



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot – Bathymetry – High Resolution Seabed Mapping (HRSM)

EASME/EMFF/2017/1.3.1.2/01/SI2.791269

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

EMODnet Quarterly Progress Report (2)

Reporting Period: 01/04/2019 – 31/06/2019



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1 Highlights during the reporting period

- **Task 1 - Gather and give access to bathymetric survey data:** During the reporting period, the number of data sources has remained constant with a total number of 26223 CDI entries and 147 Composite DTM entries. There are contributions from 51 data providers. During the Kick-off meeting held in Brest, all the data providers have been trained on the ad-hoc software needed to prepare their data entries (Mikado and Sextant Catalogue). Also data providers have been asked to review their existing entries in both catalogues for improving and completing the Quality Index information. Along with partner EOMAP areas for additional composite DTMs estimated from satellite imagery have also been identified. Finally, data providers have been asked to further populate the High Resolution DTM layer. Data providers have been asked for new and improved entries as well as for completing the metadata in the special HRDTM Sextant catalogue.
- **Task 2 - Compile a multi-resolution digital terrain model of European seas:** The latest version of the EMODnet DTM (Digital Terrain Model) was released 24th September 2018 with its improved resolution of $1/16 * 1/16$ arc minutes (circa $115 * 115$ m²). In order to improve this model for the current release, it has been requested for all the partners, and more specifically basin coordinators, to review the current DTM and identify remaining artefacts. Following this review, data providers will be able to take actions needed in order to minimise them.
- Also some improvements to the GLOBE software have been identified including a complete review of the internal format (Netcdf-4) along also with the development of a spike identification detector and removal. Moreover, the new version of the GEBCO (GEBCO 2019), including our 2018 EMODnet Bathymetry version is planned to be included in the future global DTM.
- **Task 3 - Establish best-estimate European digital coastlines and compile overview of legal baselines:** As part of the new contract, an update of the coastline and the legal baselines products will be delivered. In order to do so, partner Deltares has identified the difficulties faced during the previous production. Currently, Deltares is focused on improving the digital coastline method estimated from satellite views. In parallel, the Kick-off meeting has been the occasion to ask all the partners to provide any update of their official coastline and legal baseline, along with personal contact from neighbouring countries without representatives in the EMODnet HRSM consortium.
- **Task 4 - Establish machine-to-machine connections to data and data products:** The pilot for the Collaborative Virtual Environment (CVE) was successfully finalised in the previous contract. It had a focus on generating 2 neighbouring RDTMs (West Med and Central Med) and 1 additional RDTM (Bay of Biscay) using Globe online on a cloud computing platform and involving a few basin coordinators. Two ways for working with the GLOBE software on the cloud were set-up: 1) as a full package and installed as a Docker container instance; and 2) as a set of OGC WPS services for selected GLOBE functions. The pilot has provided insights into the practical feasibility of adopting the cloud for the EMODnet Bathymetry workflow and where it should be improved. Based upon this experience it is decided to continue with developing the CVE and adopting it for generating the 3 RDTMs that together cover the Mediterranean. This should take place from January 2020 onwards. In parallel IFREMER will continue the WPS development, with extra functions for RDTM product checks.
- **Task 5 - Maintain a web portal:** Editorial activities took place to update several pages of the web portal for describing the new EMODnet layers and functionalities that were added as part of finalising the previous contract.
- **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:** activities are on-going as earlier reported in the 'Report on Interoperability and International Collaboration' which was submitted to the EU. Preliminary discussion have started with IHO-IOC General Bathymetric Chart of the Ocean and associated Seabed 2030 initiative towards the ratification of a Memorandum of Understanding.
- **Task 8 - Achieve INSPIRE compliance:** The 'Report on Interoperability and International Collaboration' from early 2018 also describes how EMODnet Bathymetry is seeking INSPIRE compliance for its range of services;
- **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.
- **Task 10 – Project management:** The coordinator and technical coordinator prepared the 1st quarterly progress report which was accepted by EU (EASME and DG MARE). Associated with the final deliverables of the

previous contract and seeking clarity on the definition ‘contractual results’, a new proposition for a transfer protocol document has been submitted to EASME with associated completed contractual annexes related to transfer of results.

As follow-up to the signing of the new contract by EU and Shom, the consortium agreement has been signed by consortium partners and subcontracts for subcontractors.

The kick-off meeting has been held on the 11-12 June 2019, in Brest, France. All the partners were invited in order to discuss further the implementation of the future update of data sources and the realisation of the new DTM. Workshops related to the implementation of EMODnet Bathymetry’s methodology with the corresponding software were also given.

2 Challenges encountered during the reporting period

| Main challenge | Measures taken |
|----------------|----------------|
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| | |

3 User Feedback

| Date | Organisation | Type of user feedback (e.g. technical, case study, etc.) | Response time |
|---------------|--------------------|--|---|
| 2 April 2019 | Company | HAFOK, Sweden | Continued communication about shift in land cover |
| 3 April 2019 | Company | Noveltis, France | Question about .emo format |
| 8 April 2019 | Company | Noveltis, France | Question about metadata for HR-DTMs |
| 17 April 2019 | Company | Global Maritime Services, UK | Question whether a tile for MSL is correct |
| 17 April 2019 | Company | Svasek, The Netherlands | Question about a tile with issues |
| 25 April 2019 | Unknown | ?,? | Question about wrecks layer |
| 25 April 2019 | Research Institute | Institute of Marine Research, Norway | Question about 2D – 3D and about ESRI ASCII format of tiles |
| 25 April 2019 | Unknown | ?,? | Question about Help page |
| 9 May 2019 | University | University of Louvain, Belgium | Question about problem with downloading |
| 9 May 2019 | Company | Grizzly Geosciences Inc, USA | Question about problem with GMT software |
| 10 May 2019 | Company | Grizzly Geosciences Inc, USA | Question about GeoTiffs |
| 14 May 2019 | Private | ?,? | Question about possible job positions |

| | | | |
|--------------------|------------|------------------------------|-----------------------------------|
| 16 May 2019 | Company | Wsense, Italy | Question about maximum zoom level |
| 20 May 2019 | University | University of Salento, Italy | Question about NetCDF |
| 21 May 2019 | Unknown | ?,? | Question about WMS in Arc |
| 5 June 2019 | Unknown | ?, France | Question about resolution |

Annex 1 gives more details.

4 Meetings held/attended since last report

Table: Meetings organised and attended.

| Date | Type event (meeting, training (workshop), etc.) | Attended (A) / Organised (O) | Short description and main results (# participants, agreements made, etc.) |
|----------------------|---|------------------------------|--|
| 11-12/06/2019 | Kick off meeting | O | All Representatives of the consortium met in Brest to implement the production agenda and refresh their skills related to the use of the software. |
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| | | | |
| SUM of O | | | (Total # of meetings organised) |
| SUM of A | | | (Total # of meetings attended) |

5 Outreach and communication activities

Table: Communication activities.

| Date | Communication action/material | Short description (of the material, title, ...) and/or link to the activity | Main results (# participants, # views, # press clippings, etc.) |
|-------------------|--|--|---|
| 05/06/2019 | Scientific paper | “Seafloor Mapping – The Challenge of a Truly Global Ocean Bathymetry” https://www.frontiersin.org/articles/10.3389/fmars.2019.00283/full | 2685 views |
| 20/06/2019 | Conference paper and associated presentation | EMODnet Bathymetry a compilation of bathymetric data in the European waters Presented at IEEE Oceans 2019 | 2000 attendees at the conference |
| 29/06/2019- 10/07 | Presentation / small group conferences | La Mer XXL | Over 30000 visitors |
| SUM ... | | | (Total # of ...) |
| SUM ... | | | (Total # of ...) |

Relevant scientific and/or popular publications (scientific papers, book chapters, conference papers, ...) you published or of which you know they have been published using/referring to EMODnet data or data products during this reporting period must also be reported here.

[Please, provide information in the table.]

Table: List of known publications using EMODnet data or data products.

| Date | Name of journal, conference, ... | Publication title | Authors | Organisation(s) |
|------------|--|--|---|----------------------------|
| April 2019 | Peer Reviewed Journal: <i>Science advances</i> . | <i>Ice-stream demise dynamically conditioned by trough shape and bed strength.</i> | BRADWELL, T., SMALL, D., FABEL, D., et al. | University of Stirling, UK |
| April 2019 | Peer Reviewed Journal: <i>Geosciences</i> . | Legacy Data: How Decades of Seabed Sampling can Produce Robust Predictions and Versatile Products. | MITCHELL, P J., ALDRIDGE, J, et DIESING, M. | CEFAS, UK |
| April | Peer Reviewed Journal: | Fault pattern and seismotectonic potential at | BARRECA, | University of |

| | | | | |
|------------|---|--|---|---|
| 2019 | <i>Tectonophysics.</i> | the south-western edge of the Ionian Subduction system (southern Italy): New field and geophysical constraints. | G., SCARFÌ, L., GROSS, F., et al. | Catania, Italy |
| April 2019 | <i>Peer Reviewed Journal: European Harbour Data Repository.</i> | Medieval Bruges and its outports. A landscape-archaeological contribution to the Zwin-debate. 2019. | TRACHET, J. et DE RUIJSSCHER, D. | University of Gent, BE |
| April 2019 | <i>Peer Reviewed Journal: European Harbour Data Repository.</i> | The Thracian harbour city Ainos. | SCHMIDTS, T. | University of Tuebingen, Germany |
| April 2019 | <i>Peer Reviewed Journal: Nature Scientific data.</i> | Nutrient, pigment, suspended matter and turbidity measurements in the Belgian part of the North Sea. | MORTELMA NS, J., DENEUDT, K., CATRIJSSE, A., et al. | VLIZ, Oostende, Belgium |
| April 2019 | <i>Peer Reviewed Journal: Wind Energy.</i> | Estimation of offshore extreme wind from wind-wave coupled modeling. | LARSÉN, X. G., DU, J., BOLAÑOS, R., et al. | Technical University of Denmark, Denmark |
| April 2019 | <i>Peer Reviewed Journal: Marine and Petroleum Geology.</i> | Active degassing across the Maltese Islands (Mediterranean Sea) and implications for its neotectonics. | MICALLEF, A., SPATOLA, D., CARACAUSI, A., et al. | University of Malta, MT |
| April 2019 | <i>Peer Reviewed Journal: Scientia Marina.</i> | Spatiotemporal abundance pattern of deep-water rose shrimp, <i>Parapenaeus longirostris</i> , and Norway lobster, <i>Nephrops norvegicus</i> , in European Mediterranean waters. | SBRANA, M., ZUPA, W., LIGAS, A., et al. | Centro Interuniversitario di Biologia Marina ed Ecologia Applicata "G. Bacci" (CIBM), Italy |
| April 2019 | <i>Peer Reviewed Journal: Heliyon.</i> | Endobiotic communities of Marine Sponges in Cyprus (Levantine Sea). | PAPATHEODOULOU, M., JIMENEZ, C., PETROU, A., et al. | University of Glasgow, |
| April 2019 | <i>Peer Reviewed Journal: Progress in Oceanography.</i> | Vertical distribution of Microbial Communities abundance and biomass in two NW Mediterranean Sea submarine canyons. | DIOCIJUTI, T., AUBRY, F. B., et UMANI, S. F. | OGS, Trieste, IT |
| April 2019 | <i>Peer Reviewed Journal: Geochemistry, Geophysics, Geosystems.</i> | Pockmarks in the Witch Ground Basin, central North Sea. | BÖTTNER, C., BERNDT, C., REINARDY, B., et al. | GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany |
| April 2019 | <i>Peer Reviewed Journal: Sensors</i> | Monitoring for Coastal Resilience: A Project for Five Italian Beaches. | MELITO, L., PARLAGREC O, L., | Istituto Superiore per |

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|-----------|--|---|---|--|
| | | | PERUGINI, E., et al. | la Protezione e la Ricerca Ambientale, Rome, Italy |
| May 2019 | <i>Peer Reviewed Journal: Seismological Research Letters.</i> | Seismicity and Noise Recorded by Passive Seismic Monitoring of Drilling Operations Offshore the Eastern Canary Islands. | UGALDE, A., GAITE, B., RUIZ, M., et al. | CSIC, Barcelona, SP |
| May 2019 | <i>Thesis (MSc)</i> | Hydrodynamics and sand transport on the lower shoreface of the Ameland tidal inlet. | Leummens, M. (2018) | University Twente, NL |
| May 2019 | <i>Peer Reviewed Journal: Frontiers in Marine Science.</i> | Seafloor Mapping—the challenge of a truly global ocean bathymetry. | WÖLFL, A., SNAITH, H., AMIREBRAHI MI, S., et al. | GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany |
| May 2019 | <i>Peer Reviewed Journal: Tectonophysics.</i> | Multi-temporal tectonic evolution of Capo Granitola and Sciacca foreland transcurrent faults (Sicily channel). | FERRANTI, L., PEPE, F., BARRECA, G., et al. | Università di Napoli, IT |
| May 2019 | <i>Conference Proceedings: MARID VI, 2019, p. 127.</i> | Evolution of offshore sand ridges in tideless continental shelves (Western Mediterranean) | Durán, R., Guillén J., Ribó, M., Puig, P., Muñoz, A. | CSIC, Barcelona |
| May 2019 | <i>Conference Proceedings: MARID VI, 2019, p. 127.</i> | Multi-scale analysis of sandbank features optimising geomorphological mapping of sandy shelf environments: Belgian part of the North Sea. | KINT, Lars. | Royal Belgian Institute of Natural Sciences, BE |
| May 2019 | <i>Peer Reviewed Journal: PlatForum.</i> | Marine Shell Ornaments in Atlantic Europe: Standardization of Form in the Gravettian. | ROGERS, Lisa. | |
| May 2019 | <i>Peer Reviewed Journal: Marine Geology.</i> | Morphological evidence for marine ice stream shutdown, central Barents Sea. | KURJANSKI, B., REA, B. R., SPAGNOLO, M., et al. | University of Aberdeen, UK |
| May 2019 | <i>Peer Reviewed Journal: Journal of Marine Science and Engineering.</i> | Weather-routing system based on METOC navigation risk assessment. | FABBRI, T. et VICENBUENO, R. | NATO STO, La Spezia, IT |
| May 2019 | <i>Peer Reviewed Journal: Natural Hazards and Earth System Sciences</i> | Tsunami run-up estimation based on a hybrid numerical flume and a parameterization of real topobathymetric profiles. 2018. | ANIEL-QUIROGA ZORRILLA, I., GUTIÉRREZ GUTIÉRREZ, O. Q., GONZÁLEZ RODRÍGUEZ, E. M., et al. | Universidad de Cantabria |
| June 2019 | <i>Peer Reviewed Journal: Pure and Applied Geophysics.</i> | Tsunami Potential of Moderate Earthquakes: The July 1, 2009 Earthquake (Mw 6.45) and its Associated Local Tsunami in the Hellenic Arc. | BOCCHINI, G. M., NOVIKOVA, T., | National Observatory Athens, GR |

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|-----------|--|---|--|--|
| | | | PAPADOPOULOS, G. A., et al. | |
| June 2019 | <i>Conference Proceedings: Proceedings of the 2018 International Conference on Computational Science and Computational Intelligence (CSCI'18).</i> | Multi-criteria weather routing optimization based on ship navigation resistance, risk and travel time. | Fabbri, T., Vicen Bueno, R., Hunter, A. | NATO CMRE, IT |
| June 2019 | <i>Peer Reviewed Journal: Tectonics, 2019.</i> | Spatial and temporal evolution of rifting and continental breakup in the Eastern Black Sea Basin revealed by long-offset seismic reflection data. | MONTELEONE, V., MINSHULL, T. A., et al. MARIN-MORENO, H. | National Oceanography Centre, |
| June 2019 | <i>MSc Report</i> | Estudio de áreas de implementación de sistemas undimotrices en la costa gallega. | RODRÍGUEZ ABAL, D. et al. | UNIVERSIDAD POLITÉCNICA DE CARTAGENA, SP |
| June 2019 | <i>Conference Proceedings: International Conference on Computational Science. Springer, Cham, 2019. p. 265-278.</i> | Implementation of a 3-Dimensional Hydrodynamic Model to a Fish Aquaculture Area in Sines, Portugal-A Down-Scaling Approach. | CORREIA, A., PINTO, L., et al. MATEUS, M. | Universidade de LisboaLisbon Portugal |
| June 2019 | <i>Peer Reviewed Journal: Geologia Croatica, 2019, vol. 72, no 2, p. 137-144.</i> | In search of the seismogenic fault of the March 23rd 2018 earthquake (Mw 3.7) near Brindisi (Puglia, Southern Italy). | FESTA, V., DE GIOSA, F., MORETTI, M., et al. | Università degli Studi di Bari "Aldo Moro", IT |
| June 2019 | <i>Peer Reviewed Journal: Heritage, 2019, vol. 2, no 2, p. 1588-1613.</i> | Sustainable Management of Underwater Cultural Heritage: The Route from Discovery to Engagement—Open Issues in the Mediterranean. | ARGYROPOULOS, V. STRATIGEA, A. | Ag. Spyridonos,, GR |
| June 2019 | <i>Peer Reviewed Journal: Paleoceanography and Paleoclimatology.</i> | Millennial-scale climate variability and dinoflagellate-cyst-based seasonality changes over the last~ 150 kyrs at 'Shackleton Site'U1385. | DATEMA, M., SANGIORGI, F., DE VERNAL, A., et al. | University Utrecht, NL |

6 Annex: Other documentation attached

Feedback received through the portal:

Subject: Re: SV: EMODnet Bathymetry Feedback form

Date: Tue, 9 Apr 2019 13:01:17 +0200

Dear ..,

My colleague has found the issue. See below his answer:

"I believe I found the cause of the shift. In fact it is not a shift of the data but it is a shift in the land mask. I noticed this before and has to do with how the GeoTiff standard works. Our data is defined row order first starting from the upper left corner. Geotiff is also in row order but starts at the lower left corner. In order to convert between the two formats one has to calculate the origin in the other format first. Because of the large number of cells in our tile this calculation is somewhat sensitive to round-off errors. I made a change in my software last year to better deal with the round-off issues but accidentally forgot to apply this change when masking the land out of the tiles. As a result, the land mask is shifted down one cell. The data itself is correct, we just took a bit of water away and added a bit of land on the opposite site. We will correct this in the next release. The fact that the RGB tiffs look ok, is because they are based on the OGC services and have been created slightly different compared to the data tiles."

As mentioned, there is no error or shift in the data. Only the masking could have been done better. The land mask is a raster (1/16 arc minute) interpretation of a very precise OSM coastline. My colleague had improved the way how he created the land mask but omitted the switch while generating the Product tiles from his work files that have water and land combined. While the RGB geotiff is done using the OGC services and there the mask was applied correctly. Hence the difference.

I hope this helps you to understand what happened and the difference you noticed.

As said we will correct this in the next EMODnet DTM release, which however is planned end next year. Possibly we will seek to correct it earlier.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 4/2/2019 14:48, ... wrote:
Dear Dick

How is the work going, any estimate when you can have a solution?

Kind regards

Från: Dick M.A. Schaap [\[mailto:dick@maris.nl\]](mailto:dick@maris.nl)
Skickat: den 22 mars 2019 10:03

Dear

Thank you for your interest in EMODnet Bathymetry. We will dive deeper in your issue to establish what is correct and what might have gone wrong. In the latter case we will correct the downloadable files.

In the meantime accept my apologies and wait for me to come back to you with a solution.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 3/19/2019 14:25, noreply@maris.nl wrote:

Name

Email

Hi I have downloaded a tile in two formats, netCDF and geoTIFF, to fiddle around and learn how to work with depth data from you. I have some problems with the downloaded netCDF-file. In QGIS I get an offset of one grid cell north to south if I compare to the downloaded geoTIFF (netCDF is one cell further to the south). When I compare with other data I have it seems that the geoTIFF is correct. For the netCDF I have to select a CRS when I open in QGIS and I choose EPSG:4326. Is this correct? Do you have any other idea why I get this offset? I did the same exercise in ArcGIS and got the same error but this time without any need to select a CRS. Can you help me to understand?

Subject:RE: EMODnet Bathymetry Feedback form

Date: Thu, 4 Apr 2019 12:07:18 +0000

Dear Dick,

Thank you very much for your answer. In the meantime I managed to find this document myself... Sorry for bothering you.

Best regards,

De : Dick M.A. Schaap [mailto:dick@maris.nl]
Envoyé : jeudi 4 avril 2019 08:53

Dear ...,

Thanks for your interest in EMODnet Bathymetry. The .emo format is the EMODnet format and a comma separated file containing the following fields: Longitude, Latitude, Depth Minimum for the grid cell, Depth Maximum, Depth Average, Depth Standard deviation, Number of interpolation values used, Number of used elementary Surfaces, Average smoothed depth value, Offset of smoothed depth with respect to the average depth, CDI Identification (reference of the most significant survey used for this grid cell), DTM Identification (reference for the most significant DTM used for this grid cell)

More details can be found in the following document:

http://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/euco-0901-002_dtm_exchange_format_specification_v1.6.pdf

Kind regards,
 Dick M.A. Schaap
 Technical Coordinator

On 4/3/2019 12:00, noreply@maris.nl wrote:

Name

Email

Dear colleague, I am sorry for this question if the answer is somewhere on the website, but I just couldn't find it. I recently downloaded DTM files in the .emo format on your website. I understand that it is a csv file, and I can see that the two first columns are for coordinates, but I'm not sure about the following ones... Could you tell me what are the data corresponding to each column in this format ? Thank you in advance, and again, sorry if the answer to this question is somewhere on your website... Best regards

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 9 Apr 2019 11:58:44 +0200

Dear ...,

Attached is an export of the HR-DTM catalogue. Please use it with care as I see it contains a number of records that require further editing.

Kind

regards

Dick

On 4/8/2019 17:14, Florence Toublanc wrote:

Dear Dick,

Thank you very much for your help !

I will wait to hear from you then.

Kind regards

De : Dick M.A. Schaap [<mailto:dick@maris.nl>]
Envoyé : lundi 8 avril 2019 17:13

Dear ...,

The SEXTANT as you can query is for composite DTMs which were used for making EMODnet DTM. There is a separate SEXTANT for HR DTMs but that is not open yet with user interface, only indirectly.

I will see if I can get an export of that subdirectory for use by you. In total there are circa 150 HR DTMs.

Will inform you.

Kind

regards

Dick

On 4/8/2019 17:06, wrote:

Dear Dick,

Thank you for the answer. I first tried through the 'feedback' function but did not get any answer. I'm sorry for being a bit impatient, it's just a time sensitive question...

The problem for me is that the HR DTM in the bathymetry viewer are not strictly the same as the ones in the Sextant Catalogue. Some are in the viewer and some are not, and vice versa... Or maybe I'm mistaken, but the names don't appear to be the same on both (viewer and catalogue), which is a bit confusing.

Finally, I tried with your method (retrieve depth and then metadata), but there are a few DTMs for which this "Retrieve depth" button is not responding, so I can't get the metadata.

Sorry to bother you with this issue, and thanks again for your help.

De : Dick M.A. Schaap [<mailto:dick@maris.nl>]
Envoyé : lundi 8 avril 2019 16:31

Dear ...,

The associated metadata for the HR DTM files are included in the dedicated Sextant Catalogue and NOT in the DTM files themselves.

This metadata can be retrieved in the bathymetry viewer for the high resolution layer. Please go to the HELP file of the viewer:

<http://portal.emodnet-bathymetry.eu/help/help.html#003>

Go to:

1.1.1 Bathymetry layers

and read about:

Retrieve Depth tool: till 'Product metadata'.

Unfortunately we have no option yet to query the metadata service stand alone for the HR DTMs. But this will be added in the coming half year.

Kind regards
Dick M.A. Schaap
Technical Coordinator

PS: Please write to us through the 'feedback' function.

On 4/8/2019 16:13, noreply@maris.nl wrote:

Name

Email

Feedback / Question Dear colleagues, I tried to ask this question through the "Bathymetry Viewing and Download service" but did not get any answer for now... Sorry if this is redundant then. I managed to download, through this service, a number of HR DTM, in the .emo format. However, I cannot find the metadata associated with each DTM, they don't seem to be downloaded along with the data... Could you help me with this issue ? Thank you in advance Best regards

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 25 Apr 2019 10:25:00 +0200

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

To:

Dear,

The tile has been replaced. Please download it and check that it works fine now.

Kind regards
Dick Schaap

On 4/17/2019 14:43, Dick M.A. Schaap wrote:

Dear,

It appears G7_MSL is indeed not correct. We are in the process of replacing it.

Sorry for this inconvenience.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 4/17/2019 11:06,

Name:

Emailaddress:

Feedback: I seem to be having an issue visualising tile G7 in QGIS and have tried to download it in various formats. All other tiles seem okay, can you check

this tile and ensure the data has not become corrupt please.

Subject: Re: Fwd: EMODnet Bathymetry Feedback form

Date: Thu, 25 Apr 2019 10:24:00 +0200

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

To:

Dear,

The tile has been replaced. Please download it and see it is ok now.

Kind
Dick

regards

On 4/17/2019 15:01, wrote:

Great, no problem!

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 17 April 2019 14:59
To:

Subject: Re: Fwd: EMODnet Bathymetry Feedback form

Dear,

It will take a few days because the technician in charge has a short Easter holiday.

I hope it will be ok mid next week.

Kind
Dick

regards

On 4/17/2019 14:52,wrote:

Dear Dick,

Thank you for the feedback, highly appreciate the replacement!

Kind regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 17 April 2019 14:49
To:

Subject: Re: Fwd: EMODnet Bathymetry Feedback form

Dear,

It appears G7_MSL is indeed not correct. We are in the process of replacing it.

Sorry for this inconvenience.

The MSL version is only available (yet) for the ESRI ASCII format as this is the most downloaded.

All other formats are at LAT.

Kind
Dick
Technical Coordinator

M.A.

regards
Schaap

Name:

Emailaddress:

Feedback: Dear Portal, Please find the following two notes 1) The G7 tile (MSL reduced ascii grid) can be downloaded but unfortunately cannot be unzipped (I tried this 2 times). The other tiles (I downloaded and unzipped 26 tiles) gave no errors. 2) When downloading the NETCDF files I cannot see what reference level is used (is this LAT or MSL?) in the attributes. Kind regards,

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 25 Apr 2019 10:44:39 +0200

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

To:

Dear,

I am sorry, but the wrecks layer is not available for download. It is provided to us via OceanWise. If you are interested, you might contact them: mike.osborne@oceanwise.eu

Kind
Dick
Technical Coordinator

M.A.

regards
Schaap

On 4/24/2019 17:11, noreply@maris.nl wrote:

Name:

Emailaddress: melandri.sabina@gmail.com

Feedback: How can I download the wrecks data? Thank you

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 25 Apr 2019 14:19:59 +0200

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

To:

Dear ...,

Yes, cellsize is the same for the rows and the columns. The file conforms to the Esri Ascii grid specifications. See

https://en.wikipedia.org/wiki/Esri_grid

or

http://resources.esri.com/help/9.3/arcgisengine/java/GP_ToolRef/spatial_analyst_tools/esri_ascii_raster_format.htm

Kind regards

Dick

On 4/25/2019 11:39, wrote:

Dear Dick

Thanks for your reply

Could you please help for documents of the ASCII data?

Q: is the longitude and latitude are evenly given by the CELLSIZE

Mvh/Regards

From: Dick M.A. Schaap [<mailto:dick@maris.nl>]
Sent: tuesday 25. april 2019 11:21
To:
Subject: Re: EMODnet Bathymetry Feedback form

Dear

The EMODnet Bathymetry viewing services have NO download option when viewing in 3D. Downloading should be done in 2D mode and that is normally functioning.

The 3D viewing is powered by Cesium, while its 3D terrain model has been generated with customised software. You can find more information about these at:

http://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/emodnet_bathymetry_quantized_mesh_generator_for_cesium_3d_viewing_report.pdf

and

https://github.com/coronis-computing/emodnet_qmgc

Kind

Dick

Technical Coordinator

M.A.

regards
Schaap

On 4/25/2019 8:12, noreply@maris.nl wrote:

Name:
Emailaddress: ...
Feedback: In 2D mode, data cannot be downloaded, and recommended to fix

Subject:Re: EMODnet Bathymetry Feedback form

Date: Mon, 29 Apr 2019 10:14:50 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear ...,

Thanks for spotting this inconsistency. We will correct it in the Help page soon.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 4/25/2019 17:17, noreply@maris.nl wrote:

Name

Email javirg@protonmail.com

Feedback Question / On EMODNET help page (<http://portal.emodnet-bathymetry.eu/help/help.html#007>), it says that the EMODnet CSV (EMO) files and the XYZ files are comma-separated, which is false. Both files are separated by semicolons.

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 9 May 2019 10:24:30 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear ...,

Thanks for your interest in EMODnet Bathymetry. I have checked our ordering system and there are 3 requests from your address:

"54b8445f-6807-40db-b844-5f680760dbdf";"2019-05-06 09:18:13.399718+02"
"aa1c97bf-4e55-403c-9c97-bf4e55a03c3c";"2019-05-09 09:44:41.536446+02"
"3976d107-e341-4a31-b6d1-07e341da3166";"2019-05-09 09:47:05.009502+02"

Our mail API indicates that the corresponding files have been delivered without errors to your mailserver:

"b8b18b39-c3f5-4c6e-b18b-39c3f5ec6e67";"54b8445f-6807-40db-b844-5f680760dbdf";"Send";"2019-05-06 09:18:13.634+02"
"c73577fa-5b9e-4de3-b577-fa5b9edde3ae";"54b8445f-6807-40db-b844-5f680760dbdf";"Delivery";"2019-05-06 09:18:14.861+02"

"657264c8-23fb-4f41-b264-c823fb8f41a6";"aa1c97bf-4e55-403c-9c97-bf4e55a03c3c";"Send";"2019-05-09 09:44:41.698+02"
"b62a8180-f853-4da1-aa81-80f8530da163";"aa1c97bf-4e55-403c-9c97-bf4e55a03c3c";"Delivery";"2019-05-09 09:44:43.057+02"
"d3bb1495-bc1a-4d6a-bb14-95bc1a8d6a46";"3976d107-e341-4a31-b6d1-07e341da3166";"Send";"2019-05-09 09:47:05.295+02"
"5dc15669-1c61-4519-8156-691c61c519cb";"3976d107-e341-4a31-b6d1-07e341da3166";"Delivery";"2019-05-09 09:47:07.338+02"

This implicates that all went ok at our side. Possibly your organisation mail server has some sort of filter that blocks you receiving the email? Please check by ordering data on a personal email address and see if that works. In that case it is your organisation mail server.

Keep me posted.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 5/9/2019 9:50, noreply@maris.nl wrote:

Name:
Emailaddress:
Feedback: The interface is nice, by I would like to download the bathymetry for my research project in the frame of Lifewatch, and it doesn't work. I've filled the form but I did not receive any email with the link to download (also not in my SPAM)

Subject:EMODnet Bathymetry Feedback form

Date: Fri, 10 May 2019 10:42:32 +0200

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

To:

Dear ...,

That's correct, the 4th byte in the RGB Tiffs is used as the transparency flag. This is in line with the Tiff standard. For the 32 bit data Tiffs the 4 bytes are implied as $32/8=4$

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 5/9/2019 23:19, noreply@maris.nl wrote:

Name:

Emailaddress: gmeos@grizgeo.com

Feedback: Your GeoTiffs have 4 bytes not 3.

Subject:EMODnet Bathymetry Feedback form

Date: Fri, 10 May 2019 10:45:48 +0200

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

To:

Dear ...,

This is a known problem: GMT (Generic Mapping Tool) is not supporting the NetCDF format that we are using. We are working on migrating to NetCDF Version 4 for this, but that will take some time. In the meantime please try one of the other formats like e.g. ESRI ASCII.

Kind
Dick
Technical Coordinator

M.A.

regards
Schaap

On 5/9/2019 23:18, noreply@maris.nl wrote:

Name: ...

Emailaddress:

Feedback: Could not read the CDF file with GMT: {515} grdconvert B1_2018.dtm -G B1_2018.gmt=bf grdconvert: Error: Unknown grid format. grdconvert (api_import_grid): Not a supported grid format [B1_2018.dtm] Error returned from GMT API: GMT_GRID_READ_ERROR (18)

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 21 May 2019 13:00:07 +0200

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

To: ...

Dear ...,

It is important to know from what service in EMODnet Bathymetry portal you downloaded data: from the CDI data discovery and access service OR the Bathymetry Viewing service for DTM tiles OR High Resolution Areas.

The first service deals with original survey data sets, while the latter two deal with data sets that have been processed into DTM files.

Kind
Dick
Technical coordinator

M.A.

regards
Schaap

On 5/20/2019 19:39, noreply@maris.nl wrote:

Name

Email

Feedback / When I select "NetCDF" as the format in which to receive data, I get a DTM. How can I
Question convert? Thanks

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 21 May 2019 13:36:40 +0200

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

To:

Dear ...,

Thanks for your interest in EMODnet Bathymetry. The current EMODnet DTM has a grid resolution of 1/16 * 1/16 arc minutes (circa 115 * 115 meters). For viewing we decided not to go beyond that resolution as otherwise the map information given will be very blurry. Only for the layer with High resolution DTMs we have higher resolution and you can zoom in deeper but these only cover selected areas.

I am sorry that I can not help you.

Kind

Dick

Technical coordinator

M.A.

regards

Schaap

On 5/16/2019 13:42, noreply@maris.nl wrote:

Name

Email

Feedback / Hello, I am interested in using your web service for bathymetric maps. We deploy our buoys that
Question are a few tens meters far from each other. It looks like the maximum zoom level achievable through the Portal Viewer (<http://portal.emodnet-bathymetry.eu>) is still too far from the ground. Is it possible to get rendered tiles at a lower height (higher zoom level) through your web services? Thank you in advance.

Subject:Fwd: EMODnet Bathymetry Feedback form

Date: Tue, 21 May 2019 13:40:42 +0200

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

To:

Dear ...,

I am sorry but we can not help you with the information that you are requesting.

Kind

EMODnet Bathymetry helpdesk

regards,

Subject:EMODnet Bathymetry Feedback form

Date: Tue, 14 May 2019 11:43:49 +0200

From: noreply@maris.nl

To: ...

Name

Email

Dear Bathymetry, I am a marine jurist and a fisheries manager, my profile can be viewed here
Feedback / <https://www.linkedin.com/in/menyoli-emmanuel-00754baa/>. I am writing to find out if you have
Question any on-going projects or available positions to work within developing countries. I will be glad if
you can provide me with information concerning all of these issues. Sincerely, ...

Subject:Re: EMODnet Bathymetry Feedback form

Date: Mon, 27 May 2019 09:15:10 +0200

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

To:

Dear,

Thanks for your interest. We are using WGS84. At our side we do not experience problems with the OGC
WMS services and this is confirmed by many external users. Therefore I am afraid that we can not help you.

Possibly you could ask support from ESRI as ARC user?

Kind

Dick

Technical coordinator

M.A.

regards

Schaap

On 21/05/2019 16:42, noreply@maris.nl wrote:

Name:

Emailaddress: mcewen-read@outlook.de

Feedback: Really great service, however i was wondering what coordinate system was
used in this WMS as I cant seem to geo-reference the tiles on ARC nicely
with WGS84?

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 6 Jun 2019 08:13:49 +0200

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

To:

Dear

Thanks for your interest in EMODnet Bathymetry. The current DTM has a resolution of 1/16 * 1/16 arc minutes (circa 115 * 115 meters) which is freely available for downloading in tiles. See information at:

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

The DTM is based upon > 9000 survey data sets which can be discovered and requested by means of the CDI data discovery and access service. See:

<http://www.emodnet-bathymetry.eu/metadata-and-data>

These original data sets have a higher resolution and requests are managed by their respective data providers through the CDI data discovery and access service, which might include some negotiation.

I hope this makes it more clear for you.

Kind
Dick
Technical coordinator

M.A.

regards
Schaap

On 05/06/2019 17:48, noreply@maris.nl wrote:

Name

Email

Feedback Question / Hi, Thanks for your webSite, it's very nice Could you please confirm that the best resolution for bathymetry is: one point for each 500 meter ? With a purchase, the resolution could be: each 10 meter, 1 meter ? Best regards,

Subject:EMODnet Bathymetry Feedback form

Date: Mon, 17 Jun 2019 15:02:03 +0200

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

To:

Dear,

Thanks for your interest in EMODnet Bathymetry.

The coordinate system is the same for all bathymetry layers, namely EPSG 4326 which is non projected Lat/Lon based on the WGS 84 datum.

Kind
Dick
Technical Coordinator

M.A.

regards
Schaap

On 6/11/2019 1:51 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback: What is the coordinate system of the high resolution bathymetry layer? I cannot find it in the webpage

Subject:Re: EMODnet Bathymetry Feedback form

Date: Wed, 19 Jun 2019 22:53:55 +0200

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

To:

Dear ...,

Thank you for your interest. The .emo file is the EMODnet Bathymetry ASCII format for sharing the DTM. It is a comma separated file containing the following fields: Longitude, Latitude, Depth Minimum for the grid cell, Depth Maximum, Depth Average, Depth Standard deviation, Number of interpolation values used, Number of used elementary Surfaces, Average smoothed depth value, Offset of smoothed depth with respect to the average depth, CDI Identification (reference of the most significant survey used for this grid cell), DTM Identification (reference for the most significant DTM used for this grid cell).

More information on the .emo files can be found in the documentation at:

http://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/euco-0901-002_dtm_exchange_format_specification_v1.6.pdf

Note that the DTM tiles are also available in some other formats like e.g. the ESRI ASCII format.

Kind
Dick
Technical Coordinator

M.A.

regards
Schaap

On 6/19/2019 9:30 PM, noreply@maris.nl wrote:

Name

Email

Feedback / I have downloaded bathymetry from your site, but am not familiar with the extension of the
Question data (*.emo). What, exactly, is an .emo file? Thank you for your help.

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 20 Jun 2019 11:37:45 +0200

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

To:

Dear ...,

Thank you for your interest. The .emo file is the EMODnet Bathymetry ASCII format for sharing the DTM. It is a comma separated file containing the following fields: Longitude, Latitude, Depth Minimum for the grid

cell, Depth Maximum, Depth Average, Depth Standard deviation, Number of interpolation values used, Number of used elementary Surfaces, Average smoothed depth value, Offset of smoothed depth with respect to the average depth, CDI Identification (reference of the most significant survey used for this grid cell), DTM Identification (reference for the most significant DTM used for this grid cell).

More information on the .emo files can be found in the documentation at:

http://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/euco-0901-002_dtm_exchange_format_specification_v1.6.pdf

Note that the DTM tiles are also available in some other formats like e.g. the ESRI ASCII format.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 6/20/2019 11:33 AM, noreply@maris.nl wrote:

Name ...

Email

Feedback Question / Dear EmodNet, First of all, Thank you for the wonderful opportunity to get data. Could you point me to the EMO format (files with bathymetry) description? Thank you in advance, Cheers, Ivan

Subject:Re: EMODnet Bathymetry Feedback form

Date: Fri, 21 Jun 2019 07:29:17 +0200

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

To:

Dear,

Thanks for your interest in EMODnet Bathymetry. The new DTM (V2018) can also be downloaded in tiles with MSL. This is only possible for ESRI ASCII format. Hope this serves your needs.

For downloading go to the Bathymetry Viewer at:
<http://portal.emodnet-bathymetry.eu/>

In the HELP it is explained how to download tiles in different formats.
<http://portal.emodnet-bathymetry.eu/help/help.html>

Please keep us informed of your results with your model using EMODnet DTM.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 6/20/2019 3:14 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

Hello I would like to use the EMODnet product to generate a bathymetry for my model (IBI MFC, CMEMS). However the model needs a bathymetry referenced to the MSL and not the LAT. Do you provide the LAT you used in EMODnet, or can you provide me with some information about your LAT? Thank you in advance Regards

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 27 Jun 2019 12:09:48 +0200

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

To:

Dear,

Thanks for your interest in EMODnet Bathymetry.

The DTM data is relative to LAT so the sea coverage also contains “drying heights” (i.e. intertidal areas). This gives the positive values.

Kind

Dick

Technical Coordinator

M.A.

regards

Schaap

On 6/27/2019 8:27 AM, noreply@maris.nl wrote:

Name

Email

Feedback / I noticed that bathymetry tiles served through the portal contains some positive values in
Question the depth field. Why is that?