Alfred Wegener Institut für Polar- und Meeresforschung (AWI), Germany, Nicole Biebow
2. Swedish Polar Research Secretariat (SPRS), Sweden, Magnus Tannerfeldt
3. Swedish Maritime Administration (SMA), Sweden, Tomas Årnell
4. Swedish Meteorological and Hydrological Institute (SMHI), Sweden, Amund Lindberg
5. Institut de Ciències del Mar (CSIC), Spain, Roger Urgeles
6. Italian National Research Council (CNR), Italy, Enrico Brugnoli
7. Programma Nazionale di Ricerche in Antartide (PNRA) Italy , Carlo-Alberto Ricci
8. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Italy, Angelo Camerlenghi
9. British Antarctic Survey (BAS), United Kingdom, David G. Vaughan
10. European Polar Board (EPB), Roberto Azzolini
11. Geological Survey of Denmark and Greenland (GEUS), Denmark, Christian Marcussen
12. Finnish Environment Institute, Marine Research Center (SYKE), Finland, Juha Flinkman
13. Finnish Meteorological Institute (FMI), Finland, Johanna Ikävalko
14. Polish Academy of Sciences (IOPAS), Poland, Waldemar Walczowski
15. Arctic Portal.org, Iceland, Halldór Jóhannsson
16. Portugese Foundation for Science and Technology, Portugal, Sónia Mendes da Silva

## International and non-European organisations:

16. National Resources Canada (NRCAN), Canada, Marian Campbell Jarvis
17. National Science Foundation (NSF), Division of Polar Programs, USA, Simon Stephenson
18. International Arctic Science Committee (IASC), International, Volker Rachold
19. Sustaining Arctic Observing Networks (SAON), International, Tom Armstrong
20. International Study of Arctic Change (ISAC), International, Maribeth Murray



# Towards Horizon 2020



**Consultation on possible topics for future activities for integrating and opening existing national research infrastructures**

**ARICE was positively evaluated by the EC** for future Integrating Infrastructure Initiatives (I3) in Horizon 2020.

It received the **highest grade A and recommended** as a *“Topic with high potential and with merit for future Horizon 2020 actions for integrating and opening existing national research infrastructures”*.

This means that a call might be opened in Horizon 2020, which will be a very important step for the implementation of this initiative.



## Next steps:

Create scientific, legal and financial framework, drawing on the ERICON documentation and input from all partners

- All partners: promote the vision and secure national political and financial support for its realization
- Apply to be on ESFRI Roadmap
- Respond to relevant EU calls
- Forming transatlantic and other international alliances

## Timeline:

- |             |   |
|-------------|---|
| 2014 – 2015 | Securing support on national, European and international level                                  |
| 2015 – 2016 | Preparations and agreements between funding agencies and operators                              |
| 2016 – 2017 | Funding applications  |
| 2017 – 2018 | Call for proposals, scientific evaluation, strategic and operational planning                   |
| 2018 – 2025 | Arctic research expeditions with ODEN and POLARSTERN, evaluations, repeated calls for proposals |



# Building the future



Thank you!

