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 (7)

Reporting Period: 1/07/2020 – 30/9/2020

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Contents

Disclaimer

1. Highlights in this quarter

*[**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 29858 to 30493 CDI entries, and the number of Composite DTM entries has increased from 195 to 203 while the number of High Resolution DTMs has seen no changes. In particular, new CDIs were populated for the Greater North Sea region and some for the Black Sea, while the increase in CDTMs concerns entries for the Baltic region from Denmark, Lithuania, Poland, and Russian Federation, bringing in extra geo-coverage. The overall number of data providers for the CDI and both Sextant catalogues increased from 64 to 67 organisations. In the coming quarter it is expected that data providers will bring in more entries for the HR-DTM catalogue as part of the final project deliverable.

- **Task 2 - Compile a multi-resolution digital terrain model of European seas**: Each of the basins coordinators have now delivered their contribution for final integration. This step includes a detailed second quality assessment of the regional DTM products. As part of this final quality checking, GGSGc noticed an inconsistent lateral gridding shift of one cell for only one of the major contributor which has raised interrogations on the overall processes. All the stakeholders (data provider, Basin coordinator – Shom, Ifremer, GGSgc) are currently investigating the potential source of this problem with their own expertise either directly on the source data, or in the implementation of the algorithms used as part of the gridding processes in GLOBE, or on the steps undertaken for the merging of the data sources for this area. At the present stage, the integration process is on hold until a decision is taken either following the finding of an explanation or to use the data as they were delivered associated with a description of the caveat. Such a decision will be taken on short term, so that the rest of the process can be reactivated, with the main target of delivering the new EMODnet 2020 grid before the end of the year.

- **Task 3 - Establish best-estimate European digital coastlines and compile overview of legal baselines**: Deltares continued its work on generating a new release of the best-estimate digital coastlines for different tidal reference levels. To reach this objective two concurrent sub-tasks are undertaken. This comprises refining the vertical referencing by continuously improving the tidal modelling, now including seasonal modulations gathered from information gathered from the CMEMS Mercator Ocean model. It also includes refining the methodology relative to the extraction of intertidal bathymetry from satellite images (both from multi-spectral and radar). Experimentation and validation are currently undergoing on test sites in the Wadden Sea and for the Faro (Portugal area). In parallel, new legal baseline and coastline have been gathered from Poland and information from Portugal has been updated.

- **Task 4 - Establish machine-to-machine connections to data and data products:**Following the update of the GLOBE version installed on the DATARMOR HPC facility, practical tests have started involving partners CNR (Italy), HCMR (Greece), Ifremer (France). These tests implies :
  - Access to the software (and associated resources of the infrastructure) and associated data, per individual and shared projects.
  - Test that thematic actions are feasible (data import, sorting of the data per quality Index, merging of datasets, interpolation between dataset)
  - Share results / projects remotely held on DATARMOR

  Tests have been undertaken successfully, with the main comment that further improvement could be envisioned regarding the user friendliness of the overall procedure.

- **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 finalised the upgraded of the Sextant catalogue Content Management System (CMS) and associated manual, now supporting a staging process which improves quality control and consistency of the entries for CDTMs and HR-DTMs.

- **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. Since early 2020 a monthly technical remote meeting is organised. The main objective for the EMODnet Bathymetry community is to promote the generalisation of the metadata content (CDI/CPRD) which is currently more detailed, but which need more efforts to be fully implemented.
  Also, as part of the "EMODnet 10 years webinar", the preparation of the presentation made form IHO General Secretariat helped further describing the EMODnet Bathymetry data management/distribution model (leaving data provider at the center of all decisions concerning their datasets), promoting EMODnet Data Ingestion as a "trusted node" in the IHO concept of collecting Crowd Source Bathymetry.
  Both of these actions are part of long term actions to ensure that actions and contributions from the EMODnet Bathymetry members are fully interoperable with global initiatives.

- **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 6th quarterly progress report which was accepted by EU (EASME and DG MARE).

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.]

A. Priority issue(s) identified and communicated by EASME/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved

A. 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
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	Pending	Communication between Shom, GGSGC, and GSI to explain the shift and to decide which is correct (2018 / 2020).	End Oct 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
7 July 2020	IOPAN, Poland	Question about sediment accumulation rates for the Baltic sea	Feedback form	Same day	Resolved	Referred to EMODnet Geology	
14 July 2020	Red Rock Power, UK	Question about Geotiffs	Feedback form	Two days later	Resolved	Explanation given about Geotiffs and alternative solution given	
22 July 2020	Naval Group, France	Question about EMODnet Bathymetry World Base Layer Service (EBWBL)	Feedback form	1 week later	Resolved	Explanation given about WMTS service	
30 July 2020	Leibniz University,	Problem with downloading tiles.	Feedback form	Same day	Resolved	Error in DTM list in shop. Corrected.	

	Germany						
10 August 2020	Dagbladet Information, Denmark	Question about map used in article.	Feedback form	Same day	Resolved	Explanation given about background map and reference	
21 August 2020	NCIA – NATO, Belgium	Question about use of DTM and EBWBL for NATO purposes	Feedback form	One day later	Resolved	Explanations given and invitation for web conference	
5 October 2020	Map Media, ?	Question about downloading of HR-DTMs	Feedback form	One day later	Resolved	Explained how downloading works.	

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.)
22/09/2020	remote	Webinar: EMODNET: A decade of achievements connecting marine data to knowledge	no	A	Helping IHO better understanding the EMODnet Bathymetry and Ingestion projects
30/06-2/07	remote	Crowd Source Bathymetry Working Group	no	A	
28 July 2020	remote	SEABED 2030 technical meeting	no	A	Monthly meeting dealing with data gathering and dat compilation in the GEBCO / SEABED 2030 grid. Strenghening collaboration with between EMODnet and this group
11/09, 21/09 and 6/10	remote	Internal: progress meetings	yes	O	Progress and delivery of the basin compilation.
SUM				**O**	**Total # of meetings organised =3**
SUM				**A**	**Total # of meetings attended = 3**

B. Meetings/events planned in the future				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
4/11/2020	Remote	NATO : Introduction to EMODnet Bathymetry data and products	O	Introducing EMODnet Bathymetry and potentially other EMODnet Thematic data content to the NATO Geospatial unit
24-26 November 2020	Remote / France	MERIGEO	A	Shared presentation of mutual collaboration of Seabed Habitats and Bathymetry
1-3 December 2020	London, UK (if possible)	Oceanology International 2020 conference and exhibition	A	Presenting EMODnet Bathymetry at the stand of MARIS
Jan 2021	France/remote	GEBCO committees and symposium	O/A	International collaboration related to the GEBCO. To be organised by UNESCO and Shom in Paris

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)

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected
10/2020	Hydrogaphische Nchricheten	Article in a professional review (from the Deutsche Hydrographische Gesellshaft association).	Inform the German (and neighbouring countries from the North Sea and Baltic Sea) on the last development of EMODnet Bathymetry

[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)
07/2020	*Tectonics*	Slab Detachment, Mantle Flow, and Crustal Collision in Eastern Sicily (Southern Italy): Implications on Mount Etna Volcanism. doi.org/10.1029/2020TC006188	Barreca, G., Branca, S., Corsaro, R. A., Scarfì, L., Cannavò, F., Aloisi, M., ... & Faccenna, C.	University of Catania (IT)
07/2020	*Natural Hazards and Earth System Sciences Discussions*	Assessing the impact of explosive eruptions of Fogo volcano (São Miguel, Azores) on the tourism economy. doi.org/10.5194/nhess-2020-239	Medeiros, J., Carmo, R., Pimentel, A., Vieira, J. C., & Queiroz, G.	Centro de Informação e Vigilância Sismovulcânica dos Açores (PT)
07/2020	. *Continental Shelf Research*	Impact of storms on residence times and export of coastal waters during a mild autumn/winter period in the Gulf of Lion doi.org/10.1016/j.csr.2020.104192	Mikolajczak, G., Estournel, C., Ulses, C., Marsaleix, P., Bourrin, F., Martín, J., ... & Seyfried, L.	University of Toulouse (FR)
07/2020	*Water*	Relative Sea-Level Rise and Potential Submersion Risk for 2100 on 16 Coastal Plains of the Mediterranean Sea. doi.org/10.3390/w12082173	Antonioli, F., Falco, G. D., Presti, V. L., Moretti, L., Scardino, G., Anzidei, M., ... & Marsico, A.	Istituto Nazionale di Geofisica e Vulcanologia (IT)
07/2020	*International Journal of Greenhouse Gas Control*	Greenhouse gas emissions from marine decommissioned hydrocarbon wells: leakage detection, monitoring and mitigation strategies doi.org/10.1016/j.ijggc.2020.103119	Böttner, C., Haeckel, M., Schmidt, M., Berndt, C., Vielstädte, L., Kutsch, J. A., ... & Weiß, T.	GEOMAR Helmholtz Centre for Ocean Research Kiel (GE)

07/2020	*Okeanos*.	Energía eólica marina: Un nuevo sector marítimo y su encaje en las propuestas de ordenación espacial marina en las Islas Canarias.	Abramic Petkovic, A., García Mendoza, A., Fernández-Palacios Vallejo, M. Y., & Haroun Tabraue, R. J. (2020).	Univ. de Las Palmas de Gran Canaria (SP)
07/2020	*Quarterly Journal of Engineering Geology and Hydrogeology*.	INFOMAR data in the EMODnet Geology data portal supports marine spatial planning and offshore energy development in the Irish offshore. doi.org/10.1144/qjegh2020-033	Guinan, J., McKeon, C., O'Keeffe, E., Monteys, X., Sacchetti, F., Coughlan, M., & Aonghusa, C. N.	Geological Survey Ireland (IE)
07/2020	*Frontiers in Marine Science*	The" Corsica Channel Cold-Water Coral Province"(Mediterranean Sea). 10.3389/fmars.2020.00661	Angeletti, L., Castellan, G., Montagna, P., Remia, A., & Taviani, M.	ISMAR-CNR (IT)
07/2020	*Journal of Marine Systems*	New production across the shelf-edge in the northeastern North Sea during the stratified summer period. doi.org/10.1016/j.jmarsys.2020.103414	Bendtsen, J., & Richardson, K.	Norwegian Institute for Water Research (DK)
07/2020	*Geomorphology*	Formation and widening of a North Sea tunnel valley-The impact of slope processes on valley morphology. doi.org/10.1016/j.geomorph.2020.107347	Prins, L. T., Andresen, K. J., Clausen, O. R., & Piotrowski, J. A.	Aarhus Universit (DK)
07/2020	*Natural Hazards and Earth System Sciences*	Coastal impacts of Storm Gloria (January 2020) over the north-western Mediterranean. doi.org/10.5194/nhess-20-1955-2020	Amores, A., Marcos, M., Carrió, D. S., & Gómez-Pujol, L.	Mediterranean Institute for Advanced Studies (SP)
07/2020	*Nature Scientific data*	The International Bathymetric Chart of	Jakobsson, M., Mayer, L. A., Bringensparr, C.,	Stockholm University (SE)

		the Arctic Ocean Version 4.0. doi.org/10.1038/s41597-020-0520-9	Castro, C. F., Mohammad, R., Johnson, P., ... & Arndt, J. E. (2020).	
07/2020	*Journal of Quaternary Science*.	The evolution of the terrestrial-terminating Irish Sea glacier during the last glaciation. doi.org/10.1002/jqs.3229	Chiverrell, R. C., Thomas, G. S. P., Burke, M., Medialdea, A., Smedley, R., Bateman, M., ... & Ou, X.	University of Liverpool (UK)
07/2020	*Continental Shelf Research*	Tidal sand ridges on the shelf: A numerical study of their natural morphodynamic evolution and response to interventions. doi.org/10.1016/j.csr.2020.104195	Nnafie, A., Wolf, T. B. J., & de Swart, H. E.	Utrecht University (NL)
07/2020	*Geosciences*	A Review of Data Cleaning Approaches in a Hydrographic Framework with a Focus on Bathymetric Multibeam Echosounder Datasets. doi.org/10.3390/geosciences10070254	Le Deunf, J., Debese, N., Schmitt, T., & Billot, R.	Shom (FR)
07/2020	*Ecology and Evolution*	Movement patterns of large juvenile loggerhead turtles in the Mediterranean Sea: Ontogenetic space use in a small ocean basin. doi.org/10.1002/ece3.6370	Chimienti, M., Blasi, M. F., & Hochscheid, S.	Aarhus University (DK)
07/2020	*Aquatic Conservation: Marine and Freshwater Ecosystems*	Species-specific distribution model may be not enough: The case study of bottlenose dolphin (Tursiops truncatus) habitat distribution in Pelagos Sanctuary. doi.org/10.1002/aqc.3366	Vassallo, P., Marini, C., Paoli, C., Bellingeri, M., Dhermain, F., Nuti, S., ... & Gnone, G.	Università degli Studi di Genova (IT)
07/2020	Report	Description de la configuration	Theetten, S., & Charria, G.	Ifremer (FR)

		régionale BOB400 du modèle CROCO (Bay Of Biscay 400 mètres de résolution spatiale horizontale).	(2020).	
07/2020	*21st IEEE International Conference on Mobile Data Management (MDM)*	Sea Area Monitoring and Analysis of Fishing Vessels Activity: The i4sea Big Data Platform. 10.1109/MDM48529.2020.00063	Tampakis, P., Chondrodima, E., Pikrakis, A., Theodoridis, Y., Pristouris, K., Nakos, H., ... & Maina, I. (2020, June).	University of Piraeus (GR)
08/2020	*Journal of Quaternary Science*.	Formational history of the Wicklow Trough: a marine-transgressed tunnel valley revealing ice flow velocity and retreat rates for the largest ice stream draining the late-Devensian British–Irish Ice Sheet. doi.org/10.1002/jqs.3234	Coughlan, M., TÓth, Z., Van Landeghem, K. J., Mccarron, S., & Wheeler, A. J.	University College Dublin (IE)
08/2020	*The Journal of the Acoustical Society of America*	Predicting the exposure of diving grey seals to shipping noise. doi.org/10.1121/10.0001727	Trigg, L. E., Chen, F., Shapiro, G. I., Ingram, S. N., Vincent, C., Thompson, D., ... & Embling, C. B.	University of Plymouth (UK)
08/2020	In European Harbour data repository	*Trading terps and Geest boundary harbours – medieval trading ports on the German* doi.org/10.22032/dbt.38393	Majchczack, B.	University Kiel (GE)
08/2020	Geogaceta	Los volcanes de las islas Columbretes (Mediterráneo occidental) I: el volcán de Columbrete Grande y el volcán de Navarrete.	Ancochea, E., & Huertas, M. J.	Universidad Complutense de Madrid (SP)

08/2020	Thesis	*The impact of sea level rise on tides, waves and tidal sand ridges in the North Sea*	Bindels, M.	Utrecht University (NL)
08/2020	*Journal of Environmental Radioactivity*	Validation of a database of mean uranium, thorium and potassium concentrations in rock samples of Portuguese geological units, generated of literature data. doi.org/10.1080/14634988.2020.1807303	Domingos, F., Cinelli, G., Neves, L., Pereira, A., Braga, R., Bossew, P., & Tollefsen, T.	University of Coimbra (PT)
08/2020	*Journal of Volcanology and Geothermal Research*	Potential mass movements on the Palinuro volcanic chain (southern Tyrrhenian Sea, Italy) and consequent tsunami generation doi.org/10.1016/j.jvolgeores.2020.107025	Gallotti, G., Passaro, S., Armigliato, A., Zaniboni, F., Pagnoni, G., Wang, L., ... & Ventura, G.	Department of Physics and Astronomy (DIFA), Bologna, Italy
08/2020	*Marine Ecology Progress Series*	Climate change in the Bay of Biscay: Changes in spatial biodiversity patterns could be driven by the arrivals of southern species. doi.org/10.3354/meps13401	Le Marchand, M., Hattab, T., Niquil, N., Albouy, C., & Lasram, F. B. R. (2020).	France Enérgies Marines (FR)
08/2020	*Journal of Marine Systems*	Seafloor features and benthic foraminifera off Linosa Island (Sicily Channel, southern Mediterranean). doi.org/10.1016/j.jmarsys.2020.103421	Ferraro, L., Innangi, S., Di Martino, G., Russo, B., Tonielli, R., & Innangi, M.	CNR-ISMAR (IT)
08/2020	*The Journal of the Acoustical Society of America*	Exclusion of tidal influence on ambient sound measurements doi.org/10.1121/10.0001704	van Geel, N. C., Merchant, N. D., Culloch, R. M., Edwards, E. W., Davies, I. M., O'Hara Murray, R. B.,	Scottish Marine Institute (UK)

			& Brookes, K. L.	
08/2020	*Coral Reefs*	Feeding biology of a habitat-forming antipatharian in the Azores Archipelago. doi.org/10.3390/w12082221	Rakka, M., Orejas, C., Maier, S. R., Van Oevelen, D., Godinho, A., Bilan, M., & Carreiro-Silva, M.	University of the Azores (PT)
08/2020	*Water*	Seven Good Reasons for Integrating Terrestrial and Marine Spatial Datasets in Changing Environments doi.org/10.3390/w12082221	Prampolini, M., Savini, A., Foglini, F., & Soldati, M.	ISMAR (IT)
09/2020	Thesis	A seismological and remote sensing approach of geodynamic phenomena	Nikos A Svigkas	Aristotle University of Thessaloniki (GR)
09/2020	Thesis	*Do cold-water corals spatially correlate with submarine canyons in the Bay of Biscay?: A GIS study analysing the spatial distribution of cold-water corals along the seascape of the Bay of Biscay*	Asdal, Kaya	University of Agder (NO)
09/2020	*Journal of Geophysical Research: Oceans*	Revisiting the Role of Convective Deep Water Formation in Northern Baltic Sea Bottom Water Renewal. doi.org/10.1029/2020JC016114	Gieße, C., Meier, H. M., Neumann, T., & Moros, M.	Leibniz Institute for Baltic Sea Research Warnemünde (IOW), Rostock, Germany
09/2020	Presentation: 1st virtual EXCELSIOR International Technical Workshop	Offshore wind power assessment around Cyprus using Sentinel-1 data.	Kyriakidis, P	Cyprus University of Technology (CY)
09/2020	*Quarterly Journal of Engineering Geology and Hydrogeology*.	Submarine landslide: mapping the susceptibility in European seas. doi.org/10.1144/qjegh2020-027	Innocenti, C., Battaglini, L., D'Angelo, S., & Fiorentino, A.	ISPRA (IT)
09/2020	*Quarterly Journal of Engineering Geology and*	Mapping the Geology and Topography of the European Seas (European Marine	Moses, C. A., & Vallius, H.	Edge Hill University (UK)

	Hydrogeology.	Observation Data Network, EMODnet). doi.org/10.1144/qjegh2020-131		
09/2020	*Energy*	A new directional wave spectra characterization for offshore renewable energy applications doi.org/10.1016/j.energy.2020.118828	Ribeiro, P. J. C., Henriques, J. C. C., Campuzano, F. J., Gato, L. M. C., & Falcão, A. F. O.	Universidade de Lisboa (PT)
09/2020	*Nature Communications*	Climate action requires new accounting guidance and governance frameworks to manage carbon in shelf seas. doi.org/10.1038/s41467-020-18242-w	Luisetti, T., Ferrini, S., Grilli, G., Jickells, T. D., Kennedy, H., Kröger, S., ... & Pryce, T.	Centre for Environment, Fisheries, and Aquaculture Science (UK)
09/2020	*Journal of Structural Geology*	Ongoing shortening in the Dinarides fold-and-thrust belt: A new structural model of the 1979 (Mw 7.1) Montenegro earthquake epicentral region. doi.org/10.1016/j.jsg.2020.104192	Schmitz, B., Biermanns, P., Hinsch, R., Đaković, M., Onuzi, K., Reicherter, K., & Ustaszewski, K.	Friedrich-Schiller-Universität Jena (GE)
09/2020	*Journal of Geophysical Research: Solid Earth*	Temporal modulation of the local microseism in the North Sea. doi.org/10.1029/2020JB019770	Becker, D., Cristiano, L., Peikert, J., Kruse, T., Dethof, F., Hadziioannou, C., & Meier, T.	Universität Hamburg (GE)

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.

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

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

Feedback Questions and Aswers

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 7 Jul 2020 11:28:40 +0200

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

To:

Dear ..,
Thank you for your interest in EMODnet Bathymetry. Concerning your question: we focus on bathymetry and not on changes in time. Possibly EMODnet Geology can help you as they are looking into erosion and sedimentation of the coasts. Please have a look at: https://www.emodnet-geology.eu/
Kind regards
Dick M.A. Schaap
Technical coordinator

On 7/7/2020 11:14 AM, noreply@maris.nl wrote:

Name

Email

Feedback / Question Is it possible to obtain sediment accumulation rates for the Baltic sea/parts of the Baltic sea?

Subject:EMODnet Bathymetry Feedback form

Date: Thu, 16 Jul 2020 07:42:09 +0200

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

To:

Dear..,
Thank you for your interest in EMODnet Bathymetry. Concerning your question: the RGB geotiff is a photographic image much like the pictures on the WMS service. The RGB tiffs do not contain depth values.
You better should download the Esri Ascii grids instead and import these into ArcGis. Note that the EMODnet DTM is not projected. ArcGis automatically reprojects imported datasets to the projection used in the current active project. This may lead to some stretching.
Hope this will help you.
Kind regards
Dick M.A. Schaap
Technical Coordinator

On 7/14/2020 6:11 PM, noreply@maris.nl wrote:

Name

Email

Feedback / Question	Hello, we have a (probably old) bathymetry tiff for UK in our database, and while trying to find if it matches your latest ones DTM I realised that in the RGB Geotiff bathymetry, when I click on the raster in ArcGIS, instead of depth values there are some Stretch pixel values, which don't seem to be the depth values (and also are completely different from the previous Emodnet bathymetry we have). Could you, please, help me with that? Thank you,

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Subject:Re: EMODnet Bathymetry Feedback form

Date: Fri, 31 Jul 2020 11:04:37 +0200

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

To:

Dear ,
Thank you for your interest in EMODnet Bathymetry.
Currently, the EMODnet Bathymetry World Base Layer Service (EBWBL) is only available as a WMTS service, allowing you to integrate it in your online GIS application as a world base layer. There are no plans yet for making it also available as downloadable tiles. The latter is so far only available for the European sea areas and North East Atlantic Ocean as part of the EMODnet DTM (see: https://www.emodnet-bathymetry.eu/data-products), concerning the bathymetry part.
Kind regards
Dick M.A. Schaap
Technical Coordinator

On 7/22/2020 9:06 AM, noreply@maris.nl wrote:

Name

Email

Feedback / Question	We are interested in your "EMODnet Bathymetry World Base Layer Service". Is it possible to use these data in an offline environment ? Are these data available for download to be use in a local GIS server ? Thanking you in advance

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Subject:EMODnet Central Portal - Contact Form for Bathymetry

Date: Thu, 30 Jul 2020 11:48:19 +0200

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

To:

Dear ..,
We have checked and identified that you tried to download tiles in ESRI format and MSL reference, however for the previous EMODnet DTM release from 2016.

At our end we have made an error in the shop, as we have introduced ESRI MSL tiles only starting from the 2018 release of the EMODnet DTM, which is an improved product and with higher resolution (1/16 arc minutes X 1/16 arc minutes) versus the 2016 version with 1/8 arc minutes X 1/8 arc minutes.
For that reason, I suggest that you repeat your shopping requests but now for all the 2018 MSL ESRI DTM tiles that are of interest for you. Note that the 2018 version has in total 64 tiles, because of increase in data volume, while the 2016 DTM had 4 times larger tiles in surface coverage. Anyway, the map interface makes it very easy to chose the right tiles.
I hope this alternative will help you.
In the meantime we will update the shop catalogue and take out the non-existing 2016 MSL ESRI tiles.
Kind regards
Dick M.A. Schaap
Technical Coordinator EMODnet Bathymetry

On 7/30/2020 10:01 AM, Nathalie Tonné wrote:
Dear …,

Thank you very much for your interest in EMODnet!
I'm sorry to hear you experienced troubles downloading EMODnet data. I put you in contact with the EMODnet Bathymetry coordinators (Thierry Schmitt and Dick Schaap, both in copy of this email), who will follow-up with you.

All the best and stay safe,
Nathalie for the EMODnet Secretariat

-----Original Message-----
From: team-owner@emodnet.eu <team-owner@emodnet.eu>
Sent: 29 July 2020 18:24
To: secretariat@emodnet.eu
Subject: EMODnet Central Portal - Contact Form

Submission information
Submitted on Wednesday, July 29, 2020 - 18:23

Organisation name
Leibniz University Hannover

Organisation type
Academia/Research

Please leave us your question or provide your feedback here Dear Sir or Madam,

I just wanted to download EMODNET-Bathymetry data. Unfortunately, the desired dataset (with MSL reference) cannot be downloaded. The links I received via emal are all dead. I requested following tiles for the year 2016: A2, B2, C2, A3, B3, and C3.

I hope you are able to fix this issue.

Subject:Re: EMODnet Central Portal - Contact Form

Date: Mon, 10 Aug 2020 11:18:51 +0200

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

To:
Dear ..,

We had a look at the article and it appears that they are using the digital bathymetry as provided by EMODnet Bathymetry as base layer for figure 3, whereby the authors themselves added the seismic contours and the official EEZ division of the North Sea.
You can find the EMODnet Bathymetry base layer at: https://www.emodnet-bathymetry.eu/data-products and in particular: https://portal.emodnet-bathymetry.eu/
A good source for the EEZ division is: https://doi.org/10.14284/403
For the seismic survey tracks you have to consult the authors of the Elsevier paper.
Kind regards,
Dick M.A. Schaap
Technical Coordinator EMODnet Bathymetry

On 8/10/2020 10:42 AM, Nathalie Tonné wrote:
Dear ..,

Thank you very much for your interest in EMODnet!
Regarding you question, in copy in the coordinators of EMODnet Bathymetry, Thierry Schmitt and Dick Schaap, who will be able to help you with your query.

@Thierry and Dick, kindly keep the Secretariat in copy please.

All the best and stay safe,
Nathalie for the EMODnet Secretariat

-----Original Message-----
From: team-owner@emodnet.eu <team-owner@emodnet.eu> Sent: 10 August 2020 10:13
To: secretariat@emodnet.eu
Subject: EMODnet Central Portal - Contact Form

Submission information
Submitted on Monday, August 10, 2020 - 10:13

Organisation name
Dagbladet Information

Organisation type
Others

Please leave us your question or provide your feedback here Hi there

I was looking at the map on page 3 in this report, which is based on your data. I was wondering if you could help me find it?

https://reader.elsevier.com/reader/sd/pii/S1750583619306504?token=8A2961DD8AE467B256FF3AD9597B9334A14EB56F5F5B30CCCD21702B3F96314F4A93C591AE9198518658DF04ECF71D0E

I'm hoping to recreate a version of that map in our own design – with proper accreditation, of course.

Thanks a lot!

Subject:Re: EMODnet Central Portal - Contact Form

Date: Fri, 21 Aug 2020 15:08:52 +0200 (CEST)

From: Thierry Schmitt <thierry.schmitt@shom.fr>

To: ...

Dear ...,

In order to be somewhat clearer, EMODnet Bathymetry delivers 3 main products

1) DTM in grid files (as described in my previous email) -> you can download each tiles and render them as you want. You can also request he bathymetric information and generate isobaths or vertical profiles as you want with your dedicated GIS software and a color ramps of your choice

2) EMODnet bathymetry OGC services (see https://ows.emodnet-bathymetry.eu/) -> some of the services can be interrogated (for example you can interogate the value of a pixel wich will be given in meters depth). The WMS is color coded with the same style as the DTM in our portal (or also the multicolor style)

3) EMODnet World Base Layer WMTS service (https://tiles.emodnet-bathymetry.eu/), which basically consists of pre-rendered tiled images (with the EMODnet style color) for the entire globe (given in different projections). You can not request the depth in the image. However, the main difference betwen 2 and 3 is that 2 only focuses on European waters while 3 covers the entire globe with data originating from GEBCO.

I will have a look with colleagues, how we could simply share the colouring style.

Also, if you feel that a more detailed presentation of the overall EMODnet Bathymetry project is of interest to NATO NCIA, let me know and we can arrange a remote meeting in the coming days/weeks.

Regards,

Thierry

De:
À: "Thierry Schmitt" <thierry.schmitt@shom.fr>
Cc: "Nathalie Tonne" <nathalie.tonne@emodnet.eu>, "secretariat" <secretariat@emodnet.eu>, "Dick M.A. Schaap" <dick@maris.nl>
Envoyé: Vendredi 21 Août 2020 07:32:16
Objet: RE: EMODnet Central Portal - Contact Form

Dear Thierry,

Thanks for explanation.

As I understand, you do not offer the WMTS tiles pre-rendered for download?

If that's the case, we will go along your suggested route of downloading the Digital Elevation Model tiles and render them ourselves.

For this, are you able to share the style parameters? Which colour-ramp and hill shading, etc is used? We would like to stay close to your style as our customer is fond of the look and feel of your product.

Thank you again for your help,

Kind regards,

From: Thierry Schmitt <thierry.schmitt@shom.fr>
Sent: 20 August 2020 18:22
To:

Cc: Nathalie Tonne <nathalie.tonne@emodnet.eu>; secretariat <secretariat@emodnet.eu>; Dick M.A. Schaap <dick@maris.nl>
Subject: Re: EMODnet Central Portal - Contact Form

Dear ,

thank you for your interest in using EMODnet bathymetry.

My understanding from your question is that you are using our WM(T)S service, which as you can see has its own specific rendering (mean depth and mean depth multicolor being two different rendering flavors). If you want to go a step forward in using EMODnet products may I encourage you to get hold of one or more Digital Elevation Model tiles, which contain an estimate of the bathymetry per grid node. You can get access to these tiles straight from our portal at https://portal.emodnet-bathymetry.eu/, then clicking on Download (to the right of the upper part of the screen). Here you will get gridded products in one of the format that you are surely aware of (asc, netecdf, csv with mutiple attributes aka .emo ...). Associated to some of the formats you will also get access to other valuable attributes per grid node (including the lineage to the source data). From there, you will then be able to exploit/render the information with your own color ramp and/or symbology.

Also let me encourage you to visit the following page (https://tiles.emodnet-bathymetry.eu/) where you will get access to our worldwilde bathymetric coverage integrated into a WMTS service including both European information (from our EMODnet Bathymetry group) and other worldwide information from GEBCO (and other sources). Note that this also is a pre-rendered service that may be useful as a background layer, but if you need to access the "grid values", I will also refer you to the details provided in the previous paragraph of this email.

Let me know if this answers your question. Else do not hesitate to further ask for details.

We are particularly interested in the usage you can make from our products, so fell free to come back to us with your feedback and your "use case".

Regards

Thierry

De: ..

To: <nathalie.tonne@emodnet.eu>
Cc: "secretariat" <secretariat@emodnet.eu>, "Thierry Schmitt" <thierry.schmitt@shom.fr>, "Dick M.A. Schaap" <dick@maris.nl>
Envoyé: Jeudi 20 Août 2020 16:00:44
Objet: RE: EMODnet Central Portal - Contact Form

Dear Nathalie,

Thank you for coming back to me and connecting me with your colleagues.

Looking very much forward to discussing the Bathymetry data products further.

Best regards,

From: Nathalie Tonné <nathalie.tonne@emodnet.eu>
Sent: 20 August 2020 15:10
To:

Cc: secretariat@emodnet.eu; 'thierry Schmitt' <thierry.schmitt@shom.fr>; 'Dick M.A. Schaap' <dick@maris.nl>
Subject: RE: EMODnet Central Portal - Contact Form

Dear ..,

Thank you very much for your interest in EMODnet!

If I interpret your email correctly, you are referring to our EMODnet Bathymetry data products. I hereby forward your question to the EMODnet Bathymetry coordinators, Thierry Schmitt and Dick Schaap (both in copy) who will for sure be able to help you further with your query.
@Thierry and Dick: could you please help Andreas with his question, and keep the Secretariat in copy?

All the best and stay safe,
Nathalie for the EMODnet Secretariat

-----Original Message-----
From: team-owner@emodnet.eu <team-owner@emodnet.eu>
Sent: 20 August 2020 14:59
To: secretariat@emodnet.eu
Subject: EMODnet Central Portal - Contact Form

Submission information
Submitted on Thursday, August 20, 2020 - 14:58

Organisation name
NATO CI Agency

Organisation type
NGOs/Civil Society

Please leave us your question or provide your feedback here Hello, we are interested in using the data on your portal within NATO.
We found mean depth, mean depth in multicolor and CDI Data but the differences are not quite clear. Could you please send us more detail on specification and availability?

We are generally interested in the actual WMTS base data (cache/bundles/…) and the 'raw' data used to produce the WMTS tiles. For the latter, is there also symbology to style the data in the same way as on your portal?
Thank you in advance for your support,
best regards,
Andreas

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 <team-owner@emodnet.eu> Sent: 05 October 2020 17:05
To: 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,