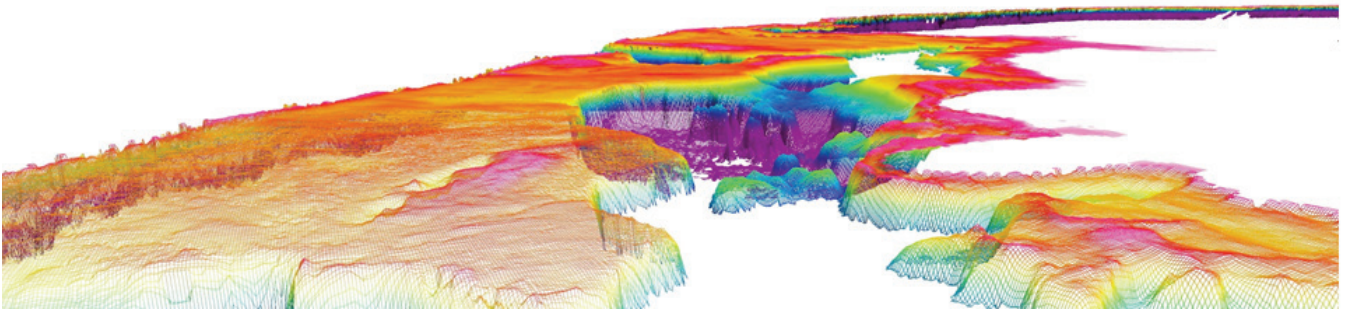# BASE PLATFORM: PORTAL FOR SATELLITE-DERIVED BATHYMETRY
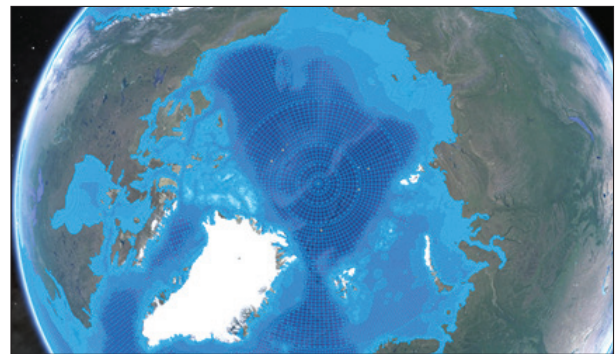

BASE Platform is a project with EU Horizon 2020 support that combines a number of highly cost-effective approaches to bathymetric surveying. The aim is to demonstrate and validate performance and accuracy, to show how the survey results can best be integrated with other sources of bathymetric data, and to make the data available through a portal. Deltares worked on the project in a consortium with DLR, isardSAT, EOMAP, Smartcom, F!ND and MARIS.

Bathymetry is a key element in a wide range of fields and applications such as physical oceanography, marine geology, geophysics, biology, and navigation safety. Nautical charts are based mainly on data acquired during bathymetric surveys. However, there are still some large areas that are not charted accurately enough and the existing data is outdated in other areas. Some locations are difficult to reach and traditional surveying is expensive in most of them.

Recently, the use of remote sensing with optical, radar-altimeter and SAR sensors has become accepted more and more as an adjunct to the traditional survey methods. BASE Platform is a commercial provider of high-resolution Satellite-Derived Bathymetry (SDB) and Crowdsourcing Data Bathymetry (CSB). The BASE Platform provides water-depth data for coastal, nearshore and offshore areas. The information on the platform is created using advanced algorithms in combination with multispectral satellite imagery. Moreover, the Global Tide and Surge Model (GTSM) developed by Deltares provides tidal information for the harmonisation of vertical data.

Bathymetry products range from Optical Bathymetry (high resolution in shallow water) and Synthetic Aperture Radar (SAR) Bathymetry (moderate resolution for intermediate water depths) to Altimetry Bathymetry (deep and open oceans with low resolution). Additionally, Crowd Sourcing Bathymetry gathers data from vessels operating in an area to produce first tracks and then an adaptive sparse grid. Merged Bathymetry data comes from multiple sources, resolutions, formats and accuracy. BASE Platform offers a seamlessly integrated bathymetry dataset created using advanced and efficient merging techniques. Tidal information is provided via GTSM, a forecasting system for predicting storm surges on a global scale.

Bathymetry has historically been expensive due to the need for on-site collection methods, making it costly and unfeasible for small projects and certain industries. Due to advances in technology and the development of Satellite Derived Bathymetry, it is becoming more affordable. BASE Platform can now make it available for different sectors such as coastal risk management, the fishing industry, port and harbours, oil and gas, offshore wind farms, submarine cables, the dredging industry, and the modelling and research community. Test data were provided for four trial locations: Balearic Islands, Channel Islands, Mauritius and Wadden Sea. The users of these data were EMODnet, the Ministry of Environment, Sustainable Development, Disaster and Beach Management in the Republic of Mauritius and German water and nature authorities. After two years of funding, the BASE Platform portal is fully operational and ready to meet market demand. 🅩

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Further reading:
https://base-platform.com