

The Wind of Change

Improving the resilience of European maritime transport through effective weather monitoring



The inadequate response to recent natural disasters from transport providers and operators has highlighted the pressing need to developing an effective framework for tackling the challenges presented by extreme weather, particularly in the maritime environment. Vaisala's position as an established world leader in weather observation equipment and services for offshore, coastal and ship-board applications puts it in an ideal seat to make a valuable contribution to the marine transport element of the MOWE-IT project. Therefore as a key participant in the project, Vaisala is contributing its knowledge and experience to the development of standards and mechanisms that aim to ensure safer and more efficient maritime operations, both on the open sea and in near-shore and port environments.

Having already highlighted the increasing importance of a well-functioning transport network to mobility and commerce in a 2011 white paper, the European Commission is now aiming to identify best practices

and develop methodologies to mitigate the impact of extreme weather, through its MOWE-IT project. With regard to waterborne transport, the project will assess the potential for the utilization of new weather monitoring

technologies for improving operational decision-making and, therefore, safety by enabling vessels to respond in real-time to changing conditions and potential threats such as high winds and storms.

If it works on roads, why not on water?

There are useful lessons to be learned from the advances made in road transport weather management. The pioneering of thermal mapping and the use of weather stations to provide real-time observational data to road operators and forecasters allowed decision-makers to make better-informed decisions by comparing forecasts to real-world conditions. Furthermore, this data also helped forecasters themselves improve their services and models. Advanced weather monitoring systems such as those provided by Vaisala have both cut costs and significantly improved safety for road authorities the world over, by using applied meteorology to better manage the effects and costs of severe weather.

In the maritime environment the prevailing perception is that current forecasting methods and practices are still not performing to the required level. Operators continue to blame poor forecasting for increased fuel costs, and negative impacts on profit and schedules. A common complaint among forecasters, on the other hand, is a lack of reliable observational data, which is critical to analyzing forecasting accuracy and adjusting it for local conditions. For maritime transport, improving confidence in forecasting and, therefore, operational decision-making, hinges on the ability to provide site-specific forecasts based on reliable observational data.

Shaping the future of forecasting

Vaisala is participating in the waterborne transport work package of MOWE-IT, which aims to identify the impact of extreme weather on maritime transport, both on the open sea and in near-shore and port environments. In terms of open-sea operations, the aim is to develop a set of standards for forecasting changes in conditions in order that vessels can take the necessary precautions to avoid the impacts of extreme weather. For near-shore and port environments, experiences from selected European ports will be gathered and analyzed in order to assess the performance of early warning mechanisms that combine real-time observational data with 24-hour forecasting to provide stakeholders with early warning of potential severe conditions. In these environments, strong winds can be especially disruptive and dangerous, particularly for smaller vessels. Expanding site-specific forecasts to include wind mapping for entire port areas, or even across seas and oceans via on-board observational data, has great potential for improving efficiency and safety in both near-shore and open-sea environments.

Rising to the challenge

There are of course risks and challenges when it comes to ensuring data reliability. For example, due to poor sensor positioning the reliability of wind data is questionable in many European ports. In addition, these

systems must be supported by robust maintenance processes if they are to provide continuous, reliable data. Upfront and ongoing costs relating to observation hardware and services should be viewed as an investment in operational efficiency and safety. With rising fuel costs, shipping operators should look to more weather-efficient, safer routing enabled by investments in reliable on-board observational equipment. Port operators, on the other hand, can increase competitiveness with accurate weather information and prediction helping to make terminals more attractive in terms of safety and reliability.

As a reputable independent provider with long experience in applied meteorology, Vaisala can determine optimal sensor locations, install equipment or supervise installation by a third party, and also provide the hardware, software, and services for data gathering, quality control, and dissemination, as well as solutions for ongoing maintenance. Our position as an established world leader in weather observation equipment and services for offshore, coastal, and ship-board applications puts it in an ideal position to make a valuable contribution to the marine transport element of the MOWE-IT project. The ultimate goal of our ongoing dialog with shipping operators, port authorities, and forecasting agencies is to identify how we can add value for all stakeholders in the maritime transport network and support the European Commission in achieving its goal of a resilient and reliable waterborne transport network.

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