Arctic Cross-Copernicus forecast products for sea Ice and iceBERGs

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No. 5
August 2025

ACCIBERG Project Newsletter

Iceberg forecast developments

Steady progress is being made in adding new features to the Lagrangian iceberg forecasting module, based on available Copernicus data. The new ACCIBERG iceberg forecasts will come in two forms 1) a risk forecast map, showing the evolution over the 10 coming days, to be available as a CMEMS forecast product and 2) a forecast-on-demand for specific icebergs, to be demonstrated by national ice services.

The iceberg module has been developed in OpenDrift, and is the first open source iceberg code. It uses simplified iceberg geometry (pinnacle, tabular, tilted tabular) to simulate physical processes such as drift, melt, roll-over and grounding. The module has now been released and is available freely online via Github, and it has been validated using the Canadian Ice Island Drift Database. New features have been tested such as lifting up grounded icebergs at high tides.

In order to demonstrate the module, new in situ datasets of iceberg trajectories will be collected this autumn from volunteers who will deploy GPS trackers on to icebergs for the project. The first project collaborator, Ponant Cruises, have deployed two buoys already, and a third one will released in September. The buoys are dropped onto the icebergs via drone or helicopter and will track the iceberg until it melts. Project partner MET Norway will also deploy 10 drifters during upcoming cruises.

Improvements in the iceberg detection in SAR imagery were reported in the previous newsletter. Since then Sentinel 1C was smoothly integrated into production. Work continues on the use of the Radarsat Constellation Mission to improve detection further.

Picture: A buoy deployed from Ponant's helicopter. Photo: Niko Dubreuil (SEDNA expeditions)

ACCIBERG on Copernicus' EDITO Platform and MetNo's Værio Platform

The software developed in ACCIBERG for both sea ice (ICECAP) and iceberg (OpenBerg) forecasts is designed to be deployed on the European Digital Twin of the Ocean (EDITO), where the aim is to bring the users to the data, not the data to the users.

Project partner Mercator are ahead of schedule in preparing the first version of the cloud-computing platform, with the demonstrator ready for engagement with end users. Proof of concept data products and applications are already available for sea-ice forecasts days to months ahead on the EDITO platform.

EDITO is planned to be the public access point for the iceberg forecasts, but in order to serve national authorities, Værio, METNO's front end platform for professional users, will be used as well. This is a dashboard-based weather portal used among others by national emergency services in Norway.

ACCIBERG at the UN Ocean Conference 2025

Together with our project partners from Mercator Océan Intl., Laurent Bertino joined the UN Ocean Conference, held in Nice, France in June 2025, to present the ACCIBERG project. Laurent joined the European Digital Twin Ocean platform at the European Digital Ocean Pavilion "La Baleine" on Thursday 5th June to demonstrate forecasting sea ice and icebergs on EDITO.

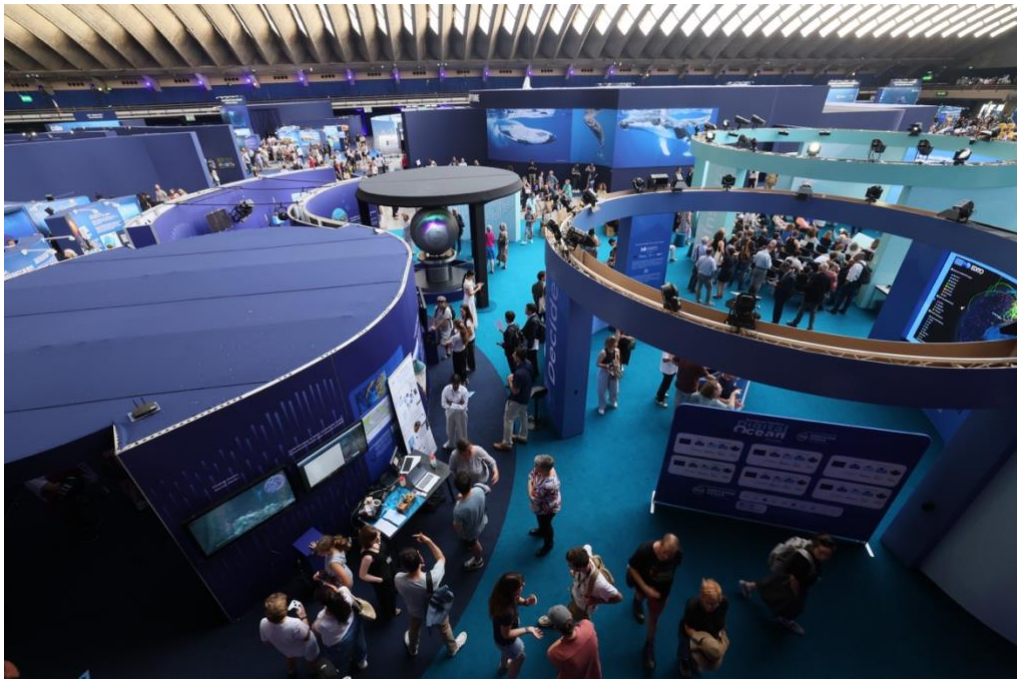

Photo: the European Digital Ocean Pavilion at the UN Ocean Conference, Nice June 2025. *Mercator Ocean International / Philippe Fitte*

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101081568