



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n°1 – Bathymetry

CINEA/EMFAF/2022-23/3.5.2/01/SI2.927891

Start date of the project: 20/12/2024 (24 months)

Operational Phase

Quarterly Progress Report 4

Reporting Period: 01/10/2025 – 31/12/2025



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1. Highlights in this quarter

Task 1 - Maintain and improve a common method of access to data held in repositories:

During the reporting period, the number of survey data sets has considerably increased from 44414 to 45470 CDI entries, while the number of Composite DTM entries amounts to 301. New CDI entries for bathymetry survey data sets were contributed by 19 data providers, originating from 14 countries. The largest contribution was made by OceanWise from the United Kingdom with 600 entries. Nearly all data providers from the consortium have now populated new metadata and data sets, while remaining data providers are underway with the population.

Task 2 - Construct products from the available data sources that provide users with information about the distribution and value of parameters in time and space:

The activities for new Bathymetry products have been discussed at the project meeting of EMODnet Bathymetry that took place during the EMODnet Jamboree on 24th November 2025. Data providers are pre-processing and gridding their new data sets to the EMODnet bathymetry standards using the Globe software and are making these gridded data sets available for the respective Regional Coordinators. Once received, the Regional Coordinators will start the process of upgrading the latest Regional DTMs (2024 versions), integrating selected data sets from the new data collection and possibly replacing older data sets with new data sets. For this, use will be made of the Globe software and online Collaborative Virtual Environment (CVE) tools. It was agreed at the Jamboree meeting that a dedicated Training workshop will be arranged in the first part of 2026 to update the knowledge and capabilities of the Regional Coordinators on working with the Globe and CVE tools and their latest new features. The production process for all 12 Regional DTMs is to take place till the summer 2026, after which the integration into the EMODnet DTM is planned.

Artificial Intelligence (AI) might provide opportunities for innovating the DTM production process, in particular for filling gaps in survey coverage. As a first step, partners Deltares, Coronis, and EOMAP have explored current AI technologies that might be applicable for EMODnet Bathymetry. The results of this exploration are documented in Deliverable 4.4 which is an Annex to this progress report and which has been published as Technical Report on the EMODnet portal. The report also gives a roadmap for further steps that will be experimented and potentially deployed in the coming period.

Next to the DTM production, EMODnet Bathymetry undertakes efforts for updating two other products, namely the Inventory of official National Coastlines and Baselines and the Digital European coastline. For the Inventory, Deltares has requested all consortium members to provide updates, if any, with a deadline in Q3 – 2026. For updating the Digital European Coastline work has not started yet.

Task 3 - Develop and improve procedures for machine-to-machine connections to data and data products, in a common manner across the EMODnet service:

EMODnet Bathymetry continued to operate and maintain several catalogue services and web services, which are being harvested and/or directly feeding the Central Portal services. The services are following INSPIRE principles and their operations are being monitored from the Central Portal with good results. EMODnet Bathymetry is regularly testing the functionality of the Central Portal and following up feedback from users. Any identified bugs are reported through JIRA tickets for further action.

Task 4 - Fulfil the EMODnet Central Portal requirements that ensure all data and data products can be found, viewed and downloaded with ease (from the Central Portal):

The activities for new publishing new Bathymetry products will take place around the last quarter (8th) of the first two-year period of the new contract.

Task 5 - Provide content for the reserved space for each thematic group within the EMODnet Central Portal:

Each thematic has its own dedicated space at the Central Portal where it publishes its so-called ‘narrative’. In the reporting period no edits have taken place.

Task 6 - Ensure coherence with the efforts of the Regional Sea Conventions and other relevant actors:

Secretariats of the Regional Sea Conventions are kept up-to-date of the EMODnet Bathymetry services, inter alia through regional partners. The new EMODnet bathymetry products, released end 2024 and early 2025, provide a good opportunity to reinforce the good relationships with the secretariats of the Regional Sea Conventions who are kept up-to-date of the EMODnet Bathymetry services and products, and where possible, engaged in wider promotion and contributing to mobilising more potential data providers and product users.

Task 7: Contribute to the implementation of EU legislation and broader initiatives for open data:

On a global scale, good synergy is continued with GEBCO and the Seabed 2030 project. In practice, the EMODnet DTM is considered as the European contribution to Seabed 2030 and as such fully integrated into the GEBCO DTM.

Task 8 - Monitor quality / performance and deal with user feedback:

The overall performance of the portal and its services is continuously measured and its results are reported in the separate indicators spreadsheet. It demonstrates that for Bathymetry, its services and products continue to be quite popular. The number of visits and downloads of the full DTM products are again high in the reporting period. User feedback is on the quality of the DTM product and the usability of the portal. Answers are directly provided to the users.

Task 9 - Dedicate specific resources to the EMODnet Central Portal Task Force

EMODnet Bathymetry participates and contributes to the efforts of the newly to be established Central Portal Task Force that will look into optimising the functioning of the EMODnet Central Portal services for users to be able to find, view, and download data and data products with ease. This will include developments for central portal components, but also might have implications for adapting thematic components on which the central services rely. As a contribution, EMODnet Bathymetry developers have upgraded the 3D visualisation software for the bathymetric map layer, adopting state-of-the-art. This 3D visualisation software should be integrated by the Central Portal team in the EMODnet Map Viewer service. However, this deployment is seriously delayed due to use of an older software component in the EMODnet Map Viewer service, for which updating might have implications for other functionality.

Milestone/Deliverable in numerical order	WP	Date due	Status (To do/ Delivered/ Delayed)	Date delivered	If Delayed: reason for delay and expected delivery date
D1.1: Quarterly concise progress reports	WP1	M4, M7, M10, M13, M16, M19, M22, M25	Delivered D1.1 a, b, c, d	M4, M7, M10, M11	
D1.2: Annual Interim report	WP1	M12	To do		Expected mid February 2026

D1.3: Final report	WP1	M24	To do		
D1.4: Plan for service continuity, incl. docs and sources	WP1	M24	To do		
D2.1: Upgraded guidelines for data pre-processing and population of metadata	WP2	M6	Delivered; see annex to Q2 report	M7	
<i>D2.2i: Training Workshop for data pre-processing and metadata population</i>	WP2	M3	Delivered via Training Workshop 11-12 March 2025 at NOC in Southampton – United Kingdom	M3	
D2.3: Pre-processed survey data sets and included in CDI Service	WP2	M12	Nearly completed		
D2.4: Pre-processed composite DTMs and included in Sextant service	WP2	M12	Completed		
D3.1: Upgraded guideline of EMODnet methodology for DTM production, including using CVE	WP3	M10	Delayed		Will be delivered in Q1-2026
<i>D3.2: Training and intercalibration Workshop</i>	WP3	M11	Delayed		Will be organised in Q1-2026
<i>D3.3i: Processed and pre-gridded data sets as input for RDTMs</i>	WP3	M13	To do		
<i>D3.4i: Regional DTMs with common resolution of 1/16 arc minutes grid</i>	WP3	M17	To do		

D3.5i: Best version HR DTMs for coastal waters and hotspots	WP3	M20	To do		
D3.6: New EMODnet DTM incl Quality Index and loaded in EMODnet web services for viewing and downloading	WP3	M23	To do		
D3.7: HR-DTMs loaded as separate layer in EMODnet web services for viewing and downloading	WP3	M23	To do		
D3.8: Source reference layer in EMODnet web services to link to CDI and Sextant Catalogue services	WP3	M23	To do		
D3.9: Refined best estimate European digital coastlines in EMODnet web services for a range of vertical levels	WP3	M22	To do		
D3.10: Updated Inventory of existing and ratified baselines and registered claims / disputes under UNCLOS, for European countries at the portal	WP3	M22	To do		
D3.11: Updated EMODnet Bathymetry World Base Layer service	WP3	M20	To do		
D4.1: Standard machine- to-machine services operational	WP4	M2	Delivered	Operational since M0	

<i>D4.2i: CVE adapted for handling all RDTMs</i>	WP4	M14	To do		
<i>D4.3i: Globe software + GGSGC workbench upgraded with extra functionality</i>	WP4	When required	Following requests and suggestions		
D4.4: Interim report on AI technology exploration	WP4	M11	Delivered; See annex		
D4.5: Final report on AI technology exploration and prototype(s)	WP4	M23	To do		
D4.6: Adapted services following Central Portal Task Force activities	WP4	M23	To do		
D5.1: Operational Helpdesk	WP5	Continuously			
D5.2: Monitoring data about visits and usage	WP5	Continuously			
D5.3: Promotional material and up-to-date thematic space at central portal	WP5	Continuously			
D5.4: Presentations at relevant conferences	WP5	Regularly			
<i>D5.5i: Regional, international, and CMEMS cooperation and tuning interoperability</i>	WP5	Regularly			

2. Identified issues: status and actions taken

A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/ Resolved)	Action(s) taken/ remaining actions planned	Date due	Date resolved
EM-1006: to review the guidelines document on metadata harmonization	Pending	Discussed during 18 th TWG. Conclusion is to keep using SeaDataNet vocabulary and expand where needed. This last task is currently being done.		12/01/2026
EM-372: GEBCO 2022 error affecting EUSeaMap (via EMODnet DTM)	Pending	Point discussed during the Jamboree. A specific analysis is to be provided. Next release of GEBCO grid planned for early 2026. EMODnet Habitat Mapping colleagues will be included in the evaluation of the coming product prior to its release.		
EM-1196: Review Data/product level description	Resolved	Describe EMODnet data/Products Level of processing. Current description coherent with EMODnet Bathymetry's interpretation		12/01/2026

B. Issues / challenges identified by the thematic assembly group itself				
Priority issue / challenge	Status (Pending/ Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
EM-1125: Arctic Pole centered projection missing	Resolved	Arctic pole projection implemented. It appears that data are being filtered above 85°N.		22/12/2025
EM-1095: Upgrade the 3D viewer	Pending	Bathymetry has developed upgraded 3D viewer software with extra functionalities. This should replace the existing and old version. Bibliomatica has indicated that such upgrade is dependent upon other components upgrades (e.g. React)		
EM-1128: Northernmost DTM tiles in grid not downloadable	Pending	The Bathymetry DTM tiles can be downloaded from a grid whereby users can also choose the data format. Although the relevant tiles have been made available, the link to Northernmost gridcells remains not yet functional. Possible solution is to manage the exception in the viewer code.		

3. Communication assets

A. (Co-)Authoried peer-reviewed publications in the quarter						
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No	
B. Other/non-peer reviewed types of publications (co-)authoried in the quarter						
Date of publication	Type of publication	Full reference	ISBN	DOI	Is it open access? Yes/No	

For a comprehensive overview of publications referring to/making use of EMODnet data and/or data products, please consult Google Scholar.

4. Monitoring indicators

Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	CDI catalogue service	There have been delivered 1056 new CDIs, which is quite a lot. Most (600) were submitted by Ocean Wise for the waters around the UK. Nearly all data providers have now finalised their data provision for the new DTM product cycle.
What is your opinion on the data coverage within EMODnet for your thematic?	Considering population of CDI and Sextant catalogues	Overall, EMODnet Bathymetry has brought together an excellent data collection (CDIs and Composite DTMs), covering all European sea regions and compiled by 78 data providers.
B) Usage of data in this quarter	CDI RSM shopping ledger service	The number of downloaded CDIs in this quarter is far lower than in the previous quarter, which was very high with circa 39.000 CDIs.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products	Statistics from downloading at the Bathymetry system	In March 2025 the new 2024 DTMs (Europe and Caribbean), new HR-DTMs and associated data products have been released. Since then no new data products have been added yet, which is as expected.
B) Usage of data products in this quarter	Analysing download statistics	The number of product downloads has decreased slightly for the DTM tiles and increased slightly for the HR-DTMs compared to the previous quarter. Both are quite high. These numbers demonstrate the continuing interest of users in these EMODnet products. Also, the number of WMS - WFS requests is again very high, and increased somewhat compared to the previous quarter.

Progress indicator	Means of collecting figures	Comment
3. Internal and external organisations supplying/approached to supply data and data products within this quarter	CDI catalogue service	Nineteen data providers have submitted 1062 new entries, of which 600 by OceanWise. While one data provider has de-activated 6 entries.
4) Online 'Web' interfaces to access or view data	N.A.	No changes
5.1 Daily number of page views of EMODnet Thematic entry page	Europa Analytics	Daily number of page views of the Bathymetry narrative is quite steady and around 150 over the quarter, which is somewhat higher than the previous quarter. Only in December the stats are lower, most probably because of the holiday period. This is the static content. Unfortunately, we cannot see how the bathymetry map layers and products are visited
5.2 Quarterly total number of visitors, page views, unique page views and percentage of returning visitors	Europa Analytics	The quarterly numbers are reasonable as the bathymetry narrative is a static story. See the earlier remark under 5.1. This quarter the numbers are somewhat higher than in the previous quarter

The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Europa Analytics, unless reported otherwise.

5. ANNEX 1: D4.4 - Interim report on AI technology exploration