EMODnet Bathymetry

Seabed 2030 5th SaWPaC Regional Mapping Community Meeting,
Lima, Peru, 12 – 14 July 2023
The European Marine Observation and Data Network (EMODnet) was created in 2009 by DGMARE to unlock fragmented and hidden marine data resources, making these available to individuals, organizations and businesses without restrictions.

Secretariat is based in Oostende Belgium

Why EMODnet?

Every year, the EU & its Member States invest a huge amount in marine observations and data collection.

Most of this data ends up in different databases and systems scattered around Europe and is difficult to find, access, assemble and use.

EMODnet is making a difference
7 Thematic areas

Central Portal - emodnet.ec.europa.eu
Gateway to all EMODnet data resources and tools allowing users to retrieve data layers from multiple themes

EMODnet Secretariat

EMODnet Timeline

2009
- Limited sea basins
- 59 Institutes

2013
- Low resolution all basins
- 120 Institutes

2017
- Multi-resolution
- Over 150 Institutes

Beyond 2020
- Further increase volume, coverage & resolution of data resources
- All data & products made available directly via EMODnet Central Portal emodnet.ec.europa.eu
- Expand the network of data providers, users and associated partners
- EMODnet and Copernicus Marine Service for the EU marine data space

1 Ingestion Portal facilitating submission of new datasets
**Benefits**

**More productivity:** Avoid costs of repeated collection of data by improving access to already existing data in compatible formats.

**More innovation:** Anyone (including SMEs) can build value-added services using data from different sources.

**Less uncertainty:** Better access to data improves forecasts of the behaviour of the seas, reducing costs of protecting life and property in coastal areas and offshore.

**Adding value to your own data:** Sharing data with EMODnet allows your own data to be combined with data from others to generate better value-added products and information and supports the global open data movement.
Bathymetry
Contribution to GEBCO Global grid
- Bring together bathymetric data of European and Caribbean seas
- Provide common method to identify, access and process survey data
- Generate a harmonised Digital Elevation Model of approximately 100m
- Make source and product metadata available
- Collaborate with main organisations from outside EU to support global compilations (GEBCO, Seabed2030, NOAA, IHO, ...).
EMODnet Bathymetry Consortium

+40 collaborating organisations (as HOs, Research Institutes, SMEs)
common methodology

Ifremer GLOBE software

local data provider

Sea basin coordinator

local data provider

local data provider

local data provider

local data provider

local data provider

local data provider

EMODnet DTM integration

void filling

GEBCO grid
sea basin coordinators
DATA PROVIDERS disparate datasets (DTMs, grids, pointclouds)

Native data is transformed and reprojected for use in Globe by regional coordinators

Source data

Globe

Coronis
3D mesh generator

GGSgc workbench

PostGIS

Multi band grids

Blob storage

3D terrain server

Webserver

OpenLayers

EMODnet Bathymetry
REST services

Download service

EMODnet Bathymetry
Portal

TOMCAT JAVA J2EE Server

Services

WFS

CSW

WMS/WMTS

GeoServer

Mapping schemas

SeaDataNet services

GeoNetwork

GeoTIff

32 bit + RGB + Shape

Metadata infrastructure

SeaDataNet

Sextant

Marine-Id

Inspire clients

FTP (Inspire)Webservices

Inspire Metadata

Mikado

QA/QC Integration interpolation smoothing

Oceanwise Wreck and obstructions service

GEBCO undersea feature service

Dedicated OpenStreetMap service

GEBO grid

EMODnet

Bathymetry

Portal
All survey metadata (CDI) is stored in SeaDataNet and accessible through the CDI service.

All composite DTM metadata (CPRD) is stored in Sextant (Ifremer) and accessible through the Central Portal catalogue.
Results so far (2022 DTM)

- A total of 21647 unique CDI references are now used in the DTM (16138 in the 2020 version)
- A total of 143 unique composite DTM references are used in the DTM (122 in the 2020 version)
- 3.75 arc seconds (1/16 arc minute)
- 12.5 Billion grid cells with 10 data bands each (min max mean etc)
- 245 High resolution datasets
EMODnet Bathymetry World Base Layer

- GEBCO global grid (2018)
- EMODnet DTM 2020
- Global 30 meter land DTM
- WMTS up to zoom level 11
- https://tiles.emodnet-bathymetry.eu/
EMODnet Central Portal

EMODnet Central Portal

DTM
EMODnet Central Portal

Coastlines
EMODnet Central Portal
Source references
EMODnet Central Portal
3D viewer (Cesium)
EMODnet Central Portal
High Resolution data
EMODnet Central Portal
High Resolution data
Key indicators

• 130k unique visitors per year
• 45k returning visitors
• 40k downloads of the DTM
• 2500 downloads of HR datasets
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