



DestinE Sea Ice Decision Enhancement (DESIDE)

Photo: Andreas Cziferszky



Norwegian
Meteorological
Institute



The Danish
Meteorological
Institute



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE



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Context

- **Objectives**

- Aggregating diverse information sources to provide common products across jurisdictional boundaries.
- Producing new forecast products to improve decision-making by users.
- Customizing delivery of products to different user communities based on their needs.

- **Drivers**

- **Regulatory Compliance:** Deliver short and medium-term forecasts of ice, meteorological, and ocean conditions, meeting the requirements of the IMO Polar Code.
- **Climate Change Effects:** Provide long-term forecasts on changing ice and other conditions, enabling planning and policy development for the fishing, tourism, research, and oil and gas industries.

Benefits to Polar Operations and Society

- **Increased Safety:** Accurate information supports strategic and tactical decision-making, enhancing safety of life and property.
- **Pollution Reduction:** Efficient route optimization minimizes fuel consumption and emissions.
- **Protection of Sensitive Environmental Areas:** Better forecasts can help policymakers protect environmentally sensitive areas affected by changing polar conditions.



Photo: Beat Rinderknecht

Decision Support Levels

The Use Case will demonstrate the added value of the DestinE system in supporting policy and decision making at three levels within the context of polar operations:

- **Execution support:** supporting ships needing to avoid or navigate through sea ice.
- **Planning support:** supporting ship operators in planning for polar voyages, guided by the information requirements of the IMO Polar Code.
- **Strategy and policy support:** supporting organizations and policy analysts wanting to assess the impact of climate change on future decisions regarding polar operations.

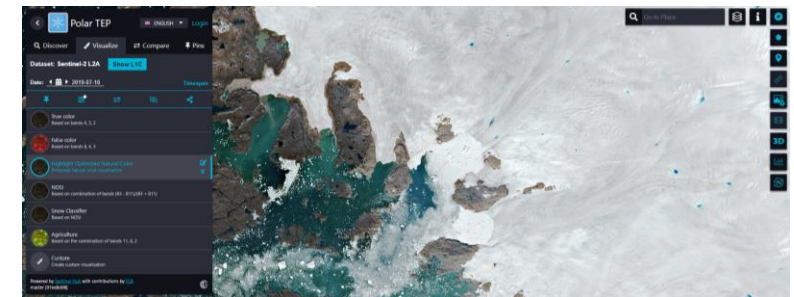
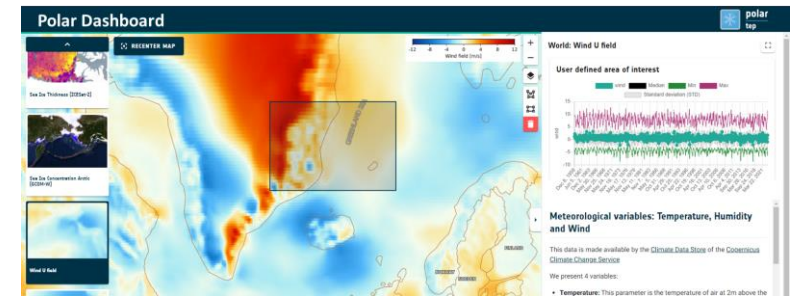
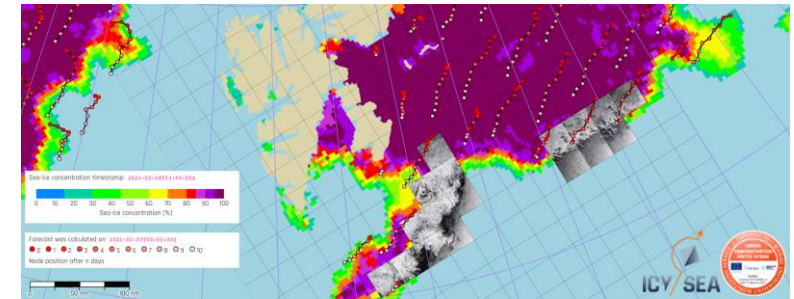
Use Case Workflow

- 1. Data Ingestion:** Collect past, current, and forecasted information on sea ice, snow thickness, icebergs, ocean currents and waves, wind, temperature, visibility, and Sentinel 1 imagery from DESP/DestinE.
- 2. Data Processing, Modeling, and Analysis:** Use models, machine learning, and algorithms to process data for different user communities.
- 3. Information Product Generation:** Create short, medium, and long-term sea ice charts, risk profiles, and route optimization suggestions for better decision-making.
- 4. Dissemination:** through decision support platforms.

Decision Support Platforms

Decision support will be provided in three ways to meet the different needs and levels of sophistication of user groups:

- **IcySea:** Tactical decision support for ships operating in polar regions.
- **Polar Dashboard:** Strategic decision support for policy analysts and residents.
- **Polar TEP:** Research collaboration platform for private, academic, and public sectors.



For More Information

David Arthurs

Managing Director

Polar View

Phone: +1 613 680 2282 x1

Email: david.arthurs@polarview.org

Polar TEP

polartep.polarview.org