

# Swedish Polar Research Secretariat

Promotes the conditions for and coordinates Swedish research and development in the polar regions



## **Viability of crossing the North Pole with a submarine cable**

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Director General, Swedish Polar  
Research Secretariat

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**SWEDISH POLAR  
RESEARCH SECRETARIAT**  
POLARFORSKNINGSSEKRETARIATET





## The Secretariat's mission

- » Promote and coordinate Swedish polar research
- » Follow and plan research and development
- » Organise and lead research expeditions
- » Create favourable conditions for polar research without fieldwork
- » International negotiations and partnerships
- » Represent Sweden in polar matters
- » Issues permits according to the Swedish Antarctic Ordinance (2006:1111)





## Infrastructure

- » Abisko Scientific Research Station
- » Wasa and Svea Research Stations
- » The icebreaker Oden
- » The research platforms are continuously developed and adapted to meet the needs of scientists

# Icebreaker Oden

- » One of the world's most powerful icebreakers
- » Four engines, 24,500 hp
- » Versatile scientific equipment; research containers, scientific laboratories, deep ocean winches
- » Researchers are able to use the vessel based on their needs
- » Has been used for marine geology, oceanography, ecological research and atmospheric research in the Arctic and Antarctica
- » Owned by the Swedish Maritime Administration, expeditions are organised by us





In year 1991 IB Oden was the first non nuclear powered research vessel to reach the North Pole together with the German PRV Polarsten





## Arctic Ocean Coring Expedition 2004 (ACEX)

Co-Chiefs:

Jan Backman, Stockholm University

Kate More, University of Rhode Island



**Tromsø-Tromsø:  
7 August – 14 September, 2004**

Slide composed by Prof Martin  
Jakobsson, Stockholm University



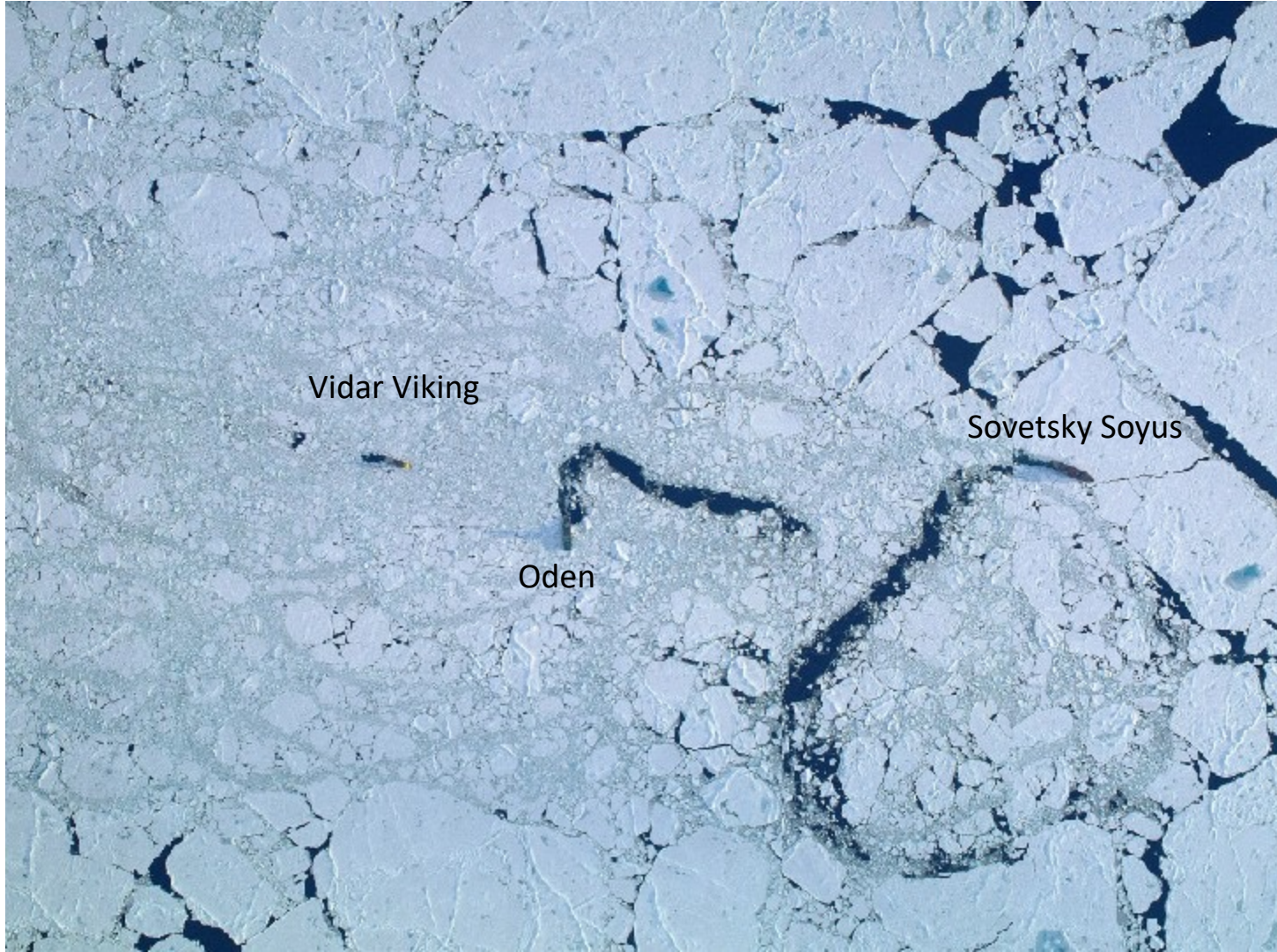


Foto: Per Frejvall

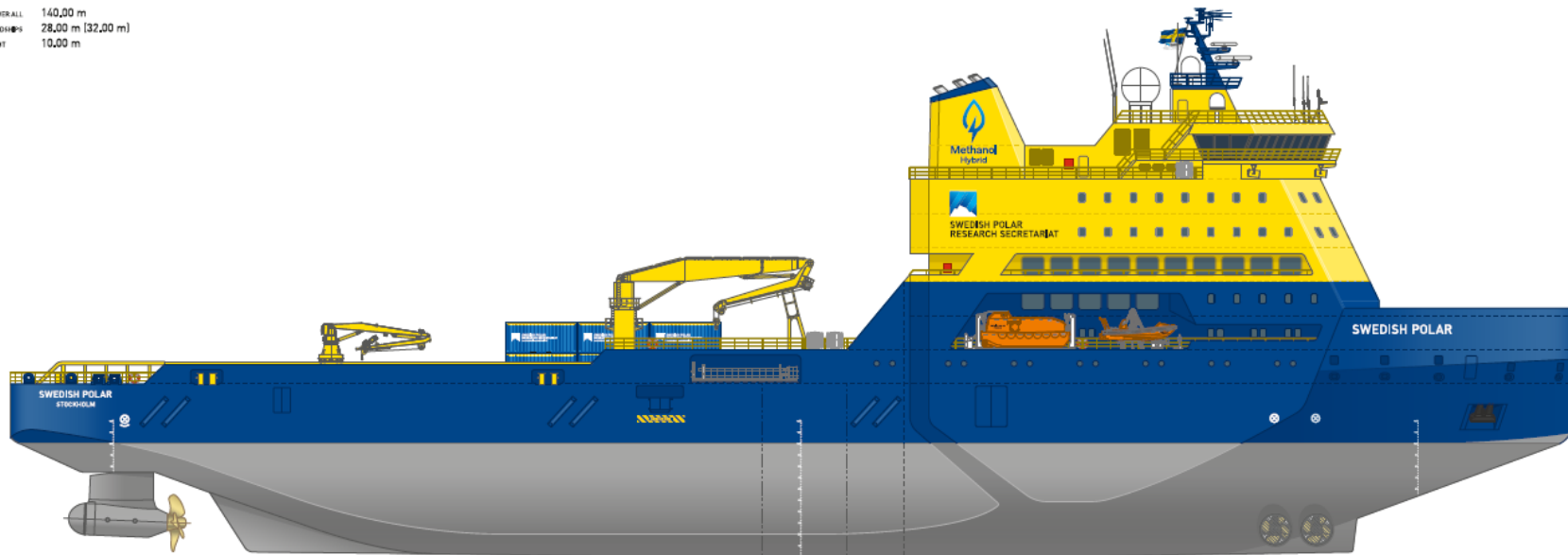
Slide composed by  
Prof Martin Jakobsson,  
Stockholm University

# SPRS ambition: a climate neutral research ice breaker highest Polar Class

## SWEDISH POLAR RESEARCH VESSEL HIGHEST POLAR CLASS ICEBREAKER

LENGTH OVER ALL 140,00 m  
BREADTH 28,00 m (32,00 m)  
DRAUGHT 10,00 m

 **POLARFORSKNINGS  
SEKRETARIATET**  
SWEDISH POLAR RESEARCH SECRETARIAT

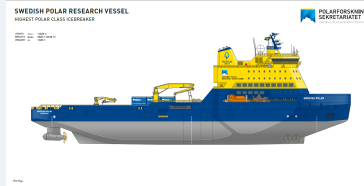




# Multipurpose climate neutral icebreaker for science & polar logistics : Main characteristics



- » Climate-neutral (fossil-free) fuel, eg e-methanol from biogenic/renewable sources via CO<sub>2</sub> and H<sub>2</sub> in combination with hybrid propulsion and power
- » No soot, minimum carbon footprint
- » Silent ship



- » Length around 140 m
- » Flexible lab setup (20' containers) & storage
- » Moon pool
- » Dynamic Position System DP2
- » Large aft deck, flexible use
- » PAX 100+



- » All year-round use



*Will we be able deploy the POLAR Connect cable? Yes!*  
Sweden has done something similar before



### **Exp 302 – Platforms at Sea**

Three platforms were used during the offshore phase of the Arctic Coring Expedition: the drillship *Vidar Viking* and two icebreakers, *Oden* and *Sovetskiy Soyuz* (7 August-15 September 2004).



# Polar Connect –a multi vessel approach in the Central Arctic Ocean (CAO)

We will apply a three-vessel set up successfully designed for our earlier operations at the north pole:

1. IB Oden will map the seabed in CAO prior the cable laying operation to locate optimal positioning of the cable path
2. An ice strengthened cable vessel will be supported with far and near ice management by two the strong Swedish icebreakers PC1 and PC2+ respectively
3. Estimated time for cable vessel 30+ days in heavy ice (2-3 kn)
4. System for connections and maintenance will be planned for
5. Plan for remediation
6. Full technical report will be delivered by SPRS to VR SUNET NORDUNET in September 2023

