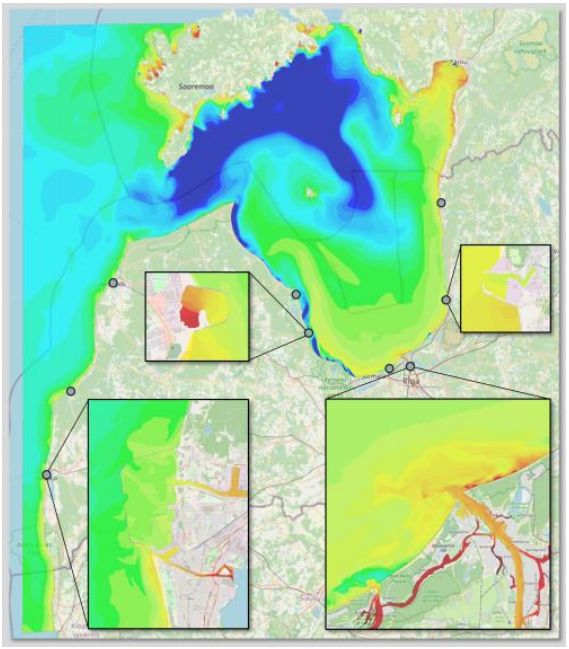
Seamless Forecasting for Latvian Seaports, Bridging the Gap Between Inner Ports and Open Seas

Powered by SIA "Procesu analīzes un izpētes centrs"

Coastal Services

Trade & Marine Navigation

Overview



Latvia's Baltic Sea coast has a dozen of ports. The three larger are international business hubs, while smaller are bustling with myriads of local cargo, fisherman and leisure vessels. Information on the sea state is vital for decision support to ensure safe vessel traffic within port areas. The HywasPort service offers the modelled parameter forecasts in the port aquatories since 2020. Yet, the information gap is looming in port approaches for vessels leaving or entering the ports. Inner port models do not cover this area while open sea models lack an expected spatial resolution. Closing this gap is crucial due distinct variation in physical conditions at the entrances of the harbours.

The enhanced service now provides continuous hydrodynamical and wave fields in the port aquatories and the outer coastal region – navigation channels, sea gates, anchoring areas. The nesting of models allows for seamless transition between the inner port and marine coastal forecasts of waves, currents, sea level, sea temperature, salinity, and wind. The service is available for eight harbours of Latvia. The observations by end users and the third parties are available within the service.

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Because of significant changes in physical conditions (waves, cross-currents, siltation) at the harbour entrances, end users – from port authorities, harbour masters, dredging business to local fishermen and leisure yachtsmen – have expressed their wish for a forecast product which provides seamless transition of the sea state data within and outside the ports in a single visualization platform. The enhanced service fully meets these user expectations by providing a single access point and decision support and planning tool for both the port authorities, businesses and the seamen. The system fosters the navigation safety.
The service is developed by SIA 'Procesu analīzes un izpētes centrs'. It uses Copernicus Marine services as the boundary conditions for a HirombBOOS oceanographic coastal model in an operational setup by University of Latvia.
This Use Case was funded by the Copernicus Marine Service User Engagement Programme 2022-2028.

Products used

Baltic Sea Physics Analysis and Forecast

Baltic Sea Wave Analysis and Forecast

Other data used: observations by end users and 3rd parties

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Benefits for users

- Port authorities - decision support for short term planning of port operations
- Harbour master offices - information support for pilot, navigation, berthing operations. Support for both ongoing operations and their short-term planning.
- Other actors in port authorities (shipowners, route operators, tourism, leisure) - hind and forecast of physical conditions in the port and approaches to the port.

The service provides the main benefit - seamless integration of physical fields in- and outside port, as well as modelled and observed entities in a single application.

Useful links

SIA "Procesu analīzes un izpētes centrs"

HywasPort system

Institute of Numerical modelling, University of Latvia

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