



EMODnet Bathymetry progress

By
Dick M.A. Schaap – Coordinator

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EMODNET Pilot approach Metadata & Data Data products Promotion Partners

Tools

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EMODnet demo

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Welcome to the Bathymetry portal

The European Commission, represented for the purposes of this project by the Directorate-General for Maritime Affairs and Fisheries (DG MARE), has concluded service contracts for creating pilot components of the **European Marine Observation and Data Network (EMODnet)**. The overall objective is to create pilots to migrate fragmented and inaccessible marine data into interoperable, continuous and publicly available data streams for complete maritime basins. The results will help to define processes, best technology and approximate costs of a final operational European Marine Observation and Data Network.

This **EMODnet-Bathymetry portal** is one of the portals, that is being developed as part of the EMODnet preparatory actions for the European Marine Observation and Data Network (EMODnet).

The portal provides bathymetric data and data products collated for a number of sea regions in Europe:

- 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 Mediterranean, the Ionian Sea and the Central Mediterranean Sea
- Iberian Coast and Bay of Biscay (Atlantic Ocean)
- Adriatic Sea (Mediterranean)
- Aegean - Levantine Sea (Mediterranean).
- Madeira and Azores (Macaronesia)

This is being extended to full European coverage around June 2014 by including:

News

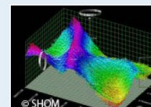
Now more than 9200 surveys gathered

New release of EMODNet digital bathymetry

EMODnet Bathymetry will be presented at the MARES2020 Conference in Bulgaria

EMODnet Bathymetry will be presented at the GEBCO Science Day 2013

More

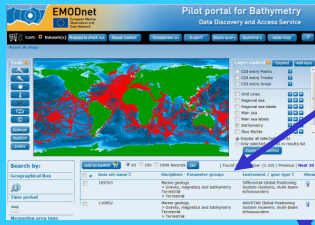


www.emodnet-bathymetry.eu

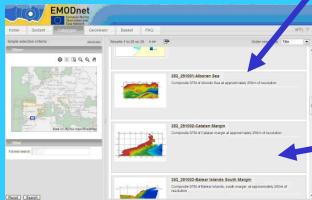
Bathymetry portal



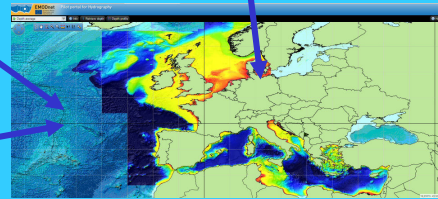
<http://www.emodnet-bathymetry.eu>



CDI metadata service

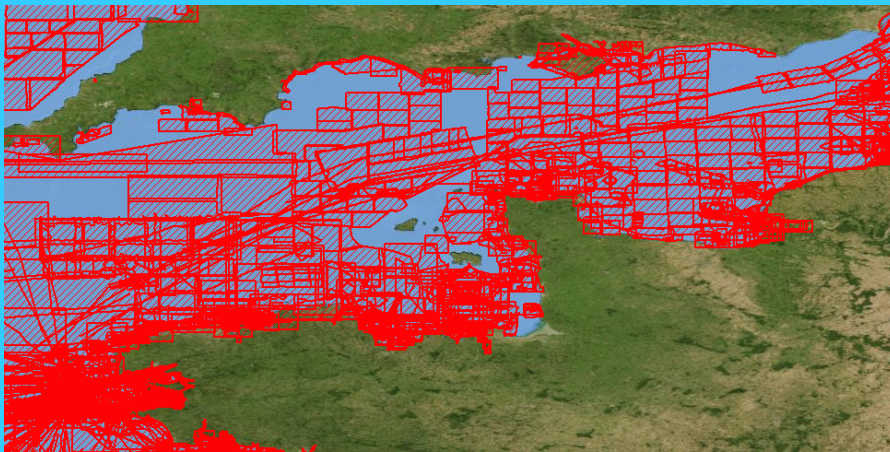


Sextant metadata service



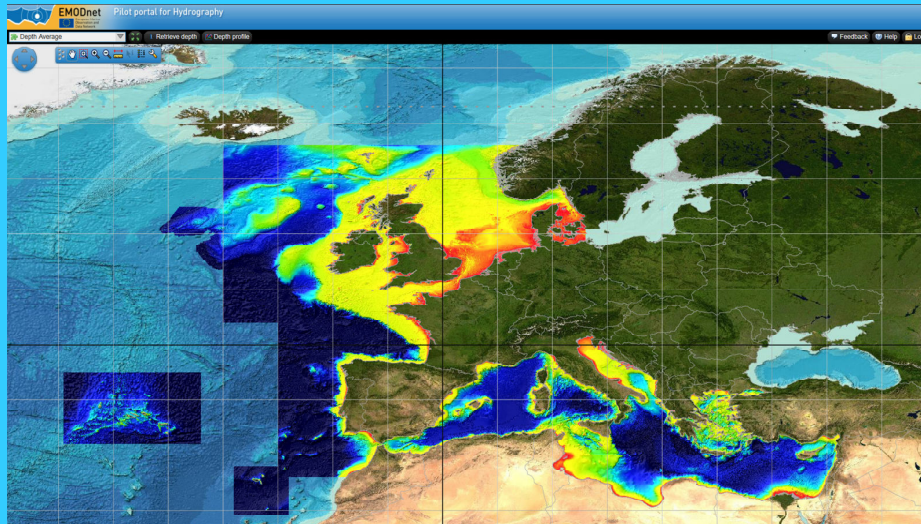
Data products service

CDI Data Discovery and Access Service



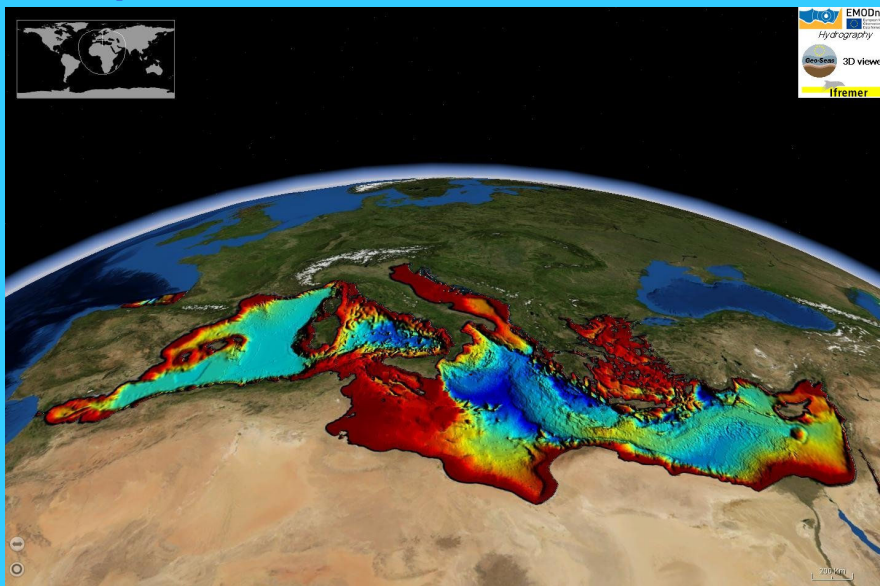
Discovering and requesting access to bathymetric survey data sets (single and multibeam) for the Channel

Bathymetric Data Products viewing service



*DTM for European sea basins (0,25 * 0,25 minutes grid)*

Bathymetric DTM – 3D-Viewer



DTM loaded into 3D-Viewer as developed in Geo-Seas

EMODNet Bathymetry – scope of new project

- Increasing the resolution of the DTM from $\frac{1}{4}$ to $\frac{1}{8}$ of a minute of lat – lon (ca 225 m* 225 m) for all sea regions
- Covering missing sea basins:
 - Black Sea
 - Baltic Sea
 - Norwegian + Icelandic Sea
 - Canary Islands as part of Macaronesia
- Including new data sets, also for existing regions and partners
- 3 coastal digital terrain models at higher resolution
- Include underwater features (including wrecks, seabed obstructions, seamounts, underwater volcanoes)

Progress with data gathering

- Up till today, **9242** survey CDI metadata records from **15** data centres and **131** data originators from **1816 till 2013** have been collated and imported into the dedicated EMODnet Bathymetry CDI data discovery and access service.
- **32** composite DTMs from **13** originators have been gathered and are described in the Sextant Data Products Catalogue service.
- More gathering is taking place and has a deadline for year 1 by end March 2014
- These survey data sets and composite DTMs will serve as input for generating the updated regional DTMs, while gaps will be covered by using GEBCO

User feedbacks: Statistics of web portal <http://www.emodnet-bathymetry.eu>

| Month | Unique visitors | Number of visits | Pages | Hits |
|----------|-----------------|------------------|-------|-------|
| Jun 2013 | 648 | 1320 | 13381 | 40393 |
| Jul 2013 | 731 | 1412 | 16485 | 44009 |
| Aug 2013 | 638 | 1097 | 11742 | 32782 |
| Sep 2013 | 837 | 1443 | 14158 | 42490 |
| Oct 2013 | 976 | 1705 | 16857 | 49609 |
| Nov 2013 | 864 | 1507 | 17665 | 51634 |
| Dec 2013 | 800 | 1378 | 12119 | 36143 |
| Jan 2014 | 932 | 1569 | 17827 | 52468 |

Number of DTM downloads circa 10.000 per year

Meetings & Conferences

- **17-18 June 2013:** EMODNet Bathymetry kick-off meeting, hosted by IPMA in Lisbon - Portugal attended by the full Project Group of 24 organisations. Full minutes and action list of the meeting are available.
- **4-5 July 2013:** Joint meeting MODEG, WG-DIKE members and EMODNET coordinators, hosted by EEA in Copenhagen - Denmark, where the results of the previous EMODNet Hydrography and Seabed Mapping projects were summarised and the scope of the successor EMODNet Bathymetry project was highlighted.
- **16-18 September 2013:** Annual meeting of the Baltic Sea Hydrographic Commission (BSHC) to seek synergy between the BSHC project for preparing a digital bathymetry of the Baltic sea and the EMODNet Bathymetry project.

Meetings & Conferences

- **17-20 September 2013:** MARES 2020, International Conference "Marine Research Horizon 2020", organised by IO-BAS and hosted in Varna – Bulgaria with a special session "EMODNET - Achievements and Future". EMODNet Bathymetry project presented.
- **23-25 September 2013:** IMDIS 2013, International Conference on Marine Data and Information Systems, in Lucca - Italy, organised by the EU FP7 SeaDataNet II project. EMODNet presented in the IMDIS opening speech.
- **7-8 October 2013:** GEBCO Science Day 2013, organised by GEBCO and hosted at CNR-ISMAR in Venice – Italy. EMODNet Bathymetry project presented. Very good feedback from the bathymetry experts, which are mostly working at Hydrographic Offices and the bathymetry departments of larger marine research institutes. Agreement with John Hall of the Israel Hydrographic Survey to make available old data sets from Russian sources. Continued discussion with the Swedish Maritime Agency about synergy with Baltic digital bathymetry project. Great support for the idea that the EMODNet Bathymetry will become the best bathymetry for European seas and should be integrated in GEBCO for European seas.

Meetings & Conferences

- **28-31 October 2013:** BS-GES 2013, 4th Bi-annual Black Sea Scientific Conference Challenges Towards Good Environmental Status, organised by the Black Sea Commission Secretariate together with NIMRD, hosted by NIMRD in Constanta - Romania. EMODNet Bathymetry project as one of the key opening presentations and well received. "cry for help" challenged local data holders of Black Sea bathymetry to come forward. This has resulted in positive agreements with GeoEcoMar and Marine Research (SME). Discussion with Romanian Hydrographic Survey which has not (yet) resulted in participation.
- **27-30 January 2014:** EMODNet Bathymetry progress meeting annex Training Workshop took place in Tenerife - Canary Islands, hosted by IEO. The meeting was attended by the full Project Group (partners + subcontractors), including new subcontractors (DEU, MARUM, Marine Research). Dedicated to monitor the progress of activities and further planning for the first release of the new round of DTM products in June 2014. Also a detailed explanation and discussion of the refined QA-QC and DTM generation methodology + hands-on Training Workshop for the tools that are provided to data providers, such as new Globe software. Meeting was joined by the Swedish Maritime Administration as leader of the Baltic digital bathymetry project.

Meetings & Conferences

- **5 February 2014:** Bilateral meeting MARIS – GGSGC to discuss technical developments for
 - incorporating pilot high resolution DTMs (HRDTM)
 - improvement of rendering when zooming in
 - Possible coastline improvement via Open Street View
 - division of regional DTMs
 - Improved WMS – WFS to Central Portal
 - possible ideas for next phase:
 - introducing crowdsourcing to get input of additional survey data sets from several coastal and harbor authorities and possibly industry
 - will require extra validation and handling for good integration, so will have budgetary implications which should not be underestimated
 - closer cooperation with bathymetry software providers such as ESRI, CARIS, ... to adopt export to EMODnet formats for metadata and data
 - develop online 3D visualisation services

EMODNet Bathymetry – contract issues

- The official signing of the contract with the EU was delayed and took place in July 2013. Kick-off meeting took place in June 2013. It is agreed that the annual reporting will take place each year in July and that the contract in practice runs from June 2013.
- Agreement was reached on EU amendment for financial arrangement.
- The Consortium consists of 16 partners and 8 subcontractors. A Consortium Agreement for all partners and a Subcontract for bilateral contracting of individual subcontractors have been established. Only waiting is still for the signing of subcontract by the Danish Geodata Agency.
- Several possible extra data providers have been identified, especially for the Black Sea region and the Eastern Mediterranean. This includes:
 - **GeoEcoMar** (Romania), subcontracted for Black Sea survey data and meeting participation
 - **Marine Research** (Romanian SME), joins on a voluntary basis
 - **Dokuz Eylul University** - Institute of Marine Science and Technology (Turkey), subcontracted for Black Sea and Eastern Med survey data and meeting participation
 - **MARUM** (Germany), for multibeam survey data from Black Sea cruises and meeting participation on the basis of covering travel expenses.

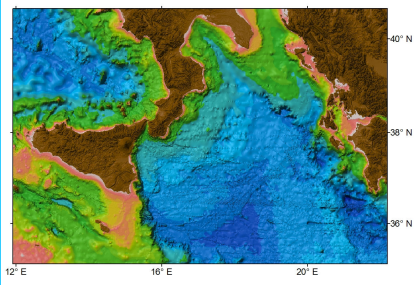
EMODNet Bathymetry – significant results

- EMODNet Bathymetry website updated to reflect the extension of the project, extended scope, partnership and standard URL
- Document with an upgraded QA / QC and DTM generation methodology, considering the increased DTM resolution and lessons learned from the previous projects
- Upgraded GLOBE software by IFREMER for generating DTMs following the upgraded EMODNet methodology which was very well received at the recent Training Workshop, also by HO's
- Successful second Project Meeting annex Training Workshop for full project group in January 2014 with 40 attendants and great cooperation
- Identification and established agreements with additional data providers for the Black Sea and Eastern Mediterranean from Romania, Turkey and Germany.

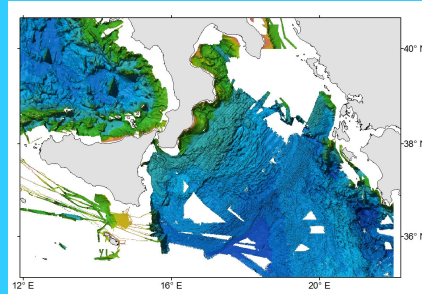
EMODNet Bathymetry – significant results

- Progress with establishing cooperation and synergy with the Baltic digital bathymetry project of the BSHC. EMODNet will adapt the present BSHC DTM (500 * 500 meters) with full acknowledgement via SEXTANT and include CDI references and higher resolution data sets for the German sector as starter
- GEBCO has adopted the present EMODNet Bathymetry DTMs to enrich its GEBCO DTM in the coming release and also has integrated OLEX data, in particular for the central North Sea. GEBCO has applied a data merging technique based upon 'remove-restore' principal. This technique is integrated into the upgraded EMODNet QA-QC and DTM methodology in order to achieve better results with less anomalies.
- Pressure by several HO's to CARIS to include a EMODNet conversion plug-in the CARIS Bathy DataBase software to export CDI metadata of surveys; especially relevant for the North Sea region and Spain – Portugal

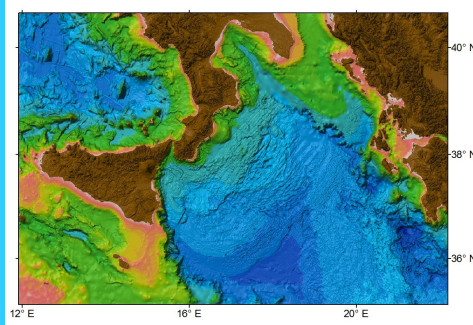
EMODNet merging in GEBCO - Example



GEBCO grid



EMODNet grid



GEBCO
Result of
merging

EMODNet Bathymetry – Planning 1st year

- New survey data sets to be included in the CDI service, including connection of new data centres to SeaDataNet CDI infrastructure: **end March 2014**
- New composite DTMs to be included in Sextant service: **end March 2014**
- Regional groups working on and delivering 1st release of regional DTMs: **mid May 2014**
- Progress meeting to evaluate progress and final tuning before delivering and publishing the 1st releases: **end May / early June 2014**
- Integration of new regional DTMs, including CDI and Sextant references, and publication via portal: **mid June 2014**
- 1st Annual report and invoice to EU: **mid July 2014**



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