



Baltic Sea Ice Thickness Charts

Timely and variable information on sea ice conditions is essential for all marine operations in ice-covered areas. The safety and efficiency of sea transportation, off-shore operations, fisheries and other activities in regions covered by sea ice have been the motive for establishing Polar View's enhanced sea ice monitoring and forecasting services.

Polar View's ice information service provides SAR-based digital ice thickness charts over the Baltic Sea. Ice thickness charts are generated after each operationally satellite image is received (Radarsat-1 and ScanSAR Envisat ASAR WSM modes) at the Finnish Institute of Marine Research (FIMR) and are delivered operationally to ships and made available via the internet. The product uses the ground truth, derived from the most recent digitized ice chart, and satellite information as its input. FIMR's ice thickness charts support both safe shipping and route planning during the Baltic Sea ice season.

Charts are available to users approximately 30 minutes after satellite data downloading and can be accessed at <http://polarview.fimr.fi>.

Main User Segment: Ships

Service Provider

The Finnish Institute of Marine Research (FIMR) is a research institute operating under the Ministry of Transport and Communications Finland. It generates information in the sea sciences for the benefit of decision-makers and to meet operational needs. The Institute was founded in 1918.

FIMR performs research in marine physics, biology and chemistry. The main research areas are the Baltic Sea and other polar seas.

FIMR offers services to the authorities, industry, commerce and private citizens. It also actively participates in pertinent national and international collaborations.

<http://www.fimr.fi>

Geographical Coverage _____

The Baltic Sea (latitudes 57-66 deg., longitudes 16-30 deg.).

Current Users _____

Icebreakers (Finnish, Swedish), Finstashtip Ltd, Ice Advisors Ltd. A large number of web users.

Benefits and Impacts of the Service _____

During the last ten years, the marine traffic in the Baltic Sea has increased by over 30% and the trend is expected to continue. In the same period, however, the number of icebreakers has not increased. Safe and efficient ship operations has been possible due to better ice monitoring, where use of satellite data has become increasingly important. Icebreakers need detailed ice information for route planning.

Although national ice services are providing ice information on a daily basis, there is an additional requirement for higher resolution data as well as forecasts. Polar View's service provides this enhanced information on both an hourly and daily basis. This information can be delivered directly to the ship or accessed via the Internet.

Training Available _____

Training is available to Finnish and Swedish icebreaker officers. Other training is available on request.

Technical Specifications _____

Platforms: 3GHz Pentium 4 PC, 1GB RAM (computation platform), 1Mbit/s (internet connection to FIS), Apple Xserve G5 dual-powerpc 2GHz, 2 GB RAM (web server)

Sensor: Radarsat-1, Envisat ASAR

Spatial Coverage: about 400 (Envisat) – 500 km (Radarsat-1)

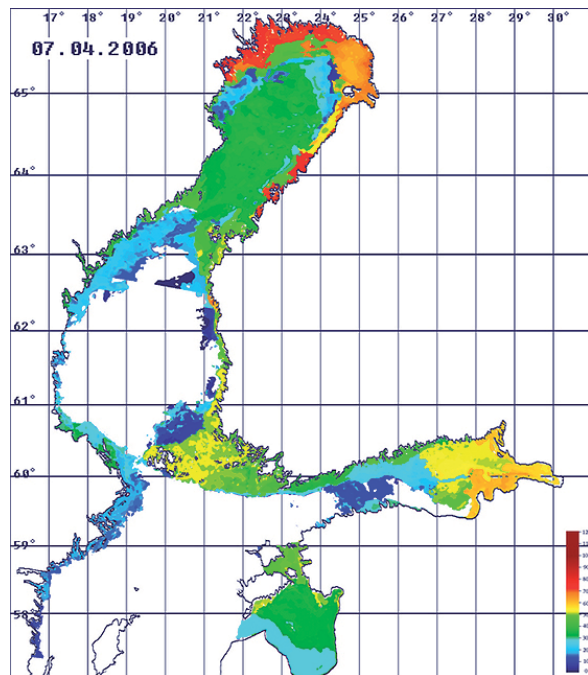
Spatial Resolution: 500 m(product), SAR inputs about 100 m

Availability of Data: every 3-5 days (both Radarsat-1 and Envisat)

Duration of Season: Baltic Sea ice season (December to May)

What is Polar View? _____

Polar View offers integrated monitoring and forecasting services in the Polar Regions as well as mid-latitude areas using satellite earth observation data to support improved decision-making, planning and adaptation to climate change. Polar View is funded by the European Space Agency (ESA) under the GSE programme, which promotes the utilization of satellites for public good and in support of public policy. Our services take the form of enhanced sea ice information (charts and forecasts), snow maps and glacier and iceberg monitoring data. We also provide monitoring services of lake and river ice, ice-edge and coastal erosion. Polar View services support safe and cost-effective marine operations, improved water management and marine environmental security.



Example of an Ice Thickness Chart

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