



# EMODnet



European Marine  
Observation and  
Data Network

## **EMODnet Thematic Lot n°0 - Bathymetry - High Resolution Seabed Mapping (HRSM2)**

**EASME/EMFF/2017/1.3.1.2/01/SI.791269**

**Start date of the project: 18/12/2018 - (24 months)**

**EMODnet Phase III – Quarterly Progress Report (8)**

**Reporting Period: 1/10/2020 – 31/12/2020**



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## Disclaimer

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# 1. Highlights in this quarter

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*[Please make sure that progress is listed for each of the tasks specified in Section 1.4.1 of the Tender Specifications. Please provide an explanation for any tasks in which progress has not been noted, max 2 pages]*

- **Task 1 - Gather and give access to bathymetric survey data:** During the reporting period, the number of survey data sets has increased again from 30493 to 30560 CDI entries, and the number of Composite DTM entries has increased from 203 to 207 while the number of published High Resolution DTMs has seen no changes yet. Several partners have generated and provided new HR-DTMs which are being validated and will be incorporated in an updated HR-DTM layer and associated download facility soon (early 2021), also as part of the final project deliverable. The overall number of data providers for the CDI and both Sextant catalogues continued at 67 organisations.
- **Task 2 - Compile a multi-resolution digital terrain model of European seas:**

Following all the work undertaken by the data providers and basin coordinators to gather and produce gridded dataset and integrate them into basin compilations, these have been integrated in the final product (20/12/2020) which was made available for final checks and testing to the members of the consortium. Lately, the DTM has been release to the public (13/01/2021). As part of this final process a number of items have been solved, including the grid horizontal shift observed and previously reported (see quarterly report 7). Thanks to the collaboration of the different stakeholders (Project Coordinator, Basin coordinator, final integrator and data provider) and despite the current remote working conditions limiting technical actions on large volume of data, the contribution of partner GSI has been key in solving this issue by regenerating and re-integrated their contribution.

Associated to the full gridded DTM, the reference layer (providing the origin of each data sets contributing to the grid) and the Quality layer (providing the qualitative descriptions of the gridded product) have been fully updated. These layers of information are displayed on the EMODnet portal and are also accessible as OGC web services.

Finally, the new contribution of High Resolution DTM (surveys gridded with the same methodology and tools, but with a higher resolution than the full DTM) will soon complement the already existing HR-DTMs. The new HR DTMs will be published soon by means of the HR-DTM layer and made available for downloading from the bathymetry viewing service in the same way as the full DTM.
- **Task 3 - Establish best-estimate European digital coastlines and compile overview of legal baselines:**

Partner Deltares has concluded its work on generating a new release of the best-estimate digital coastlines for different tidal reference levels. These satellite derived coastlines can be viewed as an extra layer in the Bathymetry Viewing service which also allows downloading them as vector shapefiles. The latest December 2020 version now covers the entire coastline of Europe. The production process has been summarized in a report which can be retrieved from the EMODnet Bathymetry portal ([https://www.emodnet-bathymetry.eu/media/emodnet\\_bathymetry/org/documents/emodnet\\_bathymetry\\_satellite\\_derived\\_coastline\\_report\\_v2.0-dec2020.pdf](https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/emodnet_bathymetry_satellite_derived_coastline_report_v2.0-dec2020.pdf)).

In parallel, the inventory of national legal baselines and coastlines of EU member states have been updated and made available on the EMODnet Bathymetry portal at: [https://www.emodnet-bathymetry.eu/media/emodnet\\_bathymetry/org/documents/emodnet\\_coastline\\_and\\_baseline\\_collection\\_2020-18dec2020.pdf](https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/emodnet_coastline_and_baseline_collection_2020-18dec2020.pdf). The total number of countries has been expanded from 21 to 26.
- **Task 4 - Establish machine-to-machine connections to data and data products:**

Associated to the release of the new EMODnet full Bathymetry grid, all the web services have been updated to include this new version, as well as preserving the previous releases (up to the 2016 version). All these services allow partners and data users to request the DTM and associated layers within their own data management system (see Task 7, relative to the collaboration with DCDB notably).

The final report describing the implementation of the bathymetry processing software GLOBE on the DATARMOR HPC facility and associated technical tests by selected basin coordinators indicates that this solution is promising in terms of data management but has still some limitations related to the rendering of

bathymetric compilation on remote clients, which still prevents the overall adoption of this cloud-based solution at full scale by the data providers and all the basin coordinators. Further work will be undertaken towards this aim in the future.

- **Task 5 - Maintain a web portal:** In the reporting period, where needed, support was given by MARIS to data providers for populating new entries in the CDI service. While Ifremer has given support, where needed, to data providers for populating new entries to the Sextant catalogues for Composite DTMs and HR-DTMs. Following the web visualisation report by Trust-IT, some modifications were made to the width of the website header and the menu at the lower bar.
- **Task 6 - Operate a help-desk:** several questions were received and answered by the helpdesk. The user questions received and answered are detailed in chapter 3 and Annex 1.
- **Task 7 - Achieve international interoperability:**  
EMODnet Bathymetry members are regularly discussing technical matters with GEBCO / Seabed 2030 counterparts. As before done for the previous grid, the EMODnet full DTM will be included in the next release of the GEBCO grid to be generated in mid-2021. Thanks to the delivery of web services, the inventory of worldwide bathymetric data held by the IHO Data Centre for Digital Bathymetry, has been automatically updated with new datasets from the EMODnet contribution.  
Also, the IHO - Europe Networking Working Group (IENWG) meeting, in December 2020, allowed the promotion of EMODnet Bathymetry activities to the IHO and to hydrographic offices not yet members of the consortium. Success in the strategy of the European Commission and its implementation from the EMODnet Bathymetry group has been acknowledged by the participants and more especially by representatives from the IHO.  
Also, as part of the EMOD-PACE project, experts from EMODnet Bathymetry have provided elements on the EMODnet bathymetry methodology on data and metadata formatting and delivery to Chinese counterparts for them to adapt and undertake the european model.
- **Task 8 - Achieve INSPIRE compliance:** INSPIRE compliance for all EMODnet Bathymetry OGC web services, both from the CDI service and the Bathymetry Viewing and Download service components is satisfied. The latest validation indicates that EMODnet Bathymetry now has a full score.
- **Task 9 - Monitoring of performance:** 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 the Bathymetry portal and its services and products continue to be highly popular and in great demand for a wide range of user applications.
- **Project management:** The coordinator and technical coordinator prepared the 7th quarterly progress report which was accepted by EU (EASME and DG MARE). The coordinator has undertaken actions to enable that the continuation contract (“European Marine Observation and Data Network (EMODnet)” Lot 1 Bathymetry – EMFF/2019-1.3.1.9) is signed by both parties, which implicates a seamless continuation of the activities.

## 2. Identified issues: status and actions taken

[Provide an overview of the issues identified by EASME (Table A), if any, since the start of the project phase (provide date), the status of those issues and actions taken to address them and/or roadmap with remaining actions planned to resolve the issues. in Table B, provide information about issues and challenges identified by yourself, if any.]

<b>A. Priority issue(s) identified and communicated by EASME/ DG MARE/ SECRETARIAT</b>				
Priority issue	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
<b>EM-126 Bathymetry to report on number and volume of downloaded data and data products by 6th of January</b>	Resolved	Report as requested	6/1/2021	5/1/2021
<b>EM-120 Bathymetry to provide an email contact that will be notified in case of downtime of their OGC services</b>	Resolved	Provided a list of names (project management and technical contact)		18/12/2020
<b>EM-100 Bathymetry - Removal of Brexit content disclaimer</b>	Resolved	Previously removed	01/12/2020	27/11/2020
<b>EM-82 Bathymetry - Web Services MetadataUrl and DataUrl fields</b>	Resolved	Updated the DataURL field with respect of capabilities and INSPIRE guidelines		05/01/2021

<b>A. Issues / challenges identified by the thematic assembly group itself</b>				
Priority issue / challenge	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
During generation of the RDTM for the Celtic and Irish seas and Atlantic Ocean it appears that there is a horizontal shift compared to the 2018 version	Resolved	Communication between Shom, GGSGC, and GSI which lead to a complete reprocessing from GSI and subsequent integration in the full gridded compilation	End Oct 2020	21/10/2020

### 3. User feedback (Contact Us form, online chat & other communication means)

*[Provide a list of all user feedback received on your portal in chronological order since the start of the project (provide date). Indicate the type of the feedback received, a clear description of the query, and the actions undertaken to resolve the issue (e.g. update of metadata, fixing a particular issue with the map viewer). Indicate the status of the query (i.e. has the query been resolved or not yet), and if not provide an explanation why. List any feedback you received on the portal that can be used to build EMODnet use cases.]*

Overview of user feedback and/or requests received in this quarter							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query: resolved/pending	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
5 October 2020	Company; Map Media, ?	Question about downloading of HR-DTMs	Email feedback form	One day later	Resolved	Explanation given	
13 November 2020	Company; Navico, Mexico	Question about commercial use of HR-DTMs	Email feedback form	Two days later	Resolved	Referred to Terms of Use	
18 November 2020	Company; Fiskher, Norway	Question about commercial use of DTM	Email feedback form	Same day	Resolved	Referred to Terms of Use	
18 November 2020	Research Institute; SYKE, Finland	Question about Terms of Use of EMODnet Bathymetry products	Email feedback form	Same day	Resolved	Explanation given	
18 November	Research Institute; SYKE,	Question about option for downloading all 64	Email feedback	Same day	Resolved	Explanation given	

<b>2020</b>	Finland	DTM tiles via FTP	form				
<b>25 November 2020</b>	Company; Fishker, Norway	Additional questions about commercial usage of DTM	Email feedback form	Same day	Resolved	Referred to Terms of Use	
<b>18 December 2020</b>	University; Technical University Hamburg, Germany	Question about conversion of coordinates between Mercator and UTM	Email feedback form	Same day	Resolved	Explanation given which software to use	

## 4. Meetings/events held/attended & planned

*[Organisational meetings/events held/participated (incl. presentations, lectures, trainings, demonstrations, workshops, etc.) by the contractant since the last quarterly report and planned in the future. Please add a short description on the meeting as well as the nature and volume of the audience.*

*When listing a meeting, please indicate whether it was an internal (i.e. within your partnership/lot) or external meeting (i.e. outside your partnership/lot).]*

A. Meetings/events organised and attended					
Date	Location	Type event (internal or external meeting, training/workshop)	Indicate if a ppt was given (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
10-11/10/2020	Brest France	Ocean Hackaton	no	O	Acting as a data coach – sharing coverage of the EMODnet presence on the event with Secretariat GIS support officer
4/11/2020	Remote	NATO: Introduction to EMODnet Bathymetry data and products	no	O	Introducing EMODnet Bathymetry and potentially other EMODnet Thematic data content to the NATO Geospatial unit
9-13/11/2020 -	Remote	13 <sup>th</sup> EMODnet Steering Committee and 8 <sup>th</sup> Technical Working group	yes	A	Report given
24-26/11/2020	Remote / France	MERIGEO	yes	A	Shared presentation of mutual collaboration of Seabed Habitats and Bathymetry
2/12/2020	Remote	IHO – European Network working group	Yes	A	Report and promote on the recent progress made by the EMODnet Bathymetry Consortium
<b>SUM</b>				<b>O</b>	<b>Total # of meetings organised =2</b>



<b>SUM</b>				<b>A</b>	<b>Total # of meetings attended = 3</b>
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<b>B. Meetings/events planned in the future</b>				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
Jan 2021	France/remote	GEBSCO committees and symposium	O/A	International collaboration related to the GEBSCO. To be organised by UNESCO and Shom in Paris, inaugurating the UN Decade of the Ocean
12-14/04/2021	Remote	International Conference on Marine Data and Information Systems	A	Promoting bathymetric data management

## 5. Communication assets

[List all the relevant communication and dissemination products and assets you have developed since the start of the project phase (provide date) (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a total number for every type of communication product you have developed (e.g. total # of press releases, etc.) or provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]

A. Communication products				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
10/2020	Article	Article in Hydrographische Nachrichten, Oct 2020; see <a href="#">link</a>	Reaching out to users	
1/11/2020	News item	About EMODnet Bathymetry featured in article in Hydrographische Nachrichten, Oct 2020	Reaching out to users	
18/12/2020	News item	About Inventory of national coastlines and baselines updated	Reaching out to users	

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
13/01/2021	Public release of the new EMODnet DTM	<a href="https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/press-release-emodnet-bathymetry_jan2021_final.pdf">https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/press-release-emodnet-bathymetry_jan2021_final.pdf</a>	Informing our data users and potential new users of the existence of this new DTM.

[For the reporting period, please list all publications, e.g. peer-reviewed journals, book chapters, conference papers, etc.) of which you are aware, within the reporting period, including a reference to the EMODnet data or data products which is being discussed.]

List of known publications using EMODnet data or data products				
Date	Type and name of journal, conference, ...	Publication title including DOI (if known)	Author(s)	Organisation(s)
10/20	<i>Master Thesis</i>	Análisis del impacto en la inundación costera ocasionado por el temporal marítimo Gloria.	López Muñoz, M.	UNIVERSIDAD DE CANTABRIA, Spain
10/20	<i>Biogeosciences Discussions</i>	Microbial activity, methane production, and carbon storage in Early Holocene North Sea peats. <a href="https://doi.org/10.5194/bg-2020-383">https://doi.org/10.5194/bg-2020-383</a>	Lippmann, T. J., Van der Putten, N. N., Busschers, F. S., Hijma, M. P., van der Velden, P., de Groot, T., ... & Welte, C. U.	Vrije Universiteit Amsterdam, The Netherlands
10/20	<i>Continental Shelf Research</i>	Acoustic backscatter analysis of ground-fishing activity in the German North Sea sector. <a href="https://doi.org/10.1016/j.csr.2020.104292">https://doi.org/10.1016/j.csr.2020.104292</a>	Lüdmann, T., Saitz, Y. M., Metzinger, J., & Emeis, K. C.	University of Hamburg, Germany
10/20	<i>Deep Sea Research Part I: Oceanographic Research Papers</i>	Spatial distribution and habitat characterization of marine animal forest assemblages along nine submarine canyons of Eastern Sardinia (central Mediterranean Sea). <a href="https://doi.org/10.1016/j.dsr.2020.103422">https://doi.org/10.1016/j.dsr.2020.103422</a>	Moccia, D., Cau, A., Bramanti, L., Carugati, L., Canese, S., Follesa, M. C., & Cannas, R.	Università di Cagliari, Italy
10/20	<i>ICES Journal of Marine Science</i>	Tracking the spatiotemporal variability of the oxic-anoxic interface in the Baltic Sea with broadband acoustics <a href="https://doi.org/10.1093/icesjms/fsaa153">https://doi.org/10.1093/icesjms/fsaa153</a>	Weidner, E., Stranne, C., Sundberg, J. H., Weber, T. C., Mayer, L., & Jakobsson, M.	University of New Hampshire, USA
10/20	<i>Geoscientific Model Development Discussions</i>	HIDRA 1.0: Deep-Learning-Based Ensemble Sea Level Forecasting in the Northern Adriatic	Žust, L., Fettich, A., Kristan, M., & Ličer, M.	University of Ljubljana, Slovenia

10/20	<i>Marine Geology</i>	Late Quaternary tectono-sedimentary processes on an isolated offshore high marginal platform (NW Iberian Continental Margin). <a href="https://doi.org/10.1016/j.margeo.2020.106374">https://doi.org/10.1016/j.margeo.2020.106374</a>	López-Pérez, A. E., Rubio, B., Rey, D., Plaza-Morlote, M., & Pinheiro, L. M.	Universidade de Vigo, Spain
10/20	<i>Heritage</i>	Atlas of shipwrecks in Inner Ionian Sea (Greece): A remote sensing approach. <a href="https://doi.org/10.3390/heritage3040067">https://doi.org/10.3390/heritage3040067</a>	Geraga, M., Christodoulou, D., Eleftherakis, D., Papatheodorou, G., Fakiris, E., Dimas, X., ... & Ferentinos, G.	University of Patras, Greece
10/20	<i>Marine Ecology</i>	Keratose-dominated sponge grounds from temperate mesophotic ecosystems (NW Mediterranean Sea) <a href="https://doi.org/10.1111/maec.12620">https://doi.org/10.1111/maec.12620</a>	Enrichetti, F., Bavestrello, G., Betti, F., Coppari, M., Toma, M., Pronzato, R., ... & Bo, M.	University of Genoa, Italy
10/20	<i>Geosciences</i>	Identifying Trawl Marks in North Sea Sediments.. <a href="https://doi.org/10.3390/geosciences10110422">https://doi.org/10.3390/geosciences10110422</a>	Bruns, I., Holler, P., Capperucci, R. M., Papenmeier, S., & Bartholomä, A.	University of Bremen, Germany
10/20	<i>Water</i>	Assessment of Wave Storm-Induced Flood Vulnerability in Rhodes Island, Greece. <a href="https://doi.org/10.3390/w12112978">https://doi.org/10.3390/w12112978</a>	Gad, F. K., Chatzinaki, M., Vandarakis, D., Kyriakidou, C., & Kapsimalis, V.	Hellenic Centre for Marine Research, Greece
10/20	<i>BOOK</i>	Governing Future Challenges in Mediterranean Protected Areas. 10.26383/978-88-8080-402-4	Alfarè, L. T., & Ruoss, E.	Consiglio Nazionale delle Ricerche, Italy
10/20	<i>Marine and Petroleum Geology</i>	Factors controlling margin instability during the Plio-Quaternary in the Gela Basin (Strait of Sicily, Mediterranean Sea).	Gauchery, T., Rovere, M., Pellegrini, C., Cattaneo, A., Campiani,	National Research Council, Italy

		<a href="https://doi.org/10.1016/j.marpetgeo.2020.104767">https://doi.org/10.1016/j.marpetgeo.2020.104767</a>	E., & Trincardi, F.	
10/20	<i>Aquaculture</i>	Functional trait-based layers-an aquaculture siting tool for the Mediterranean Sea	Giacoletti, A., Lucido, G. D., Mangano, M. C., & Sarà, G.	University of Palermo, Italy
10/20	<i>Journal of Marine Science and Engineering</i>	Platform Optimization and Cost Analysis in a Floating Offshore Wind Farm.	Ghigo, A., Cottura, L., Caradonna, R., Bracco, G., & Mattiazzo, G.	Politecnico di Torino, Italy
10/20	<i>Open report</i>	A two-part seabed geomorphology classification scheme:(v. 2). Part 1: morphology features glossary. 10.5281/ZENODO.4075248	Dove, D., Nanson, R., Bjarnadóttir, L. R., Guinan, J., Gafeira, J., Post, A., ... & Scott, G.	British Geological Survey, UK
10/20	<i>Deep Sea Research Part I: Oceanographic Research Papers</i>	Exploring a deep-sea vulnerable marine ecosystem: <i>Isidella elongata</i> (Esper, 1788) species assemblages in the Western and Central Mediterranean <a href="https://doi.org/10.1016/j.dsr.2020.103406">https://doi.org/10.1016/j.dsr.2020.103406</a>	Carbonara, P., Zupa, W., Follesa, M. C., Cau, A., Capezzuto, F., Chimienti, G., ... & Maiorano, P.	COISPA Tecnologia & Ricerca - Stazione Sperimentale per lo Studio delle Risorse del Mare, Italy
10/20	<i>Aquatic Conservation: Marine and Freshwater Ecosystems.</i>	The high biodiversity and vulnerability of two Mediterranean bathyal seamounts support the need for creating offshore protected areas. <a href="https://doi.org/10.1002/aqc.3456">https://doi.org/10.1002/aqc.3456</a>	Bo, M., Coppari, M., Betti, F., Enrichetti, F., Bertolino, M., Massa, F., ... & Bavestrello, G.	Università degli Studi di Genova, Italy
10/20	<i>Ocean Modelling</i>	Implementation and assessment of a flux limiter based wetting and drying scheme in NEMO. <a href="https://doi.org/10.1016/j.ocemod.2020.101708">https://doi.org/10.1016/j.ocemod.2020.101708</a>	O'Dea, E., Bell, M. J., Coward, A., & Holt, J.	Met Office, UK
10/20	<i>Biogeosciences Discussions</i>	Organic carbon in surface sediments of the North Sea and Skagerrak. <a href="https://doi.org/10.5194/bg-2020-352">https://doi.org/10.5194/bg-2020-352</a>	Diesing, M., Thorsnes, T., & Bjarnadóttir, L. R.	Geological Survey of Norway, Norway
10/20	<i>. Natural Hazards</i>	The 6–7 July 2010 meteotsunami along the coast of Portugal: insights from data analysis and numerical modelling <a href="https://doi.org/10.1007/s11069-020-04335-8">https://doi.org/10.1007/s11069-020-04335-8</a>	Kim, J., & Omira, R.	Instituto Português Do Mar E da Atmosfera, Portugal

11/20	<i>Ocean Dynamics.</i>	Variational interpolation of high-frequency radar surface currents using DIVAnd	Barth, A., Troupin, C., Emma, R., Alvera Azcarate, A., Beckers, J. M., & Joaquín, T.	Université de Liège, Belgium
11/20	<i>Earth and Space Science Open Archive ESSOAr.</i>	Wave, Tide and Topographical Controls on Headland Sand Bypassing. <a href="https://doi.org/10.1002/essoar.10505252.1">https://doi.org/10.1002/essoar.10505252.1</a>	King, E. V., Conley, D. C., Masselink, G., Leonardi, N., McCarroll, R. J., Scott, T., & Valiente, N. G.	Plymouth University, UK
11/20	<i>Marine Biology</i>	The historical ecology and demise of the iconic Angelshark <i>Squatina squatina</i> in the southern North Sea 2. <a href="https://dx.doi.org/10.1007/s00227-020-03702-0">https://dx.doi.org/10.1007/s00227-020-03702-0</a>	Bom, R.A.; van de Water, M.; Camphuysen, C.J.; van der Veer, H.J. & van Leeuwen, A.	NIOZ Royal Netherlands Institute for Sea Research, The Netherlands
11/20	<i>Thesis</i>	Cálculo del campo teórico de la zona de estabilidad de los hidratos de gas natural biogénico en los márgenes continentales europeos.	Núñez Varela, E.	Universidad Politécnica de Madrid, Spain
11/20	<i>Bulletin of Volcanology</i>	Tsunamis from prospected mass failure on the Marsili submarine volcano flanks and hints for tsunami hazard evaluation. <a href="https://doi.org/10.1007/s00445-020-01425-0">https://doi.org/10.1007/s00445-020-01425-0</a>	Gallotti, G., Zaniboni, F., Pagnoni, G., Romagnoli, C., Gamberi, F., Marani, M., & Tinti, S.	University Bologna, Italy
11/20	<i>Journal of Geophysical Research: Oceans</i>	Breaking location of Internal Solitary Waves over a sloping seabed. <a href="https://doi.org/10.1029/2020JC016669">https://doi.org/10.1029/2020JC016669</a>	Cavaliere, D., la Forgia, G., Adduce, C., Alpers, W., Martorelli, E., & Falcini, F.	Roma Tre University, Rome, Italy
11/20	<i>Quarterly Journal of Engineering Geology and Hydrogeology.</i>	EMODnet collation of geological events data provides evidences of their mutual relationships and connections with underlying geology: a few examples from Italian seas.	Fiorentino, A., Battaglini, L., & D'Angelo, S.	Geological survey of Italy, Italy

		<a href="https://doi.org/10.1144/qjegh2019-147">https://doi.org/10.1144/qjegh2019-147</a>		
11/20	<i>Future Science Brief 6 of the European Marine Board Report</i>	Big Data in Marine Science. Alexander, B., Heymans, J. J., Muñiz Piniella, A., Kellett, P., Coopman, J. [Eds.]. DOI: 10.5281/zenodo.3755793	Guidi, L., Fernandez Guerra, A., Canchaya, C., Curry, E., Foglini, F., Irisson, J.-O., Malde, K., Marshall, C. T., Obst, M., Ribeiro, R. P., Tjiputra, J., Bakker, D. C. E.	The European Marine Board Ostend, Belgium
11/20	<i>Marine Environmental Research</i>	Main drivers of spatial change in the biomass of commercial species between summer and winter in the NW Mediterranean Sea <a href="https://doi.org/10.1016/j.marenvres.2020.105227">https://doi.org/10.1016/j.marenvres.2020.105227</a>	Lloret-Lloret, E., Pennino, M. G., Vilas, D., Bellido, J. M., Navarro, J., & Coll, M.	Institut de Ciències del Mar (ICM-CSIC), Spain
11/20	<i>Journal of Physics: Conference Series</i>	The structure of the Black Sea mesoscale eddies from the numerical modeling with various spatial resolution 10.1088/1742-6596/1675/1/012075	Puzina, O. S., & Mizyuk, A. I.	Marine Hydrophysical Institute RAS, Sevastopol, Russia
11/20	<i>Journal of Physics: Conference Series</i>	Estimation of the Azov Sea state based on the Black Sea hydrography doi:10.1088/1742-6596/1675/1/012120	Mizyuk, A. I., Lishaev, P. N., & Puzina, O. S.	Marine Hydrophysical Institute RAS, Sevastopol, Russia
11/20	<i>Türk Denizcilik ve Deniz Bilimleri Dergisi</i>	Submarine earthquakes in South-West Anatolia until the 18th century and their probable seismic sources.	AKSOY, M. E.	MUĞLA SITKI KOÇMAN ÜNİVERSİTESİ, Turkey
11/20		Investigations of the Rupture Mechanism Effects on the Induced Tsunami and Its Impact in Harbors.	Masina, M., Archetti, R., & Lamberti, A.	
11/20	<i>Ocean Modelling</i>	Modelling wave growth in narrow fetch geometries: The white-capping and wind input formulations.	Christakos, K., Björkqvist, J. V., Tuomi, L., Furevik, B. R., &	Norwegian Meteorological Institute, Norway

		<a href="https://doi.org/10.1016/j.ocemod.2020.101730">https://doi.org/10.1016/j.ocemod.2020.101730</a>	Breivik, Ø.	
11/20	<i>Geophysical Journal International</i>	Clusty, the waveform-based network similarity clustering toolbox: concept and application to image complex faulting offshore Zakynthos (Greece).  <a href="https://doi.org/10.1093/gji/ggaa568">https://doi.org/10.1093/gji/ggaa568</a>	Petersen, G. M., Niemz, P., Cesca, S., Mouslopoulou, V., & Bocchini, G. M.	GFZ German Research Centre for Geosciences, Germany
11/20	<i>In Varna Medical Forum</i>	Modelling Study With MIKE 21 And Analysis Of Data On Non-Fish Marine Resources.	Penchev, F., Petrova, E., & Mihneva, V.	Institute of Fish Resources – Varna, Bulgaria
11/20	<i>Frontiers in Marine Science.</i>	Modeling the Distribution of Habitat-Forming, Deep-Sea Sponges in the Barents Sea: The Value of Data.	Gonzalez-Mirelis, G., Ross, R. E., Albreetsen, J., & Buhl-Mortensen, P.	Institute of Marine Research, Bergen, Norway
11/20	<i>6.as Jornadas de Engenharia Hidrográfica / 1.as Jornadas Luso-Espanholas de Hidrografia Conference proceedings</i>	Evolução morfo-sedimentar da plataforma adjacente ao sistema fluvial do Tejo desde o Último Máximo Glaciário	Vinhas, A., & Rodrigues, A.	Portuguese Hydrographic Service, Portugal
11/20	<i>Miscellanea Geographica</i>	Using GMT for 2D and 3D Modeling of the Ryukyu Trench Topography, Pacific Ocean.  <a href="https://doi.org/10.2478/mgrsd-2020-0038">https://doi.org/10.2478/mgrsd-2020-0038</a>	Lemenkova, P.	Ocean University of China, China
11/20	<i>Seismological Society of America</i>	Historical Earthquake Scenarios for the Middle Strand of the North Anatolian Fault Deduced from Archeo-Damage Inventory and Building Deformation Modeling.  <a href="https://doi.org/10.1785/0220200278">https://doi.org/10.1785/0220200278</a>	Benjelloun, Y., de Sigoyer, J., Dessales, H., Baillet, L., Guéguen, P., & Sahin, M.	Institut de Physique du Globe de Paris, Paris





*SI2.791269 – EMODnet Thematic Lot n°0 – HRSM2*

*Quarterly Progress Report*

## 6. Monitoring indicators

[Please refer to the standardised monitoring tool i.e., Matomo, to complete the monitoring and progress indicators excel template, and provide a short explanation in the table below on the numbers and trends for each indicator when possible/applicable. **Please indicate clearly if monitoring was carried out using tools other than Matomo.**]

Comments on the progress indicators in the excel template		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	Matomo/ other (Please state which monitoring tool was used to collate the information in each case)	For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of updated regional DTMs. The increase is part of maintenance by a few data providers .
B) Usage of data in this quarter		Considerable decrease in number of downloaded CDIs compared to previous quarter which was exceptional; however still a high number of downloads and by 30 users
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		The CDTMs are required as input for the Regional DTMs and most had already been delivered before the deadline. Some extra have been delivered as part of the RDTM production process, in particular for Arctic and Baltic Sea. For HR-DTMs production by data providers will start later in autumn 2020.
B) Usage of data products in this quarter		Some decrease in downloading, but still large. Considerable increase in use of WMS services, most probably also because of introduction of EBWBL.
3. Organisations supplying/approached to supply data and data products within this quarter		For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of updated regional

		DTMs. A few data providers have added more CDIs in the last quarter.
4. Online 'Web' interfaces to access or view data		New EBWBL WMTS service added
5. Statistics on information volunteered through download forms		Bathymetry is used by all sectors and for many applications as it provides basis information. A lot of users do not give details about themselves, unless they use Marine-ID in the download forms.
6. Published use cases		EMODnet Bathymetry has a steady number of use cases which all receive attention from users
8.1. Technical monitoring		The portal has a very good and stable response time and overall a very good up time (100%).
8.2. Portal user-friendliness (Visual harmonization score)		The portal has continued to have a 100% score.
9. Visibility & Analytics for web pages		As expected and targeted, the pages related to the "EMODnet bathymetry viewing and Download Service" have the highest score and this traffic is very stable, like also other sections and services. This means that users spent the most time browsing and interacting with the viewing service which as many functions and overall is the most interesting product and service that EMODnet Bathymetry has to offer. From there, users also undertake downloading of DTM tiles which has a continuous high score of circa 8000 – 10000 downloaded DTM files per quarter.
10. Visibility & Analytics for web sections		This indicator shows the interest of users for specific sections of the website, excluding the Bathymetry Viewing and Download service. Strangely enough, it seems that the helpdesk receives most attention, which could be an error in the colour used as it is more to expect that the CDI pages receive that attention. Although many feedback forms are received through the helpdesk, their numbers are far lower than the reported page views here, which needs to be validated.
11. Average visit duration for web pages		Average visit duration is erratic, ranging from few seconds to 2:30 minutes. The interpretation of this diagram is complex as it might be interpreted in

		terms of user's interest but also as difficulty to understand the concept described on the web page.
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*The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo. In some cases, numbers from other monitoring systems may also be reported (e.g. Awstats, Google Analytics), and if so, must be reported in the table above. Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken when interpreting absolute numbers or comparing results from different tools. It is often more sensible to consider trends over time collected by the same monitoring tool.*

## 7. Annex: Other documentation attached

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*[List in Annex if you wish to provide any additional information.]*

### *Feedback Questions and Answers*

Subject:Re: EMODnet Central Portal - Contact Form

Date: Tue, 6 Oct 2020 19:48:05 +0200

From: Dick M.A. Schaap <dick@maris.nl>

To: .....

CC: Nathalie Tonné <nathalie.tonne@emodnet.eu>, secretariat@emodnet.eu, 'thierry Schmitt' <thierry.schmitt@shom.fr>

Dear ....,

Thanks for your specific interest in EMODnet Bathymetry.

Concerning your remarks, it is currently not possible to modify the functioning of the user interface. Therefore, please make use of the existing functionality for retrieving the HR-DTMs of your interest. We will note your suggestion in our future planning.

Kind regards,

Dick M.A. Schaap

Technical Coordinator

On 10/6/2020 4:41 PM, Nathalie Tonné wrote:

Dear .... ,

Thank you very much for your interest in EMODnet!

I forward your question to the coordinators of EMODnet Bathymetry, Thierry Schmitt and Dick Schaap (both in cc), who will be happy to help you with your query.

Don't hesitate to contact us in case you have further questions.

Kind regards,

Nathalie Tonné for the EMODnet Secretariat

-----Original Message-----

From: [team-owner@emodnet.eu](mailto:team-owner@emodnet.eu) <[team-owner@emodnet.eu](mailto:team-owner@emodnet.eu)> Sent: 05 October 2020 17:05

To: [secretariat@emodnet.eu](mailto:secretariat@emodnet.eu)

Subject: EMODnet Central Portal - Contact Form

Submission information

Submitted on Monday, October 5, 2020 - 17:04

Organisation name

MapMedia

Organisation type

Business and Private Company

Please leave us your question or provide your feedback here Hello, I'm interested by the bathymetric high resolution area.

Select one by one the different file is a good way to miss one. Is there a possibility to select or download all files easily?

Thanks for any help,  
Best regards,

---

**Subject:**Re: EMODnet Bathymetry Feedback form

**Date:** Wed, 15 Nov 2020 14:09:56 +0100

**From:** Dick M.A. Schaap <dick@maris.nl>

**To:** ...

Dear ...,

Thank you for your interest in EMODnet Bathymetry. Concerning your question, please consider our Terms of Use at:

<https://www.emodnet-bathymetry.eu/home/terms-of-use>

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 11/13/2020 3:16 PM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ....

Email ....

Feedback / Question Dear Personnel I need to understand if the datasets named "High Resolution Areas", that I can easily download from here <https://portal.emodnet-bathymetry.eu/> are usable for commercial purposes Thanks so much for helping, regards, ..

---

**Subject:**Re: EMODnet Bathymetry Feedback form

**Date:** Wed, 18 Nov 2020 14:07:06 +0100

**From:** Dick M.A. Schaap <dick@maris.nl>

**To:** ....

Dear ..,

Thank you for your interest in EMODnet Bathymetry. Concerning your question, please consider our Terms of Use at:

<https://www.emodnet-bathymetry.eu/home/terms-of-use>

This means a yes to your question, but also a condition to acknowledge.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 11/18/2020 11:24 AM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ..

Email ..

Feedback / Question Hi, Can I combining DTM data with other information, or including it in our product / application?

---

**Subject:**VS: EMODnet Bathymetry Feedback form

**Date:** Thu, 19 Nov 2020 07:08:27 +0000

**From:** ....

**To:** Dick M.A. Schaap <dick@maris.nl>

Dear Dick,

Thank you very much for the quick reply! I have forwarded this to my colleague.

Best regards,

..

**Lähetäjä:** Dick M.A. Schaap <dick@maris.nl>

**Lähetetty:** keskiviikko 18. marraskuuta 2020 15.08

**Vastaanottaja:** .....

**Aihe:** Re: EMODnet Bathymetry Feedback form

Dear ..,

Thank you for your interest in EMODnet Bathymetry. Concerning your question, please consider our Terms of Use at:

<https://www.emodnet-bathymetry.eu/home/terms-of-use>

This means a yes to your question, but also a condition to acknowledge.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 11/18/2020 12:24 PM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ...

Email

Feedback /  
Question

Hi colleagues at the EMODnet Bathymetry! I am involved in EMODnet Seabed Habitats consortium and at the moment trying to get some seabed habitat models around Europe. I got an interesting question from my Norwegian colleague who has been providing us access to their habitat models. I thought to turn to you and ask directly for help from you: "I am thinking about creating a GitHub repository with my SDM code in it, and upload the needed data on e.g. Zenodo. My question is: am I allowed to redistribute bathymetric data that was originally downloaded from the EMODnet bathymetry portal? The actual product is a mosaicked file for the whole of the Barents Sea, projected onto a UTM grid, at 500 m resolution. The original data are seven tiles at 1/16 x 1/16 minute resolution." So she would like to share the "base layers" of her species distribution models which includes mosaiced EMODnet bathymetry DTM projected in UTM. Can she share the DTM data used in her model as long as she is referring to the original data source and e.g. writing down in the lineage how the original data has been treated? Or whatkind of redistribution policy you have? I should probably know also from the EMODnet Seabed Habitats perspective ;) Thank you for the help already in advance! Best wishes, ....Finnish Environment Institute (SYKE)

**Subject:**Re: EMODnet Bathymetry Feedback form

**Date:** Wed, 18 Nov 2020 16:20:27 +0100

**From:** Dick M.A. Schaap <dick@maris.nl>

**To:** ..

Dear ..,

Thank you for your interest in EMODnet Bathymetry. Unfortunately we can not provide you that option, so you should download the 64 DTM tiles and then import these again.

I hope you will manage.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 11/18/2020 3:00 PM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ...

Email ..

Feedback /  
Question

Hello, I work for the Finnish Environment Institute (SYKE) and would be interested in the bathymetry data for the whole European area as a single raster. Is there somewhere I can download the whole data set as a single raster for ArcGIS, so that I don't need to separately download and piece together all grid tiles? The resolution does not need to be as good, for example 1x1km resolution would be ok (mean depth). Best regards, ..

---

**Subject:**Re: EMODnet Bathymetry Feedback form

**Date:** Wed, 25 Nov 2020 09:42:24 +0100

**From:** Dick M.A. Schaap <dick@maris.nl>

**To:** ..

Dear ..,

Please see the Terms of Use. These are very clear and agreed by the EU.

<https://www.emodnet-bathymetry.eu/home/terms-of-use>

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 11/25/2020 9:32 AM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ..

Email ...

Feedback /  
Question

Are users free to Commercially exploit The emodnet-bathymetry, by, for example, combining it with other information, or by including it in their own product or application?



**Subject:**EMODnet Bathymetry Feedback form

**Date:** Fri, 18 Dec 2020 18:48:28 +0100

**From:** Dick M.A. Schaap <dick@maris.nl>

**To:** ...

Dear ..,

Thank you for your interest in EMODnet Bathymetry.

There are various options to convert the EMODnet grids from the non-projected lat lon degree system to UTM. The open source GIS system QGIS is a good option but may have a bit a steep learning curve if you have never used it before. You can download it from:

<https://qgis.org/en/site/forusers/download.html>

You should be aware though that converting a geographic grid to UTM grid (or vv) may result in a non-regularly spaced grid depending on the conversion method used.

Another option you may try is GlobalMapper. Although not freeware, they have a demo version that allows you to do most things for a limited time period. There are a few limitations but you should be able to convert the data.

You can get it from here:

<https://www.bluemarblegeo.com/trial.php>

GlobalMapper is more intuitive than QGIS and if you simply import the Esri ASCII files we have available in the EMODnet portal or use a Geotiff from the area of interest download option you use the “Tools – Configure” menu to change the projection. You can then export the data via the “file – export” menu to a regular grid in different formats.

Hope this helps

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 12/18/2020 5:49 PM, [noreply@maris.nl](mailto:noreply@maris.nl) wrote:

Name ...

Email ..

Feedback / Question Dear Sir oder Madam, my name is Johanne-Sophie and i'm currently writing my bachelor thesis. I have a question and i hope you may help me. For one of my exercises i need very exact bathymetry data. Most of the data which can be downloaded have the coordinates of the DEG system. I want to know, and maybe you can help me by that, can i get the data also in UTM coordinates? I am working with the program matlab. Do you otherwise know how i could convert a matrix with DEG coordinates into a matrix with UTM coordinates?

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