

## EMODnet Hydrography - Seabed Mapping - Bathymetry projects Producing a high resolution digital bathymetry for European sea basins

In December 2007 the European Parliament and Council adopted the Marine Strategy Framework Directive (MSFD) which aims to achieve environmentally healthy marine waters by 2020. This Directive includes an initiative for an overarching European Marine Observation and Data Network (EMODnet).

The EMODnet Hydrography - Seabed Mapping - Bathymetry projects made good progress in developing the EMODnet Bathymetry portal to provide overview and access to available bathymetric survey datasets and to generate an harmonised digital bathymetry for Europe's sea basins. Up till February 2014 more than 9200 bathymetric survey datasets, managed by 15 data centres from 9 countries and originated from 131 institutes, have been gathered and populated in the EMODnet Bathymetry Data Discovery and Access service, adopting SeaDataNet standards. These datasets have been used as input for analysing and generating the EMODnet digital terrain model (DTM), for the following sea basins:

- the Greater North Sea, including the Kattegat and stretches of water such as Fair Isle, Cromarty, Forth, Forties, Dover, Wight, and Portland
- the English Channel and Celtic Seas
- Western and Central Mediterranean Sea and Ionian Sea
- Bay of Biscay, Iberian coast and North-East Atlantic
- Adriatic Sea
- Aegean - Levantine Sea (Eastern Mediterranean)
- Azores - Madeira EEZ

This is being extended to full European coverage around June 2014 by including also the Baltic Sea, Black Sea, Norwegian and Icelandic Seas, and Canary Islands. For the Baltic Sea synergy takes place with the Baltic Sea Bathymetry Database project of the Baltic Sea Hydrographic Commission.

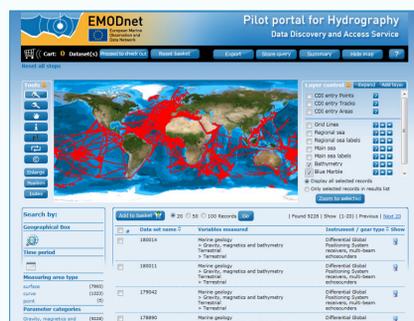


Figure 1: CDI Data Discovery and Access Service - overview of selected survey data sets

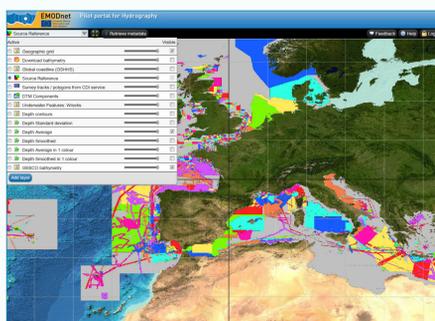


Figure 2: Hydrography Data Product Viewing Service - layers menu and layer indicating data sources used for the resulting DTM

The Hydrography Viewing service gives users wide functionality for viewing and downloading the EMODnet digital bathymetry:

- water depth in gridded form on a DTM grid of a quarter a minute of longitude and latitude
- option to view QC parameters of individual DTM cells and references to source data
- option to download DTM tiles in different formats: ESRI ASCII, XYZ, CSV, NetCDF (CF), GeoTiff and SD for Fledermaus 3D viewer software
- option for users to create their Personal Layer and to upload multibeam survey ASCII datasets for automatic processing into personal DTMs following the EMODnet standards

The NetCDF (CF) DTM files are fit for use in a special 3D Viewer software package which is based on the existing open source NASA World Wind JSK application. It has been developed in the frame of the EU FP7 Geo-Seas project (another sibling of SeaDataNet for marine geological and geophysical data) and is freely available. The 3D viewer also supports the ingestion of WMS overlay maps.

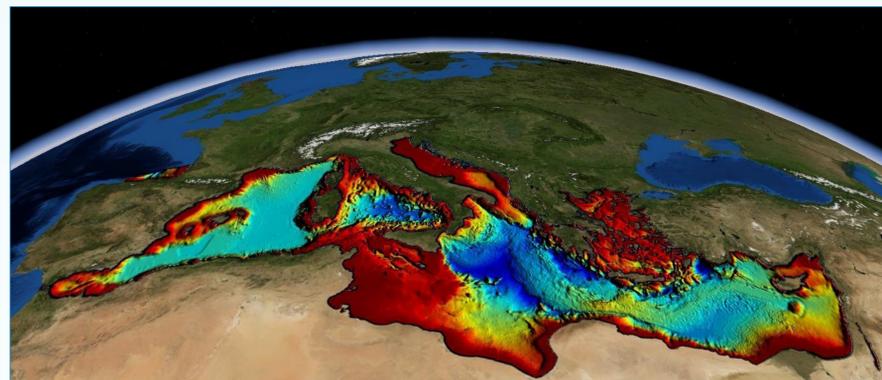


Figure 3: 3D Viewer - example view for the Mediterranean Sea

The EMODnet consortium is actively seeking cooperation with additional Hydrographic Offices, research institutes, authorities and private organisations for more data sets (single and multibeam surveys, sounding tracks, composite products) to contribute to an even better geographical coverage. These datasets will be used for upgrading and extending the EMODnet regional Digital Terrain Models (DTM). The datasets themselves are not distributed but described in the metadata service, giving clear information about the background survey data used for the DTM, their access restrictions, originators and distributors and facilitating requests by users to originators. This way the portal provides originators of bathymetric data sets an attractive shop window for promoting their data sets to potential users, without losing control.

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