



EMODnet High Resolution Seabed Mapping – further developing a high resolution digital bathymetry for European seas

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Access to marine data is a key issue for the EU Marine Strategy Framework Directive and the EU Marine Knowledge 2020 agenda and includes the European Marine Observation and Data Network (EMODnet) initiative. EMODnet aims at assembling European marine data, data products and metadata from diverse sources in a uniform way. The EMODnet data infrastructure is developed through a stepwise approach in three major phases. Currently EMODnet is entering its 3rd phase with operational portals providing access to marine data for bathymetry, geology, physics, chemistry, biology, seabed habitats and human activities, complemented by checkpoint projects, analysing the fitness for purpose of data provision.

The EMODnet Bathymetry project has developed Digital Terrain Models (DTM) for the European seas. These have been produced from survey and aggregated data sets that are indexed with metadata by adopting the SeaDataNet Catalogue services. SeaDataNet is a network of major oceanographic data centres around the European seas that manage, operate and further develop a pan-European infrastructure for marine and ocean data management. The latest EMODnet Bathymetry DTM release has a resolution of 1/8 arcminute * 1/8 arcminute and covers all European sea regions. Use has been made of circa 7800 gathered survey datasets and composite DTMs from 27 European data providers from 15 countries. For areas without coverage use has been made of the latest GEBCO DTM. The catalogue services and the generated EMODnet DTM have been published at the dedicated EMODnet Bathymetry portal which includes a versatile DTM viewing service that also supports downloading in various formats.

End December 2016 the Bathymetry project has been succeeded by EMODnet High Resolution Seabed Mapping (HRSM) as part of the third phase of EMODnet. This new project will continue gathering of bathymetric in-situ data sets with extra efforts for near coastal waters and coastal zones. In addition Satellite Derived Bathymetry data will be included and in particular to fill gaps in coverage of the coastal zones. The data and composite DTMs will increase the coverage of the European seas and its coastlines, and provide input for producing an EMODnet DTM with a common resolution of 3 arc seconds versus 1/8 arc minutes at present. Moreover local DTMs with even higher resolutions will be produced, where data and data providers permit. The Bathymetry Viewing and Download service will be upgraded to provide a multi-resolution map and including 3D viewing. The higher resolution DTMs will also be used to determine best-estimates of the European coastline for a range of tidal levels (HAT, MHW, MSL, Chart Datum, LAT), thereby making use of a tidal model for Europe. Extra challenges will be 'moving to the cloud' and setting up an EMODnet Collaborative Virtual Environment (CVE) for producing the EMODnet DTMs.

The presentation will highlight key details of EMODnet Bathymetry results and the way how challenges of the new HRSM project are approached.