



# Polar Connect

What does it take to rethink the global map of the Internet?

Netnod Meeting 2026

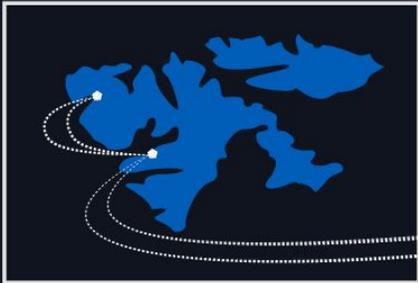
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# NORDUnet, serving the five Nordic R&E Networks



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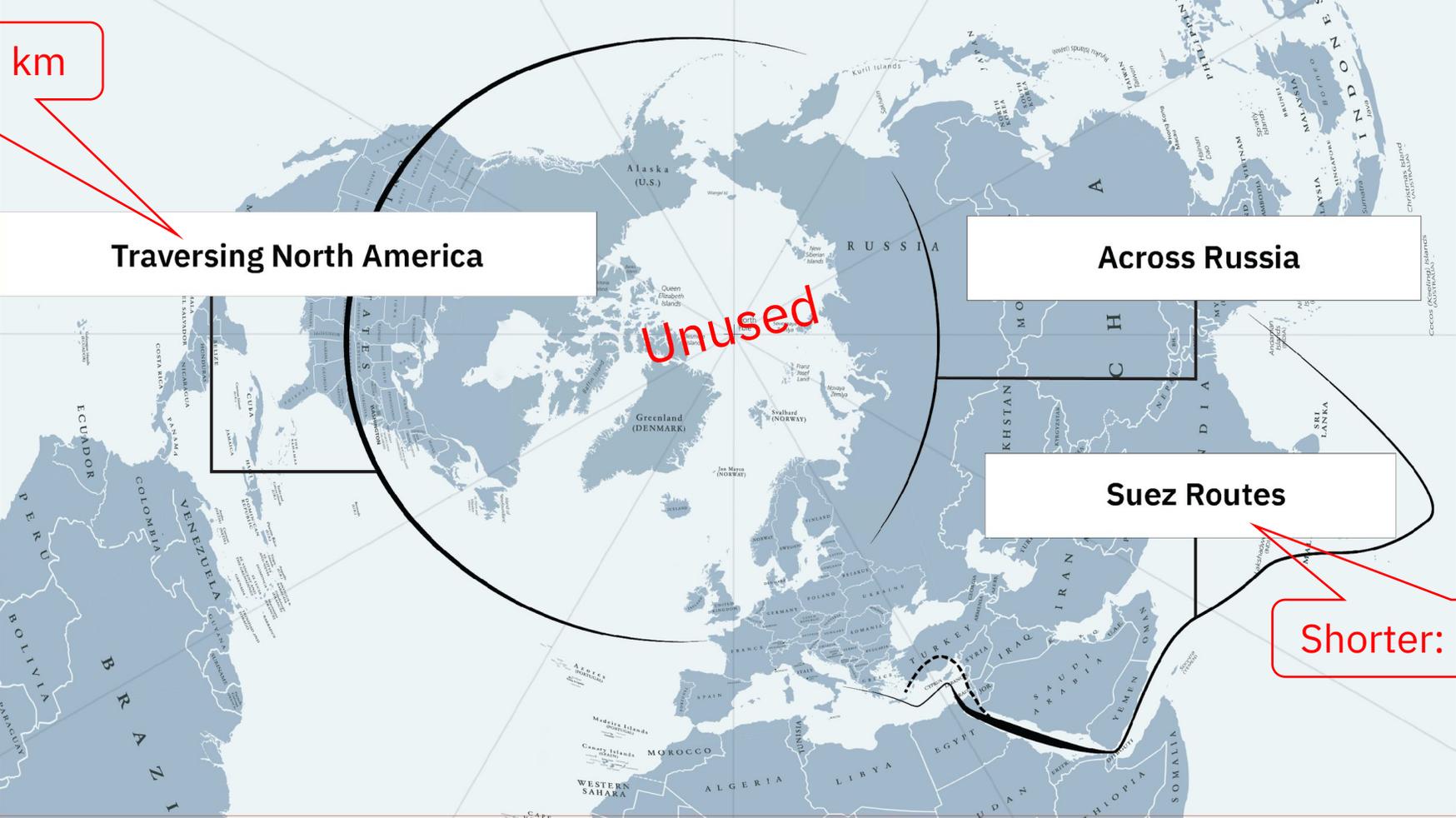
**NORDUnet**  
Nordic Gateway for Research & Education

# NORDUnet, serving the five Nordic R&E Networks

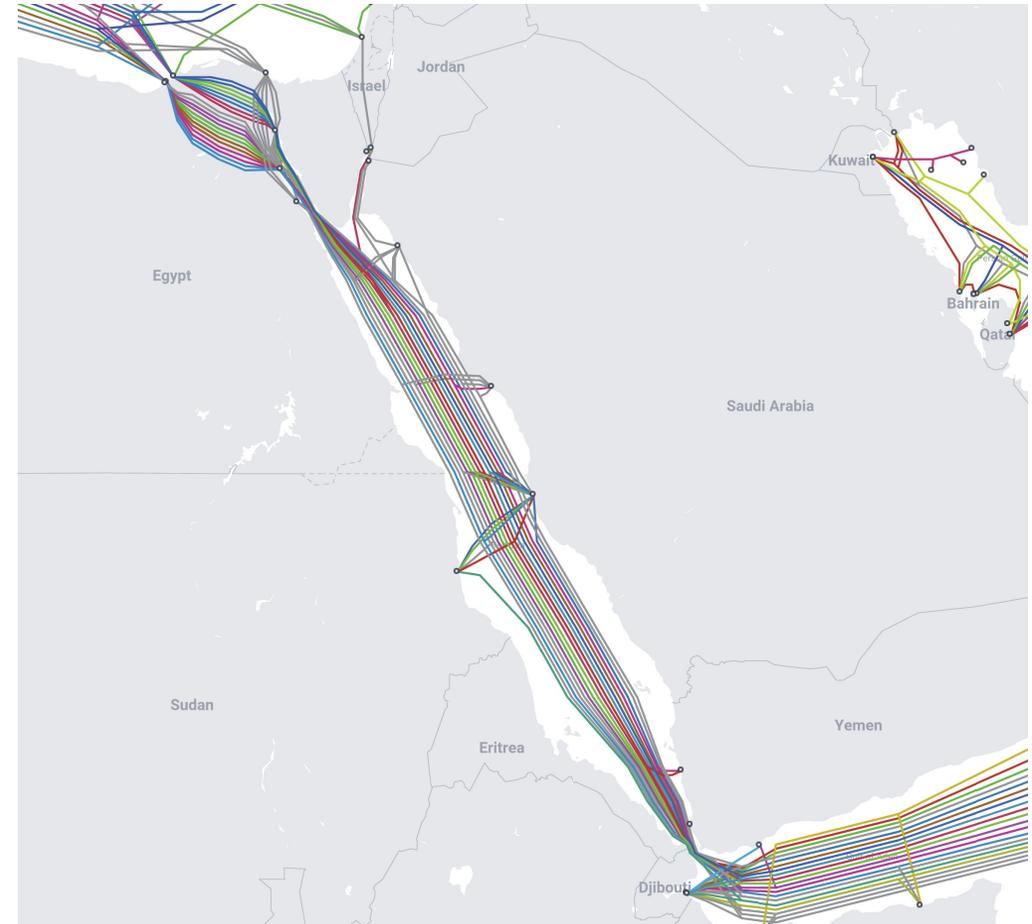
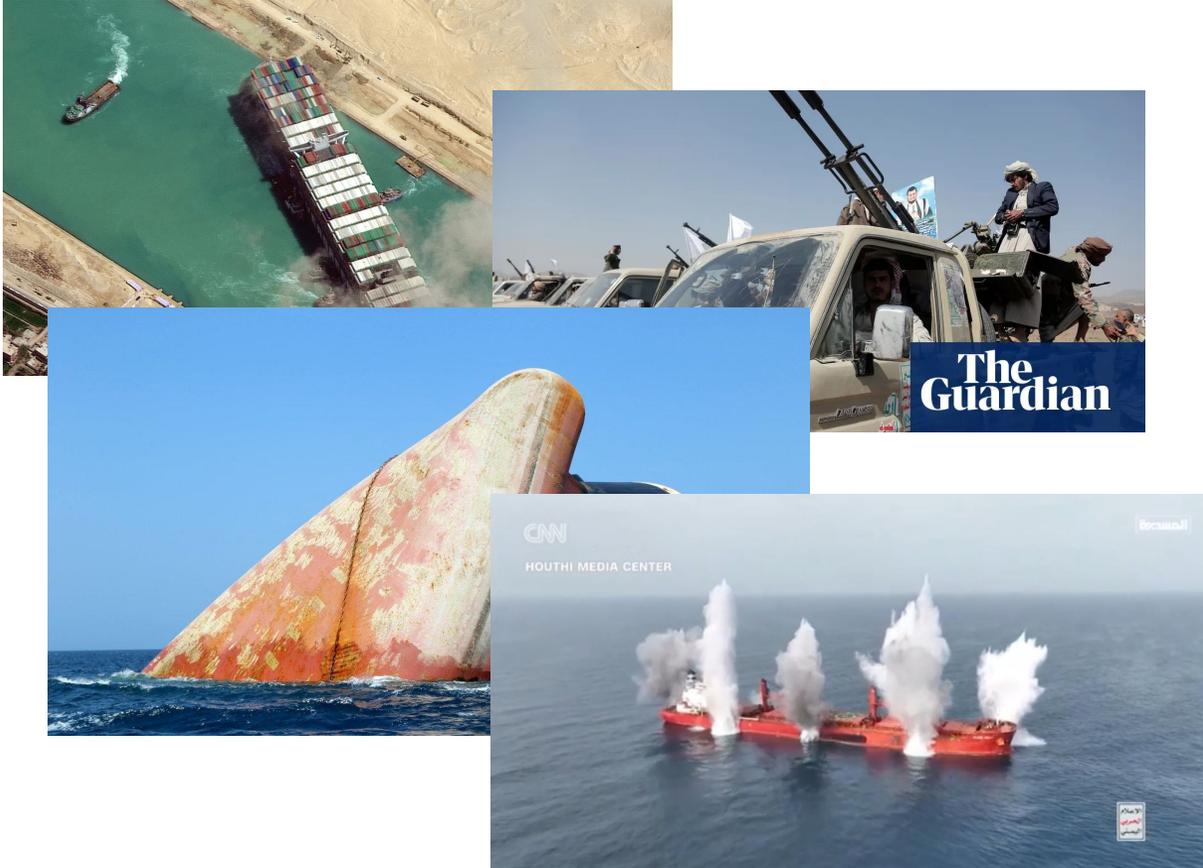


# Europe – Asia Connectivity Today

Long: ~30,000 km



>95% of the direct Europe – Asia traffic traverses a very narrow area



### Submarine Cable Map

The Submarine Cable Map is a free and regularly updated resource from [TeleGeography](#).



# Polar Connect: Strategic Resilience & Digital Autonomy

Shortest: ~10,000 km

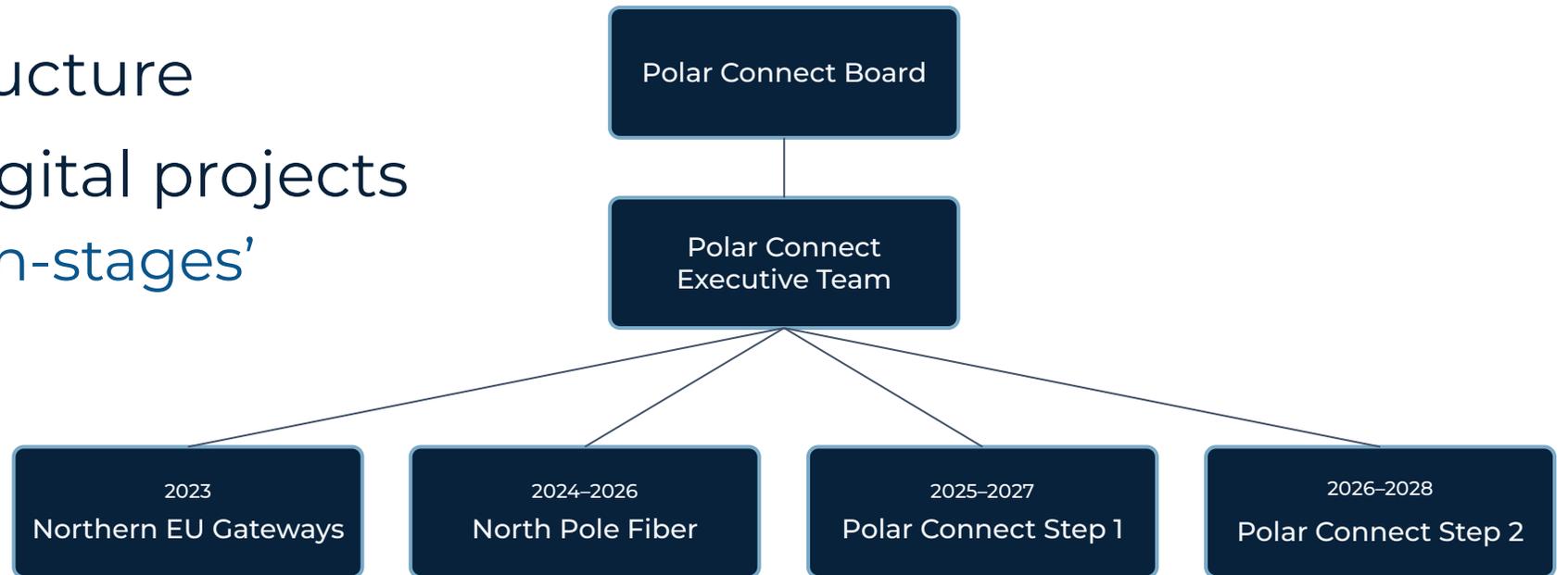


- Creates a **new transport corridor EU – East Asia** for the Internet at large
- **Complementary** to existing cables in the Red Sea area
- **Digital Resilience** – Strategic Digital Autonomy
- **Bringing digital economies closer together**
- **Shortest possible path** between EU and Japan



# Polar Connect – a Nordic Initiative

- Governance structure
- Multiple CEF Digital projects
  - ‘development-in-stages’



# Strong Support for Polar Connect



- **€ 10.8 mil** from the European Commission
  - Listed as Cable Project of European Interest (CPEI)



- **€ 10.8 mil** from the Swedish Government



- **€ 5.6 mil** from Nordic National Research and Education Networks



- Support letters from several EU countries and R&E Networks
- Partnerships: GlobalConnect, GÉANT, National Institute of Informatics/SINET



# CPEIs: Two new routes in the Arctic region

The estimated cost for two Arctic submarine cables:  
**EUR 4.289 billion**

Figure 3.7: Proposed cable route for Priority Area 2 [Source: Analysys Mason, 2026]



## EU Recommendation:

**2a) West Arctic passage cable,**  
connecting DE, DK (DK, GL), IE, SE  
and CA, IS, NO, JP, KR, US

**2b) Polar passage cable,**  
connecting DE, DK, SE and CA, JP,  
KR, NO, US.

CPEI: Cable Project of European Interest



# Central Arctic Ocean is largely unexplored



# About the Central Arctic Ocean

- Very deep – up to 4,000 meters deep
  - No icebergs threaten to damage the cable
- Covered by floating sea ice
  - 2-6 m thick
  - 2,000 km edge-to-edge in summer (expands horizontally in winter)
  - Different kinds of ice: 1 year vs multi-year ice
- Accessible in the winter with a heavy icebreaker (Polar Class 1-2)

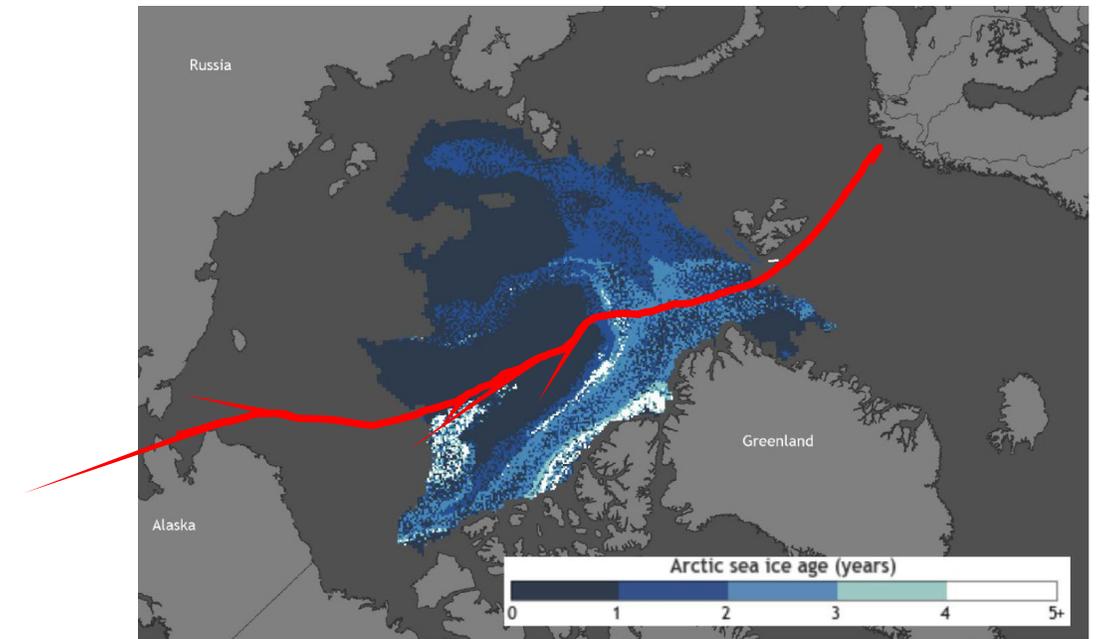
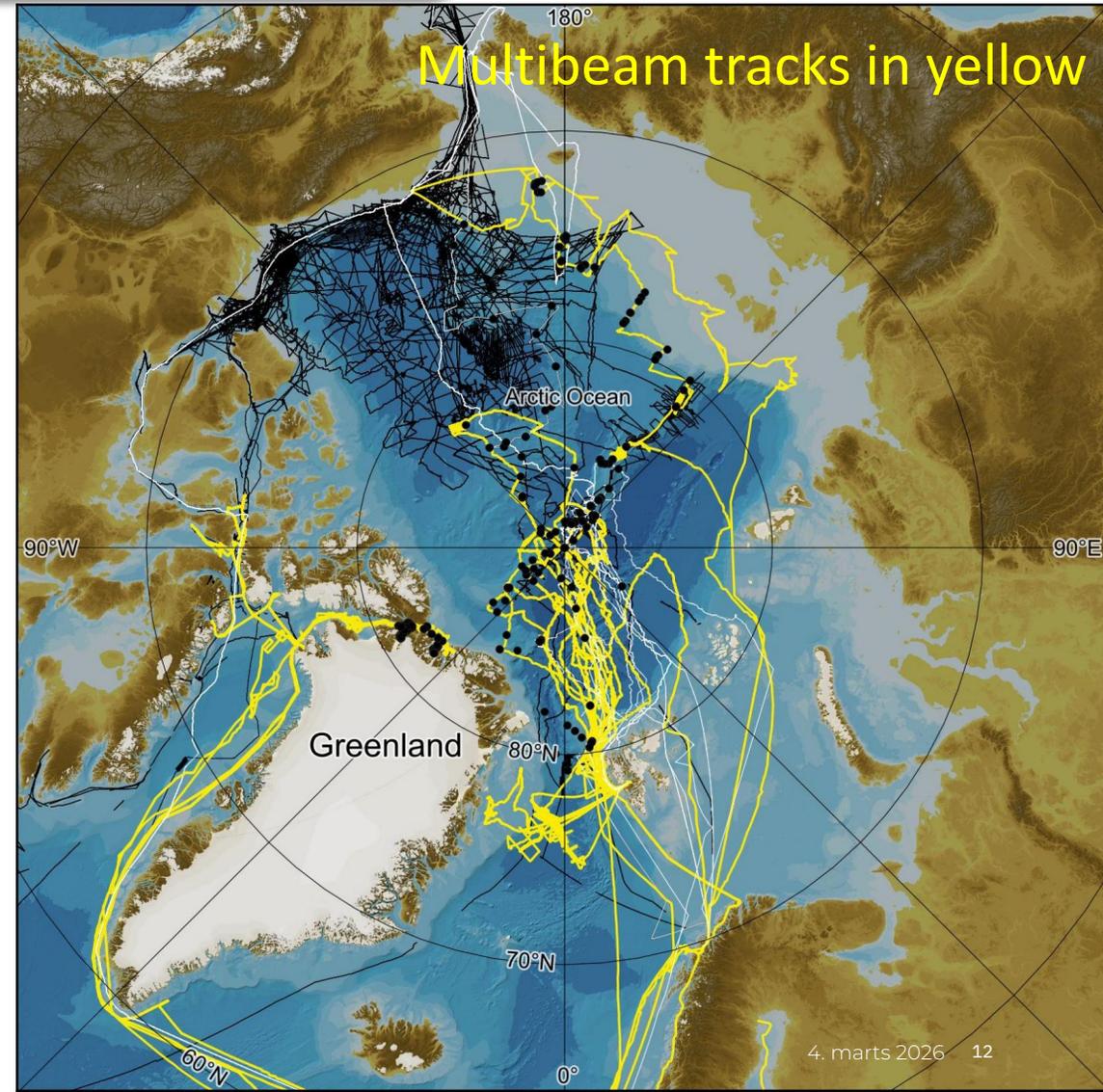


Image source: [NOAA Climate](#)  
Red line: tentative Polar Connect route



# Swedish Polar Research Secretariat (SPRS)

- Unique Arctic experience and access to the world's heaviest research icebreaker Oden
  - 27 Arctic expeditions with IB Oden since 1991
  - The captains of SPRS's crews are "ice whisperers"
  - Close collaboration with Canada



# How to deploy (and repair!) a fiber optic cable in the Arctic



# The need for a new Swedish research Icebreaker

DEBATT

## Öppna upp Arktis – investera i ny forskningsisbrytare

För att säkra vår långsiktiga närvaro och forskningskapacitet i Arktis måste processen för att anskaffa en ny svensk forskningsisbrytare snabbt gå framåt, skriver Vetenskapsrådets generaldirektör och rektorerna för Luleå tekniska universitet och Stockholms universitet.

Uppdaterad: 3 mars 2026, 09:52  
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Spara

**D** Debattredaktionen   
Text



Image credit: Concept illustration of the new polar research vessel by Peter Mild.

<https://www.di.se/debatt/oppna-upp-arktis-investera-i-ny-forskningsisbrytare/>

För att Sverige långsiktigt ska behålla sitt oberoende tillträde till Arktis krävs nu ett tydligt och skyndsamt beslut om en ny forskningsisbrytare, skriver Katarina Bjelke,





# Building a submarine cable system



Please note: Parallel tracks include e.g. working with potential Investors & Customers



# Expeditions to the Central Arctic Ocean for Polar connect (in 23-EU-DIG-PCI)



Swedish Research Icebreaker Oden



Canadian Coast Guard Ship Louis S. St-Laurent

- [Swedish Polar Research Secretariat](#) & [Natural Resources Canada](#) joint expedition 9 August – 19 September 2025 for Polar Connect:
  - Taking place within the framework of the UNCLOS program (United Nations Convention on the Law of the Sea)
  - Multi-beam bathymetry data collection
  - Sub-bottom profiling
- Summers of 2026 and 2027: Similar missions, in different areas



# Expeditions to the Central Arctic Ocean for Polar Connect



# Oden returned to Longyearbyen from the Central Arctic on 19 September 2025



# Sensors for Science on Polar Connect



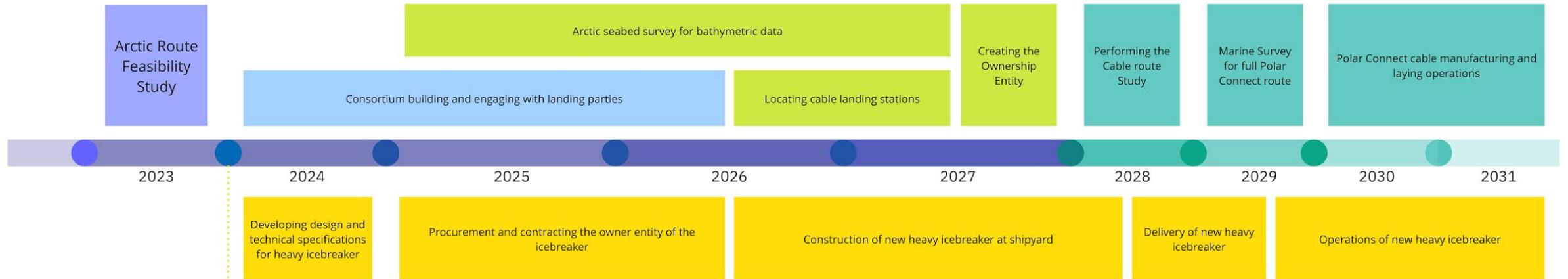
# Science Opportunities

- **Oceanography** (ocean temperature, internal waves, upwelling, current velocities, turbulent mixing, wave height)
- **Climate** (sea level change, ocean heat content, ocean circulation)
- **Geophysics / Seismology** (earthquakes, underwater volcanoes, tsunamis)
- **Marine Biology** (tracking mammals by their sound)

**AND:** secures digital connectivity between researchers in Europe for all fields of Science, HPC ...



# High-level Timeline for Polar Connect



# Benefits of Polar Connect

- **Shortest path** guarantees:
  - reduced latency
  - substantially improved connectivity between Europe and East Asia
  - increased digital trade
- Enabled **business opportunities** and **sustainable economic growth** for the regions connected and beyond by expanding global connectivity
- **Advancing scientific research** and **technological innovation** through integrated sensing capabilities and cross-sector collaboration
- **Arctic cable laying and repair is feasible** even in winter with the new icebreaker – new maintenance zone to be created





# Thank you for your attention

*The contents of this publication is the sole responsibility of NORDUnet and does not necessarily reflect the opinion of the European Union.*

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