



EMODnet



European Marine
Observation and
Data Network

Your gateway to marine data in Europe

EMODnet Bathymetry

Seabed 2030 5th SaWPAC Regional
Mapping Community Meeting,
Lima, Peru, 12 – 14 July 2023

George Spoelstra
**EMODnet Data
integrator**



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

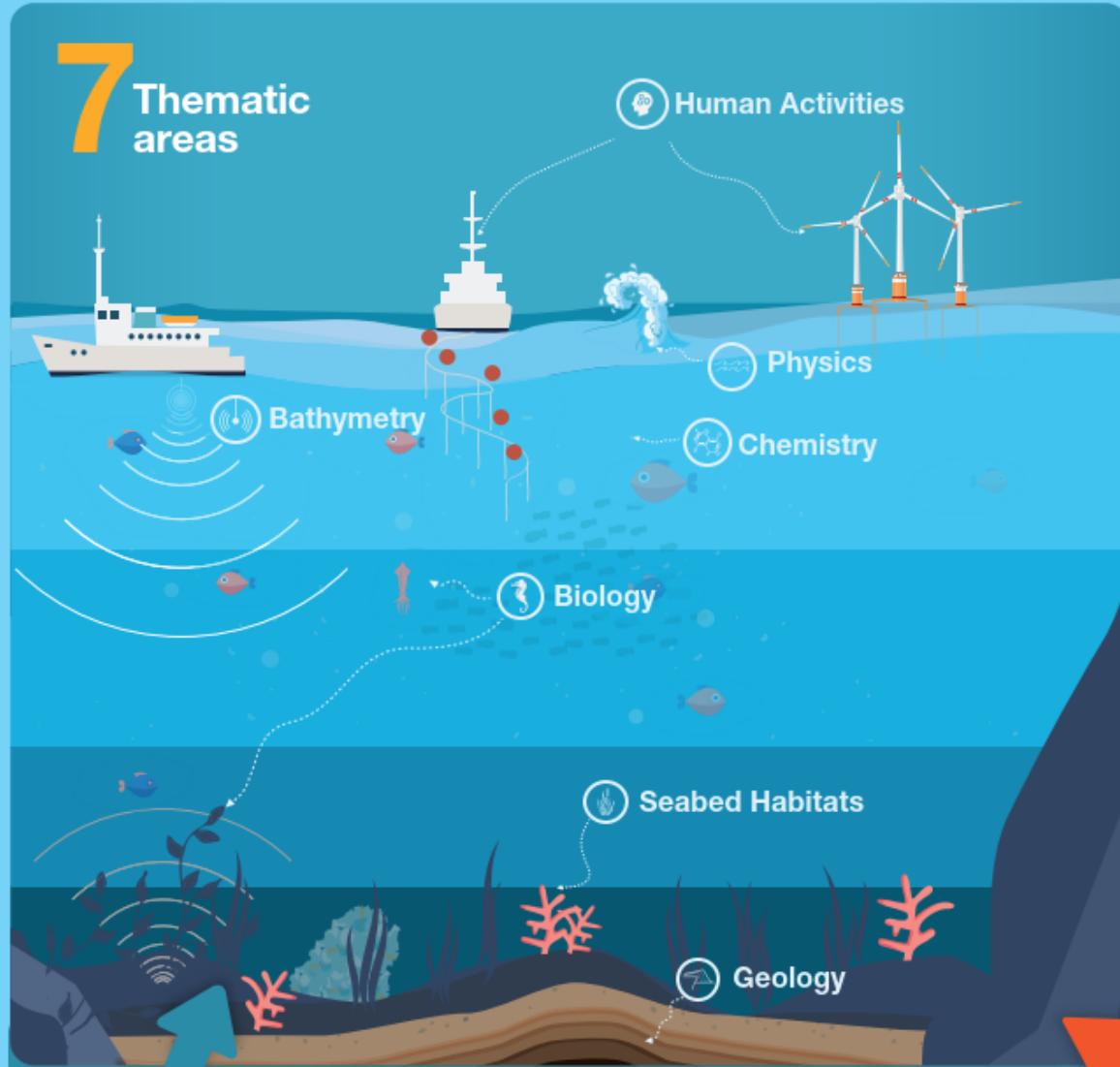
Why EMODnet?

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



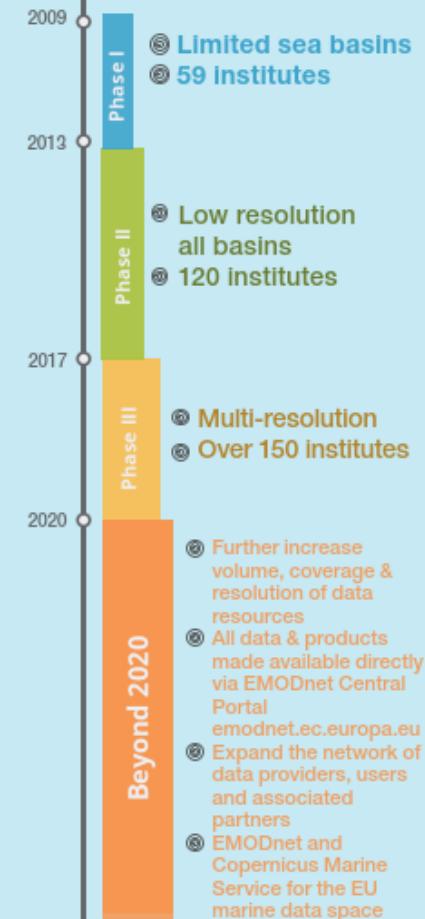


1

Central Portal - emodnet.ec.europa.eu

Gateway to all EMODnet data resources and tools allowing users to retrieve data layers from multiple themes

EMODnet Timeline



1

Ingestion Portal

facilitating submission of new datasets

EMODnet Secretariat



Benefits

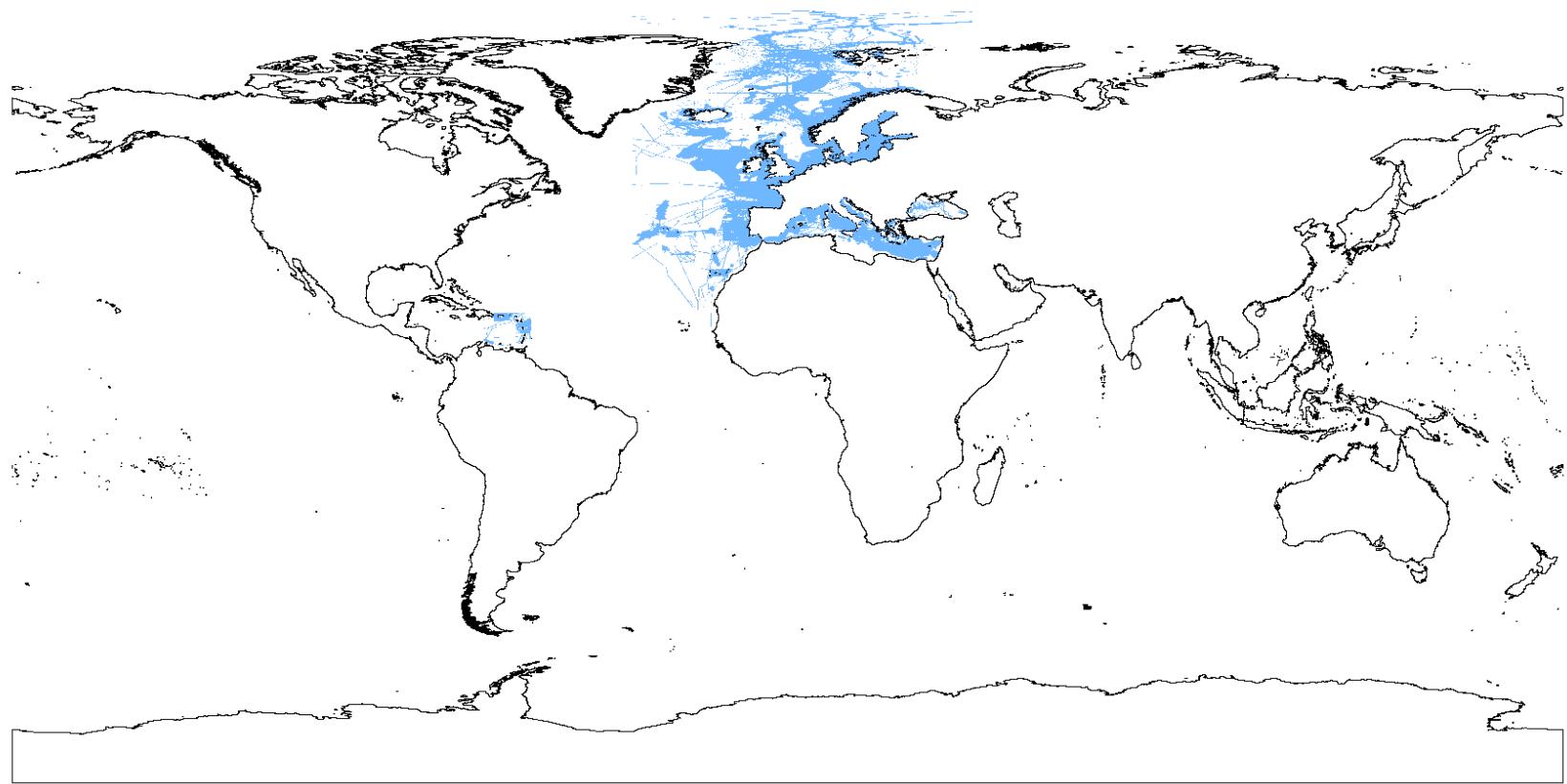
-  **More productivity:** Avoid costs of repeated collection of data by improving access to already existing data in compatible formats
-  **More innovation:** Anyone (including SMEs) can build value-added services using data from different sources
-  **Less uncertainty:** Better access to data improves 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.



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Bathymetry Contribution to GEBCO Global grid





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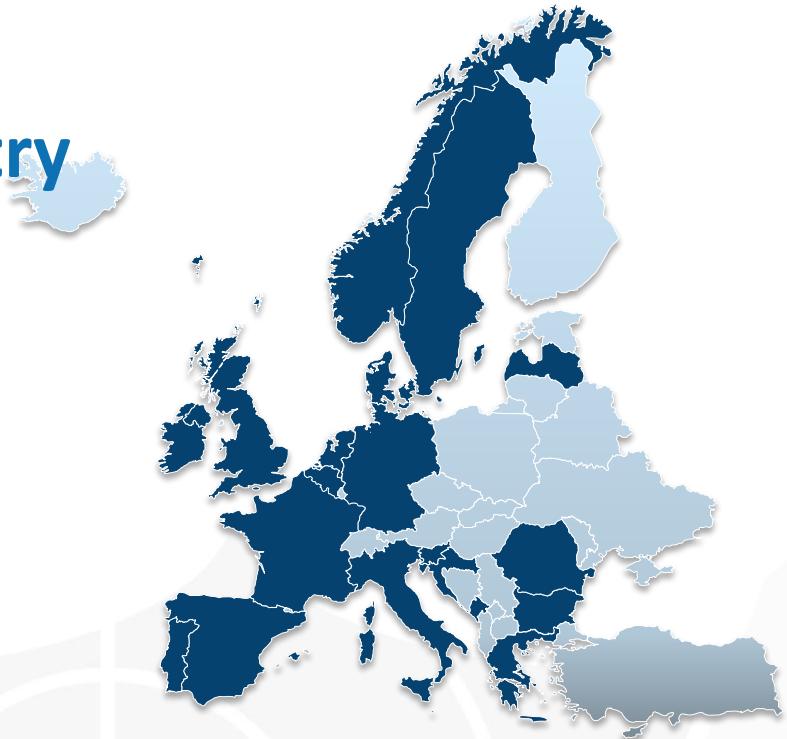
- Bring together bathymetric data of European and Caribbean seas
- Provide common method to identify, access and process survey data
- Generate a harmonised Digital Elevation Model of approximately 100m
- Make source and product metadata available
- Collaborate with main organisations from outside EU to support global compilations (GEBCO, Seabed2030, NOAA, IHO, ...).

EMODnet Bathymetry: global objectives





EMODnet Bathymetry Consortium



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

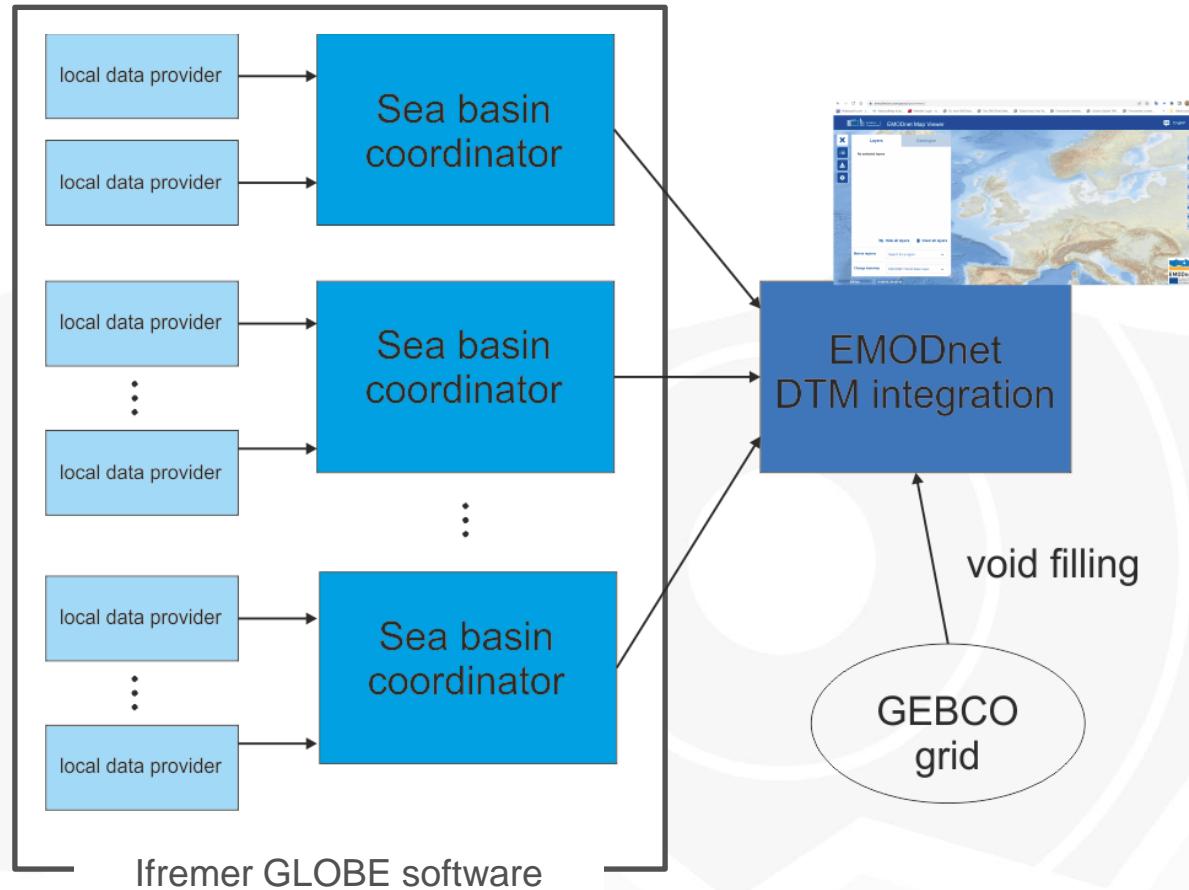




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common methodology

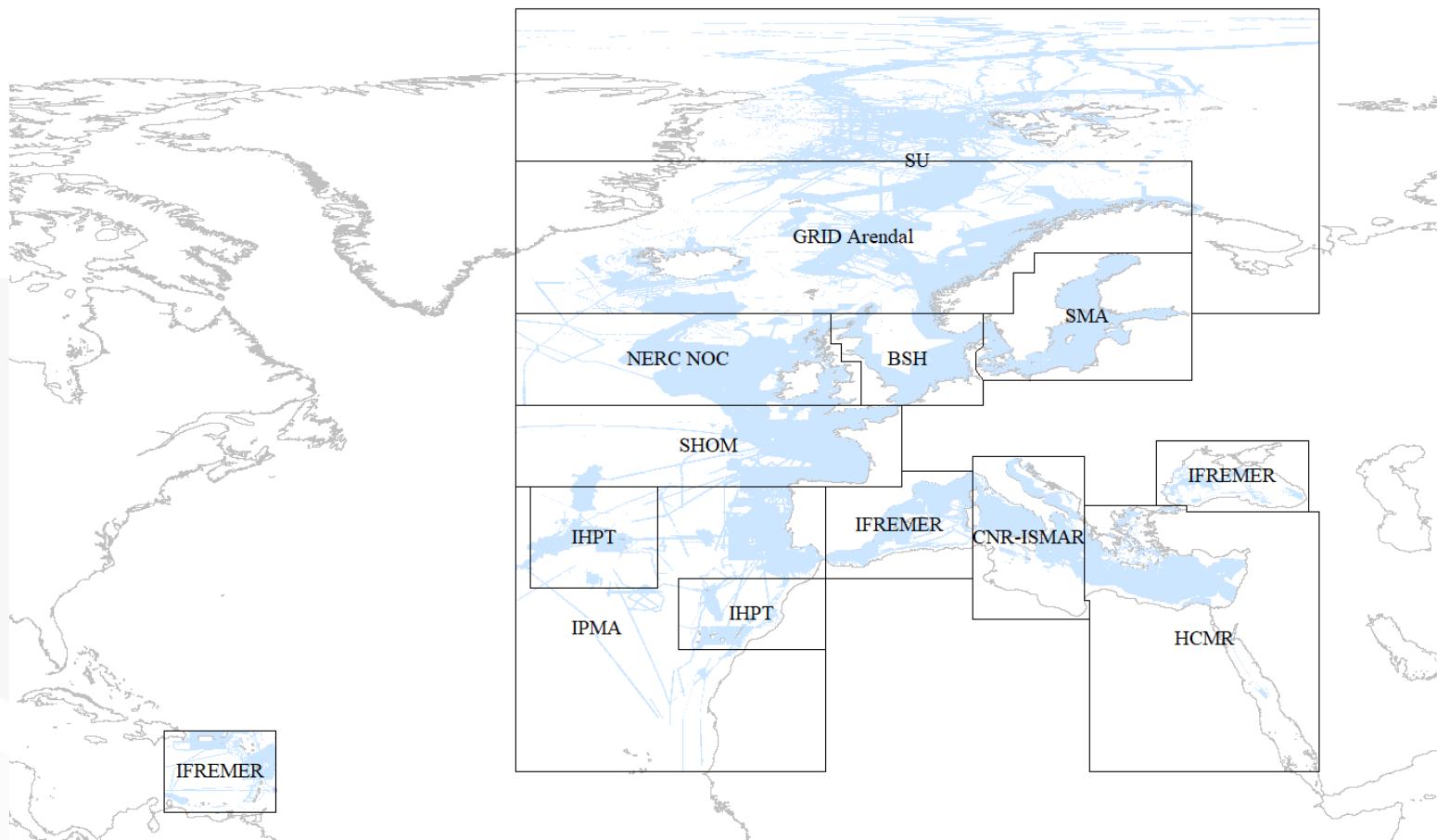




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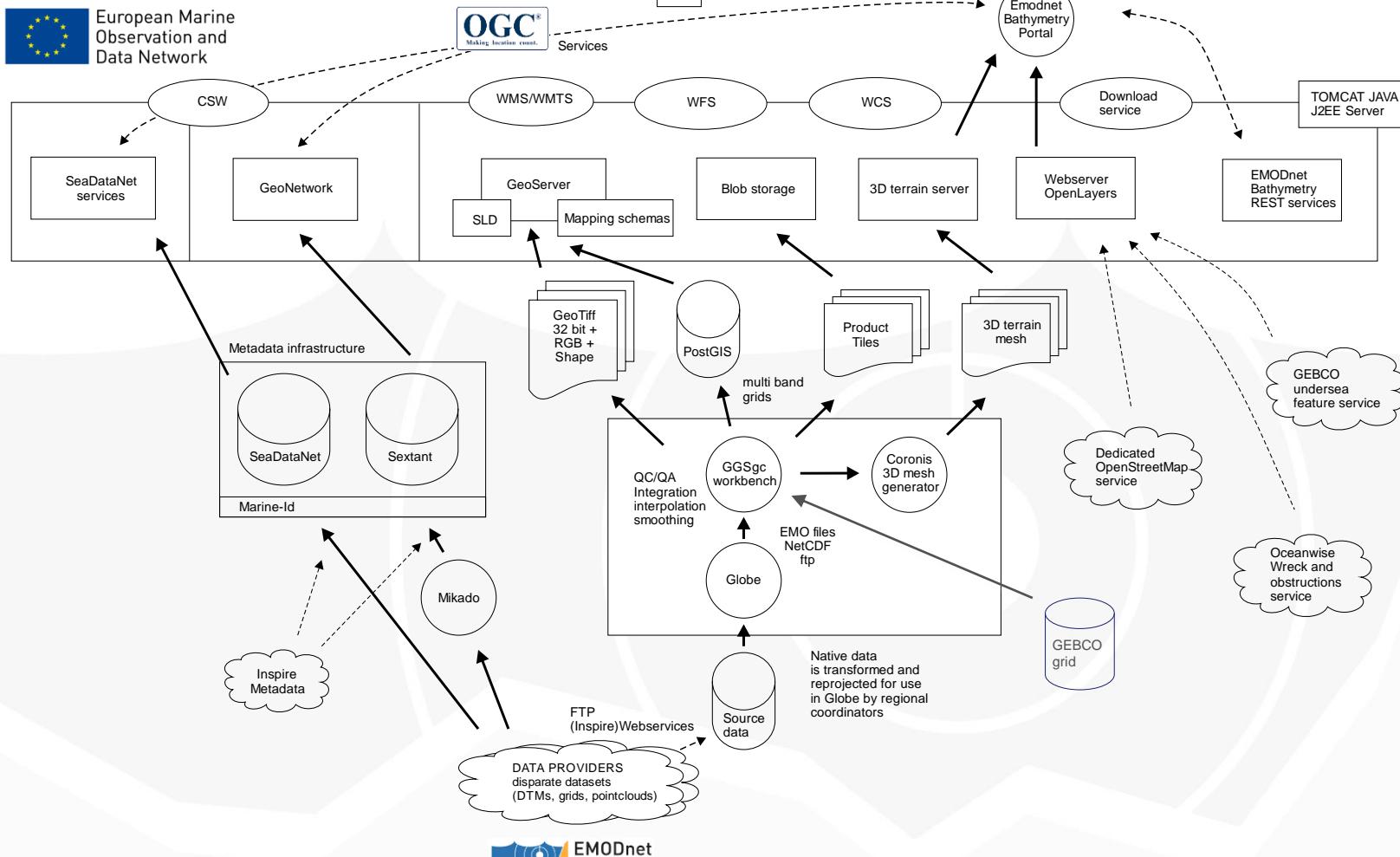
sea basin coordinators



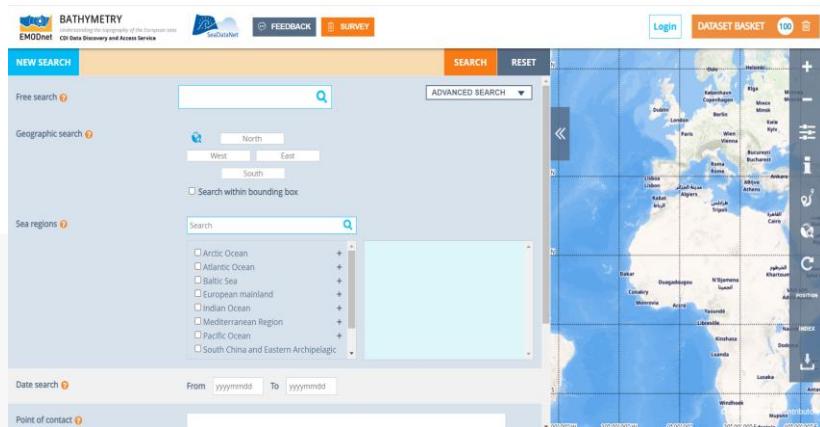


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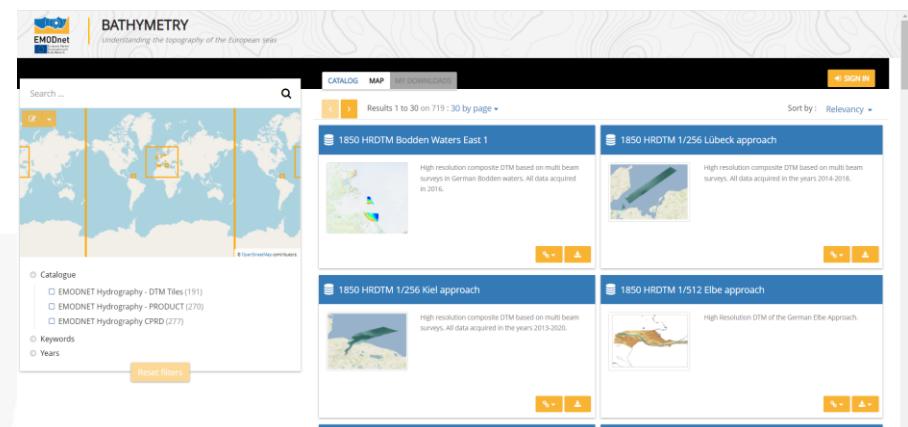
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Process flow and services (metadata)



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)

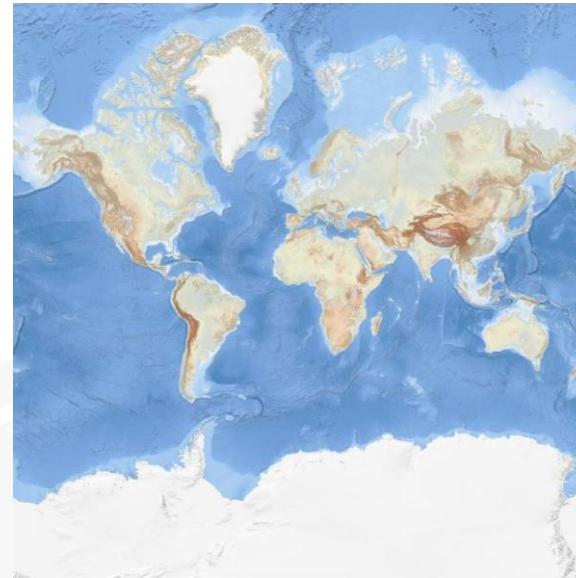
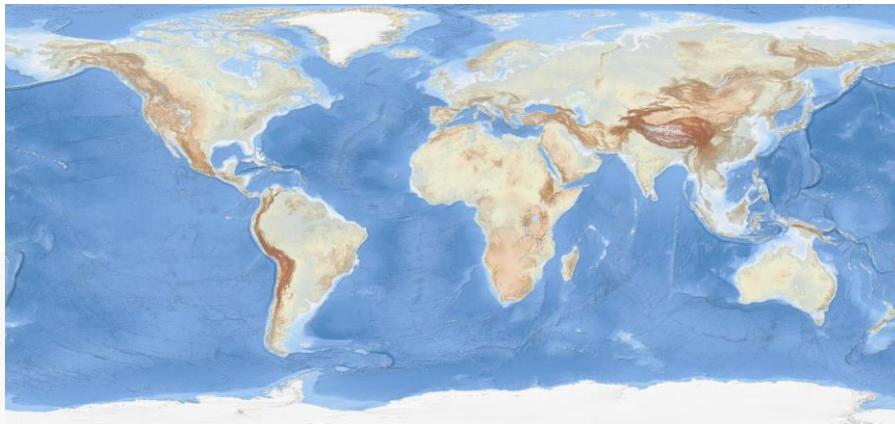
- A total of 21647 unique CDI references are now used in the DTM (16138 in the 2020 version)
- A total of 143 unique composite DTM references are used in the DTM (122 in the 2020 version)
- 3.75 arc seconds (1/16 arc minute)
- 12.5 Billion grid cells with 10 data bands each (min max mean etc)
- 245 High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



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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/>

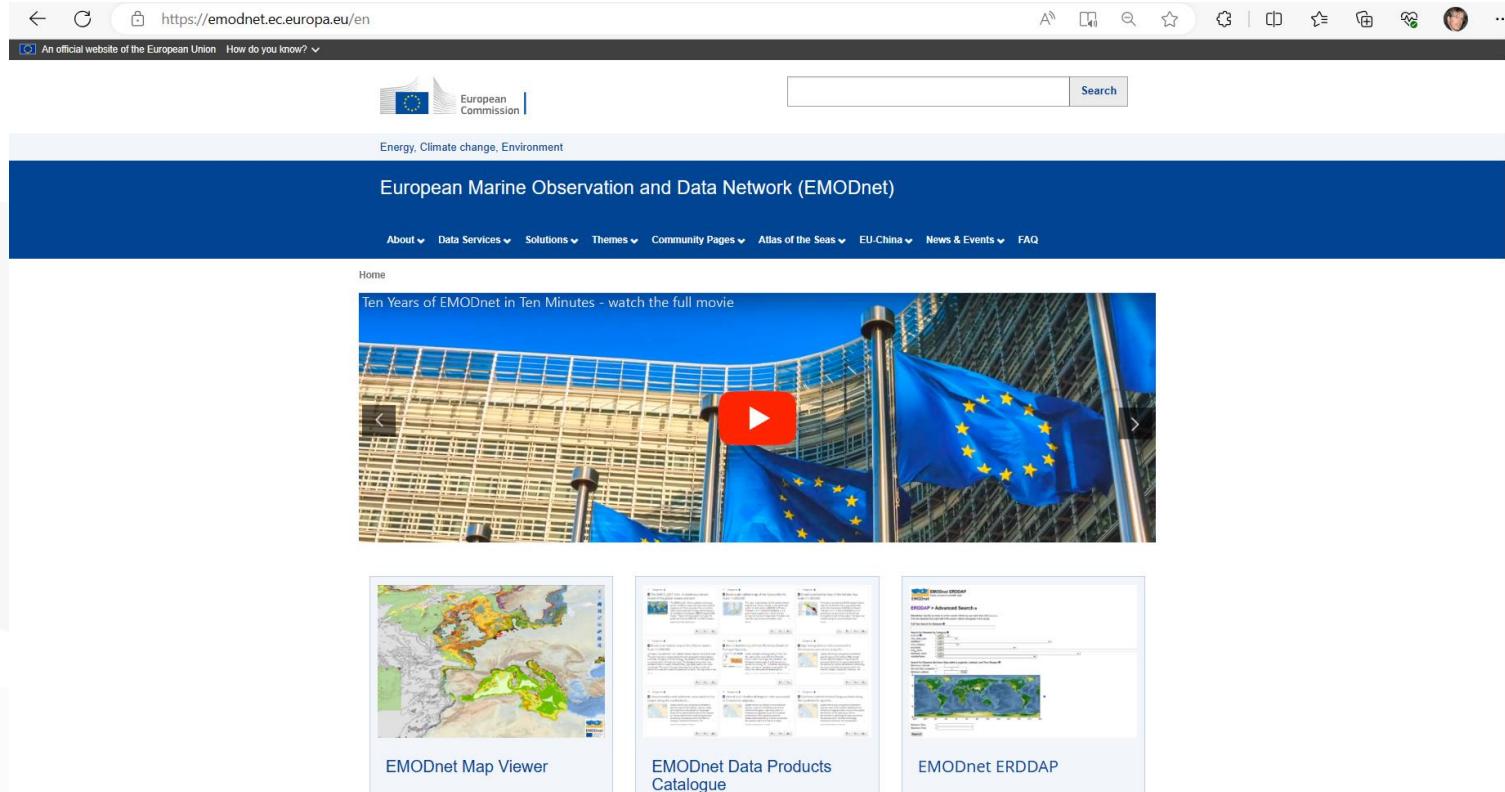


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EMODnet Central Portal

<https://emodnet.ec.europa.eu/en>



https://emodnet.ec.europa.eu/en

An official website of the European Union How do you know? ▾

European Commission | Search

Energy, Climate change, Environment

European Marine Observation and Data Network (EMODnet)

About ▾ Data Services ▾ Solutions ▾ Themes ▾ Community Pages ▾ Atlas of the Seas ▾ EU-China ▾ News & Events ▾ FAQ

Home

Ten Years of EMODnet in Ten Minutes - watch the full movie

EMODnet Map Viewer

EMODnet Data Products Catalogue

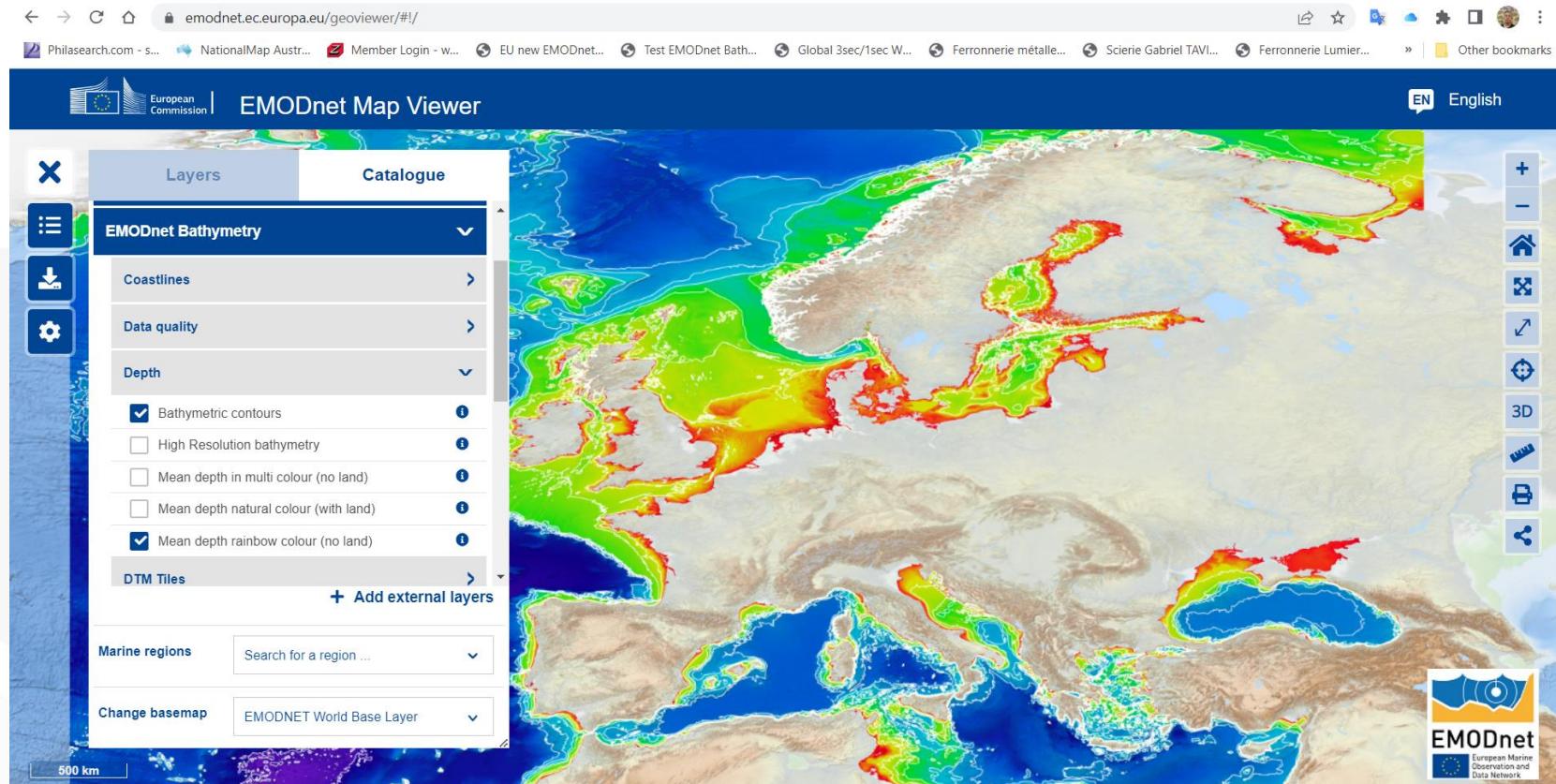
EMODnet ERDDAP



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DTM





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EMODnet Central Portal Coastlines

← → ⌂ ⌂ emodnet.ec.europa.eu/geoviewer/#!/

Philasearch.com - s... NationalMap Austr... Member Login - w... EU new EMODnet... Test EMODnet Bath... Global 3sec/1sec W... Ferronnerie métalle... Scierie Gabriel TAV... Ferronnerie Lumier... » | Other bookmarks

European Commission | **EMODnet Map Viewer** EN English

Layers Catalogue

Search layer

Administrative units

EMODnet Bathymetry

Coastlines

- ✓ Lowest Astronomical Tide (LAT)
- ✓ Mean High Water (MHW)
- ✓ Mean Sea Level (MSL)
- ✓ OpenStreetMap (OSM)

Data quality

+ Add external layers

Marine regions

Search for a region ...

Change basemap

EMODNET World Base Layer

10 km

-1.82368, 48.57969



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EMODnet Central Portal

Source references

The screenshot shows the EMODnet Map Viewer interface. On the left, a sidebar titled 'Layers' lists several data sources: OpenStreetMap (OSM) (selected), Data quality, Depth, DTM Tiles, Source metadata (with 'Source Reference of the DTM' checked), Global Survey Tracks/Polygons, Topography, and EMODnet Biology (selected). Below this is a 'Catalogue' section. At the bottom of the sidebar are buttons for 'Add external layers', 'Marine regions' (with a search bar), and 'Change basemap' (set to 'EMODNET World Base Layer'). The main area displays a coastal region with a dense overlay of colored polygons, representing the spatial distribution of biological source references. The colors range from red, green, blue, yellow, and purple. A legend at the bottom left indicates a scale of 50 km and coordinates of -0.52921, 52.26694. On the right side of the map are various control buttons for zooming, panning, and 3D viewing. The top of the screen shows a browser header with the URL 'emodnet.ec.europa.eu/geoviewer/#!/'. The top right corner of the map viewer has language and other settings.



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EMODnet Central Portal Source References

The screenshot displays three main components of the EMODnet Central Portal:

- EMODnet Map Viewer:** A map of the Netherlands and surrounding seas, color-coded by bathymetry or geological features. It includes a legend with icons for depth, bathymetry, and geological data. A scale bar shows 50 km and a coordinate marker shows 5.76108.
- CDI - Marine data access:** A detailed data record for the "Brown Ridge" dataset.

Data set name	Brown Ridge
Discipline	Marine geology
Parameter groups	Terrestrial
Discovery parameter	Gravity, magnetics and bathymetry
GEMET-INSPIRE themes	Terrestrial
Abstract	The Hydrographic Service of the Royal Netherlands Navy informs mariners about shipping routes, the seabed and underwater hazards such as shipwrecks. To this end, the Hydrographic Service compiles nautical charts, carefully details the maritime borders of the Netherlands and carries out depth measurements. The referenced survey is carried out to support these tasks.
Data format	XYZ ASCII Version 1.0
Data set creation date	20220407

WHERE? Map

A map view shows a red polygon area over a grid, with coordinates 52°12'00"N 5°12'00"E to 52°24'01"N 5°24'01"E.
- 3D viewer:** A 3D perspective view of the same area, showing the seabed topography and geological structures.



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European Commission | EMODnet Map Viewer EN English

Layers

- OpenStreetMap (OSM)

Catalogue

- Data quality
- Depth
- DTM Tiles
 - Tile structure and download
- Source metadata
 - Source Reference of the DTM
 - Global Survey Tracks/Polygons
- Topography
- EMODnet Biology

+ Add external layers

Marine regions Search for a region ...

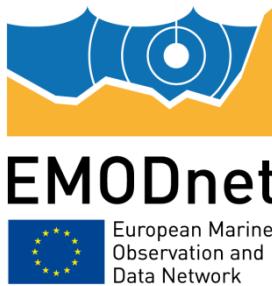
Change basemap EMODNET World Base Layer

500 km

Tile structure and download

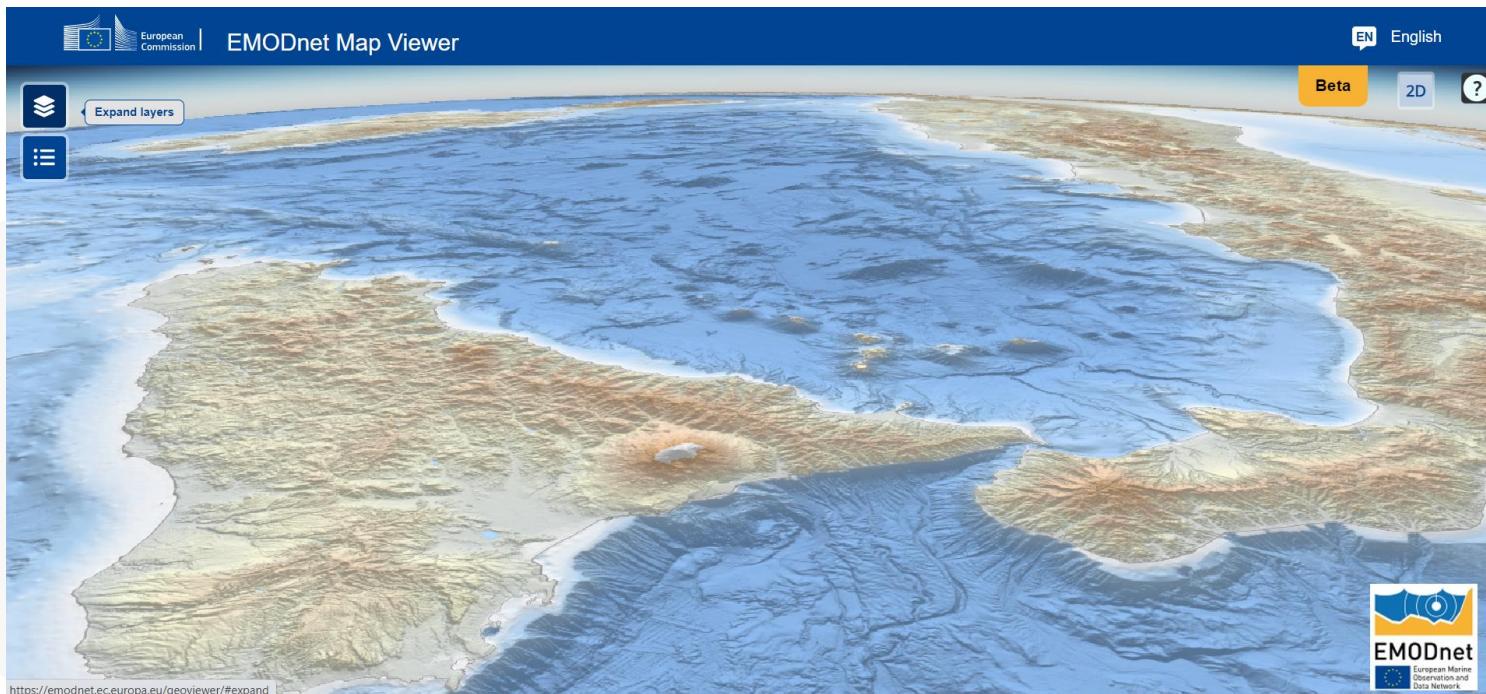
DTM Release	DTM Tile	Product format	Download URL
2022	E4	32 bit float GeoTiff	Download ↗
2022	E4	EMO	Download ↗
2022	E4	EMO (without GEBCO data)	Download ↗
2022	E4	ESRI ASCII	Download ↗
2022	E4	ESRI ASCII Mean Sea Level	Download ↗
2022	E4	RGB GeoTiff	Download ↗
2022	E4	NetCDF	Download ↗
2022	E4	SD	Download ↗
2022	E4	XYZ	Download ↗





EMODnet Central Portal

3D viewer (Cesium)

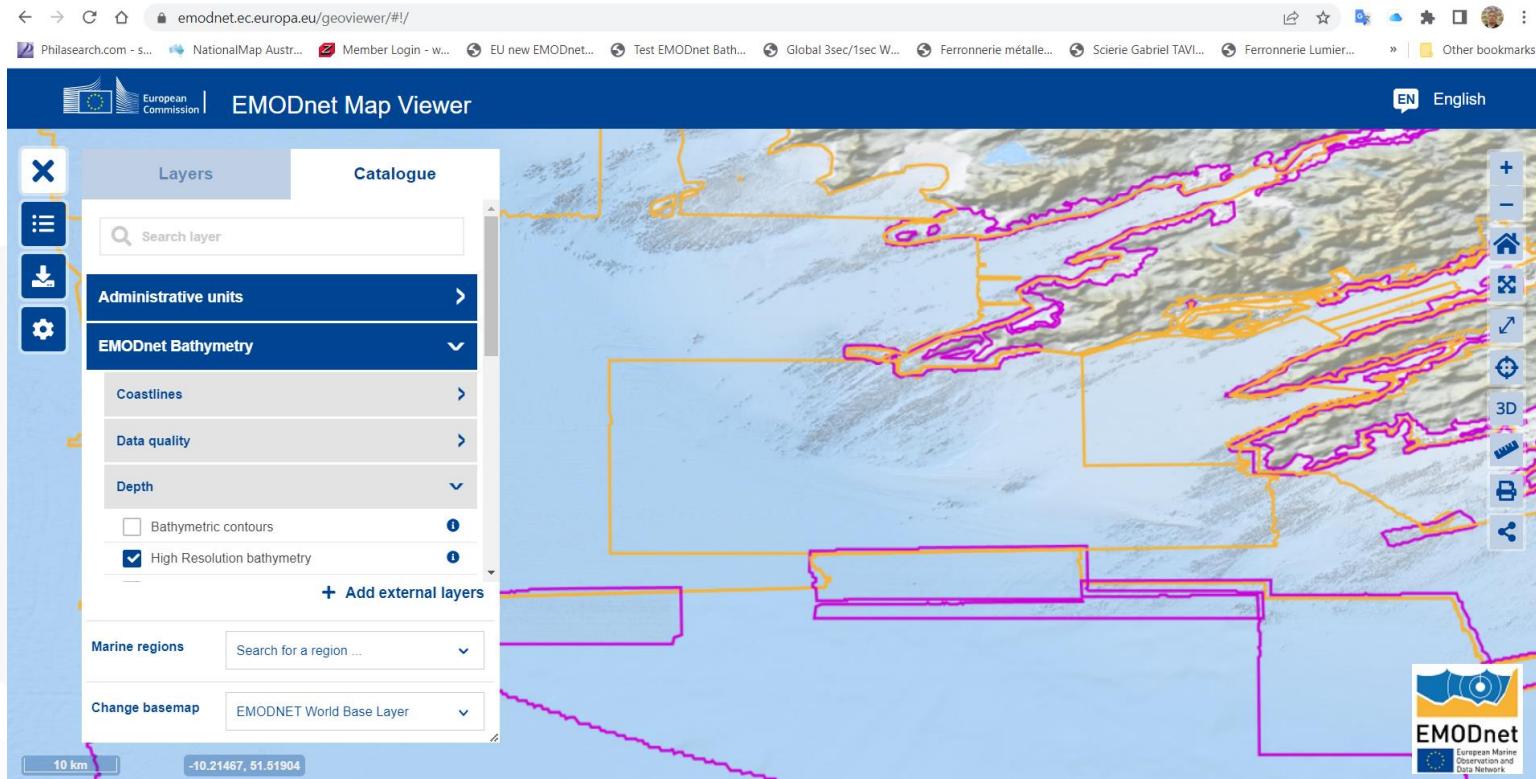




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High Resolution data





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High Resolution data

The screenshot shows the EMODnet Map Viewer interface. On the left, the 'Layers' panel is open, displaying 'Administrative units', 'EMODnet Bathymetry' (selected), 'Coastlines', 'Data quality', and 'Depth'. Under 'Depth', 'High Resolution bathymetry' is checked. A search bar in the 'Catalogue' section is present. The main map area shows a coastal region with bathymetric contours in orange and purple. A callout box titled 'High Resolution bathymetry' provides details for three datasets:

Dataset	Download URL	Metadata URL
366 NorthAtlanticOceanSouthWest	Download	Product metadata
366 14mCelticSeaIrelandCorkBantryDunmanus	Download	Product metadata
366 14mNorthAtlanticOceanKerry	Download	Product metadata

The bottom status bar shows '1000 m' scale, a search bar, and various system icons.



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Key indicators

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



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Visit us at:

<https://emodnet.ec.europa.eu/en>

The screenshot shows the official website of the European Union for the European Marine Observation and Data Network (EMODnet). The page features a prominent banner with the European Commission logo and the text "Energy, Climate change, Environment". Below the banner, the title "European Marine Observation and Data Network (EMODnet)" is displayed. A navigation menu includes links for "About", "Data Services", "Solutions", "Themes", "Community Pages", "Atlas of the Seas", "EU-China", "News & Events", and "FAQ". The main content area features a large image of the Berlaymont building in Brussels with several European flags flying from poles. A video player overlay on the image shows a thumbnail for a video titled "Ten Years of EMODnet in Ten Minutes - watch the full movie". Below this, there are three smaller boxes: "EMODnet Map Viewer" showing a map of Europe, "EMODnet Data Products Catalogue" displaying a grid of thumbnail images, and "EMODnet ERDDAP" showing a search interface.