EMODnet Thematic Lot n° 1- Bathymetry

6th Bi-monthly Report

Reporting Period: 01/11/2014 – 31/12/2014

Date: 20/01/2015

Contents

1. Highlights in this reporting period

Provide a short summary of the key achievements and/or events of interest to a wider audience within this reporting period you wish to highlight – this can be based on the indicators or any other of the reporting sections.

- Very good progress has been made with the overall compilation and integration of the new EMODnet DTM. A lot of efforts have been dedicated to identifying and solving anomalies caused by large differences when merging data from different surveys and GEBCO. The launch of the new DTM is again somewhat delayed and is now planned for end January 2015, after the 3rd EMODnet Bathymetry Projectgroup meeting. An important reason for delay is the sheer volume of data that has increased to 1.092.115.678 data points (28.799 rows x 37.922 columns) which requires a lot of human and computertime for validating the DTM cells and rendering the different GIS layers. Note: the worldwide GEBCO contains 933.120.000 data points (21.600 rows x 43.200 columns).

- Also very good progress is being made with upgrading the Bathymetry Viewing and Downloading service. The DTM database has been successfully migrated from Oracle to PostgreSQL 9.3 RDBMS and for the GIS use is made of the latest version of GeoServer in combination with OpenLayers for developing the user interface. The use of these Open Source tools gives more options. Following the user evaluation report as made by the EMODnet secretariate several improvement are underway for making the service even more easy for use and giving more functions.

- The Bathymetry Viewing and Downloading service has been extended with several new layers, such as a seamless land-sea integration of Open Street Map WMS and inclusion of land topography WMS with comparable resolution as the new DTM (1/8 * 1/8 arc minutes). This will give the user a much better experience when viewing the new DTM.

- Coordinator has participated in the EastMed Symposium in Limassol – Cyprus with attendance of countries from the Eastern Mediterranean and has presented the EMODnet Bathymetry project. This has resulted in potential new data providers from Malta, Israel and Egypt. Further deliberations are now ongoing.

2.   Meetings held since last report

List here the meetings held since the last bi-monthly report, if relevant add short description

[Provide information in table - Maximum 1 page]

Date	Location	Topic	Short Description
3 November 2014	Voorburg, The Netherlands	Technical tuning	Meeting between MARIS and GGSGC about the progress of new release and upgrading of portal

3. Work package updates

Using the work package as a header list here the activities that occurred since the last bi-monthly report. If there was no activity to report leave the section blank.

[Provide information - Maximum 1/2 page per workpackage]

WP0 – Project Management:

The project coordinator has monitored, evaluated and controlled the overall progress of the project and its activities towards its objectives. Regular emails have been drafted and circulated to partners to remind them of actions and planning as well as to get information on progress and possible issues, that required solving. In particular focus has been on progress with the compilation and integration of the new EMODnet DTM and upgrading of the EMODnet Bathymetry Viewing and Download service. Bi-monthly progress report for September – October 2014 has been prepared.

WP1 – Data collection and metadata preparation for all marine basins:

Further progress has been made with expanding the data collections in the CDI and SEXTANT catalogue services. The operational CDI service for EMODnet Bathymetry now contains 11313 entries from 24 data centres from 14 countries. In addition, there are a further 1950 CDI entries waiting in the import service that will be moved soon to the CDI production service. This brings the total numberc of CDI entries to **13263** CDI entries. The number of composite DTMs in the Sextant directory has stabilised at **44** Sextant entries. MARIS and IFREMER have provided support to guide partners where needed and to handle new submissions.

WP2 – QC/QA and producing Digital Terrain Models for the basins:

Regional coordinators have re-produced a compiled bathymetric product for each of the regional basin areas from all the data sets contributed by the data providers, using the GLOBE software. This repeating of process was necessary because of serious anomalies in the earlier production, partly due to incorrect algorithms for statistics in the previous GLOBE software. Thereafter all regional coordinators have transfered their regional DTMs to GGSgc for overall integration into the new EMODnet DTM. GGSgc has made great progress with the overall QA/QC and integration. Several steps have been undertaken by GGSgc to take out or to smooth abrupt discontinuities, in particular in areas with considerable water depth differences between survey data and GEBCO.

WP3 – Integration and inclusion of the DTMs in the portal:

GGSgc has made also great progress with rendering the new resulting DTM to GIS layers for inclusion in the EMODnet Bathymetry Viewing and Download service. Considering the volume of data, the rendering has taken several weeks of computer time. The DTM GIS layers have been redefined and a number of extra layers has been added, such as Open Street Map WMS for land geography, a detailed topography

WMS for land DEM, and inclusion of GEBCO Undersea Features WMS. Special attention has been given in the viewing to a seamless transition between land and sea, using the highly detailed OSM as coastline. The detailed topography WMS is used underneath the OSM geography to give the terrain and a smooth transition from land to sea. These actions largely improve the attraction for users and remove abrupt discontinuities in the coastal zones. It is a pure visual effect because the DTM not yet has coverage in the coastal zone.
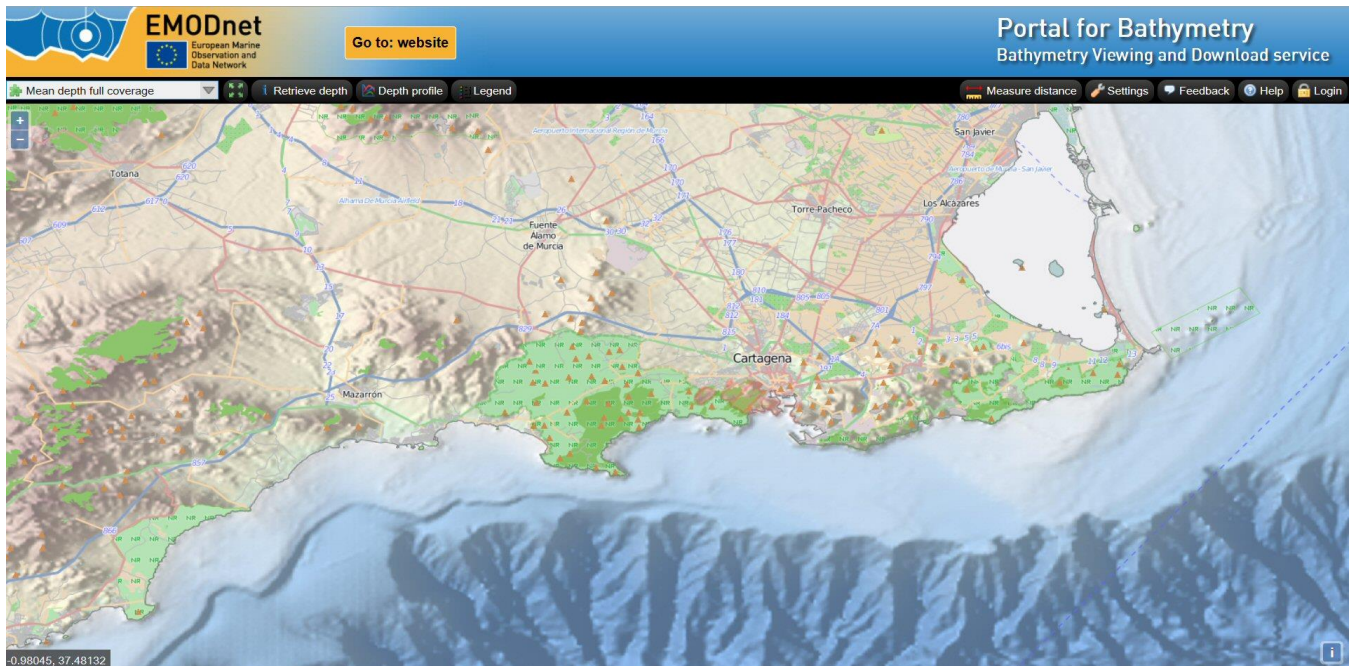
Illustration land – sea transition and topography - geography

WP4 – Technical development and operation of portal:

MARIS and GGSgc have held a progress meeting to discuss the Bathymetry Viewing and Download service, considering upgrading of a number of functions as agreed in the proposal and in response to the suggestions and findings of the portal review report as received from the EMODNet Secretariate. GGSgc has made good progress with migrating the service to a new open source platform, improving the transect function, improving the sources layer by having polygons for every CDI and Composite DTM giving extra options for metadata query and calculating surface coverage, and working on adapting the Personal Layer logon to adopt the overall SeaDataNet AAA service. All layers will be provided with Alt text help and further activities are underway for improving the interfacing and support. The new service will be launched together with the new EMODnet DTM, once released by the Projectgroup. There will be a meeting of the Projectgroup 21-22 Januari 2015 where the remaining actions for release will be discussed.

WP5 – Analysis and evaluation:

Nothing to report.

4. Specific challenges or difficulties encountered during the reporting period

Please list specific problems you have encountered during this period, including related to technical and data provision issues

A real challenge is the validation and handling of the large volume of data points for the new EMODnet DTM. The resolution is 1/8 * 1/8 arc minutes and that means 4 times as high as the present EMODnet DTM. Together with a large area expansion for including all European seas the total volume is now 1.092.115.678 data points (28.799 rows x 37.922 columns) which requires a lot of human and computertime for validating the DTM cells and rendering the different GIS layers. Note: the worldwide GEBCO contains 933.120.000 data points (21.600 rows x 43.200 columns).

Another challenge is the merging of data from different origins, such as from surveys and GEBCO, where no surveys are available. Differences in water depths have more impact due to the higher resolution. In particular individual soundings from single beams in deeper water appear as needles of a few pixels, while in the earlier resolution these effects would have been filtered by averaging. This implicates that a post-processing is needed before the new DTMs can be made available for downloading. This effect is only visible in 3D viewing.
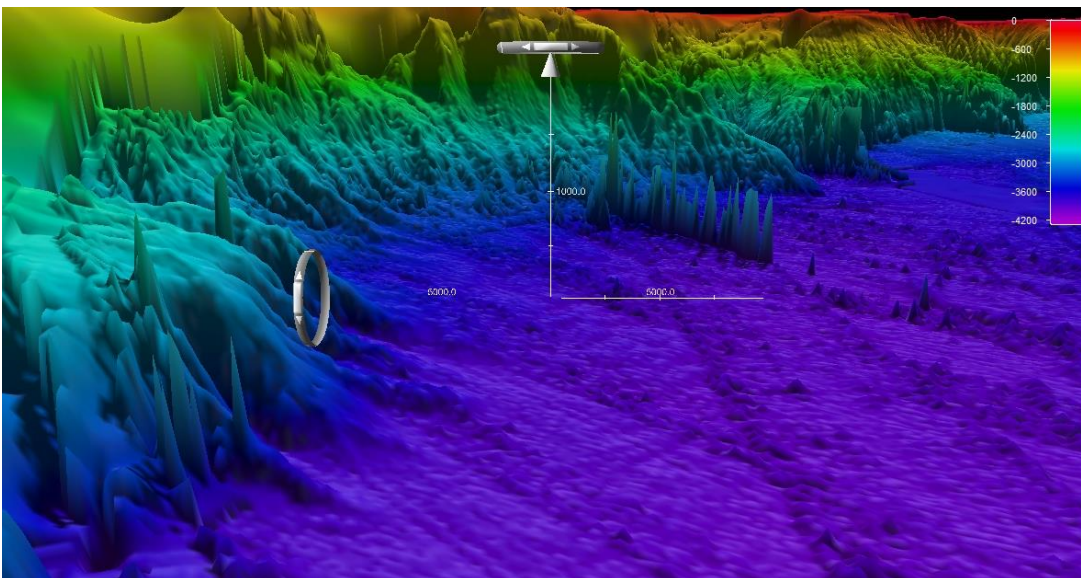
Image: illustration of 'needles' effect due to single beam data

5. User Feedback

List any useful feedback you received on your portal, your activities or those of other EMODnet projects/activities. Also provide any suggestions you have received for EMODnet case studies and/or future products/activities/events.

[Provide information in table - attach the documentation/full user feedback to the report]

Date	Name	Organization	Type of user feedback (*e.g. technical, case study etc*)	Response time to address user request
25-11-2014	Sven Blumenstein	RWE	Question about color ramp file	Answer at 28-11-2014
21-11-2014	John Siddorn	UK MetOffice	Discussion on DTM requirements for modellers	Several answers in period 28-11-2014
7-12-2014	Dave Holroyde	Caydale Consulting	Logon issues	Answer at 7-12-2014

Annex 1 gives more details.

6. Outreach and communication activities

Please list all the relevant communications activities or products you have developed/executed during this period (including presentations, lectures, trainings, demonstrations and development of communication materials such as brochures, videos, etc.). Relevant scientific and/or popular articles you know have been published using/referring to EMODnet should be reported under indicator 11 in Section 7.

[Provide information in table - Maximum 1 page]

Date	Media	Title	Short description and/or link to the activity
17 – 20 November 2014	Conference	East Med Symposium	Presenting EMODnet Bathymetry for representatives of Eastern Mediterranean countries and deliberations with possible new data providers

7. Updates on Progress Indicators

Using the indicator as a header list the metrics collated and the time interval. If there was no activity to report leave the section under the indicator header blank.

Indicator 1 - Volume of data made available through the portal

The total number of CDIs for bathymetric survey data sets has increased from: **10774 to 11313**

Moreover in the import system there are new entries underway: **1950**

The total in production covers the whole globe. Specifically relevant for European waters has increased from: **7860 to 8194**

Lat Long box**: N80, W-30 ; N20, E45**

Of these **367** are unrestricted, while all other require negotiation.
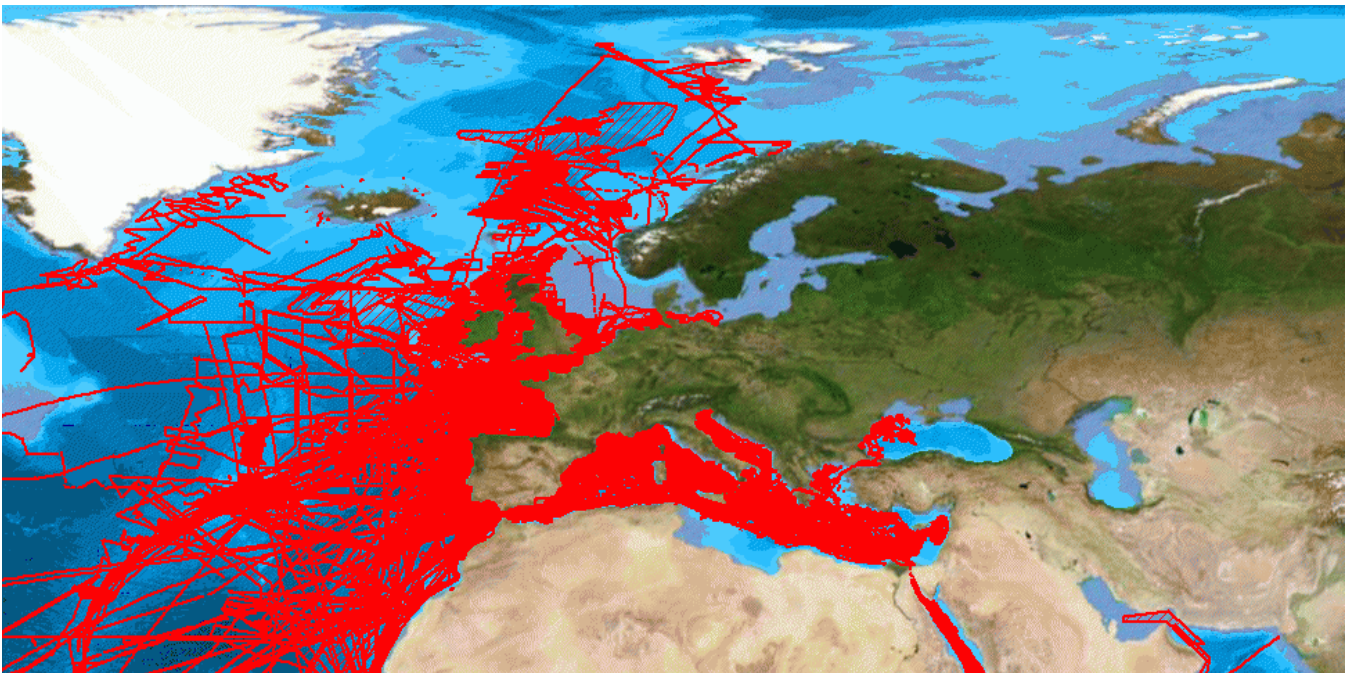
Regional DTMs are available at present for the following sea regions:

- the Greater North Sea, including the Kattegat and stretches of water such as Fair Isle, Cromarty, Forth, Forties,Dover, Wight, and Portland
- the English Channel and Celtic Seas

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

Indicator 2 - Organisations supplying each type of data based on (formal) sharing agreements and broken down into country and organisation type (e.g. government, industry, science).

Data Centre	Country	No of CDIs	No restrictions	Restrictions
British Oceanographic Data Centre	United Kingdom	86	53	33
German Oceanographic Datacentre (NODC)	Germany	15	15	0
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Division of Oceanography	Italy	10	0	10
Institute of Marine Science (ISMAR) - Bologna	Italy	65	0	65
Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre (HCMR/HNODC)	Greece	76	0	76
IEO/Spanish Oceanographic Institute	Spain	66	0	66
Geological Survey of Ireland	Ireland	136	136	0
IFREMER / IDM/SISMER	France	714	70	644
SHOM (SERVICE HYDROGRAPHIQUE ET OCEANOGRAPHIQUE DE LA MARINE)	France	4464	0	4464
IHPT, Hydrographic Institute	Portugal	274	0	274
NIOZ Royal Netherlands Institute for Sea Research	Netherlands	30	0	30
Bulgarian National Oceanographic Data Centre(BGODC), Institute of Oceanology	Bulgaria	16	0	16
National Institute of Marine Geology and Geoecology	Romania	2	0	2
Hydrographic Institute of the Navy	Spain	58	0	58
Management Unit of North Sea and Scheldt Estuary Mathematical Models, Belgian Marine Data Centre	Belgium	93	93	0
National Laboratory of Energy and Geology	Portugal	3	0	3

Institute of Marine Sciences. Mediterranean Marine and Environmental Research Centre (CMIMA-ICM-CSIC). Department of Marine Geology	Spain	4	0	4
Flemish Ministry of Mobility and Public Works; Agency for Maritime and Coastal Services; Coastal Division	Belgium	78	0	78
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Infrastructures Division	Italy	23	0	23
Marine Technology Unit. Mediterranean Marine and Environmental Research Centre	Spain	6	0	6
UNEP/GRID-Arendal	Norway	8	0	8
OceanWise Limited	United Kingdom	1961	0	1961
Portuguese Institute of Ocean and Atmosphere	Portugal	4	0	4
Jardfeingi, the Faroe Islands Earth and Energy Directorate	Faroe Islands	5	0	5
		8194	367	7827

These centres are government and research institutes. No industry (yet).

Indicator 3 - Organisations that have been approached to supply with no result, including type of data sought and reason why it has not been supplied.

The Danish Geodata Agency was a subcontractor in the EMODnet Bathymetry bid, but so far DGA has not signed the subcontract. Therefore there is no permission (yet) to use the composite DTM data sets for the Danish waters as earlier used for the present EMODnet DTM. Negotiations are ongoing to change DGA's standpoint.

Indicator 4 - Volume of each type of data and of each data product downloaded from the portal

Time period 1 November 2014 – 31 December 2014:

CDIs:

No of CDI basket transactions: **14**

No of CDIs requested: **155**
Different users: **11**
Different data centres: **11**

Data products – DTMs:

Tile	Downloads
Aegean-Levantine Sea	620
Greater North Sea	585
Adriatic-Ionion Sea - C.Meditarrenean	585
Celtic Seas	562
Bay of Biscay - Iberian Coast	556
West Mediterranean	545
Madeira	481
Azores	480
	4414

Format	Downloads
ESRI	
ASCII	1299
XYZ	848
GeoTiff	1098
NetCDF	352
CSV	559
SD	258
	4414

Indicator 5 - Organisations that have downloaded each data type

national oceanography centre	United Kingdom
AIR-Worldwide	United States
NGDC	United States
SHOM	France
Geological Survey of Ireland	Ireland
INTECSEA	United States
Tragsatec	Spain
Student	France
Cranfield University	United Kingdom

University of Vigo
Nova Innovation Ltd

Spain
United Kingdom

Indicator 6 - Using user statistics to determine the main pages utilised and to identify preferred user navigations routes

Time period 1 September 2014 – 31 October 2014:

Bathymetry main portal:

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Nov 2014	1,343	2,435	19,135	62,204	2.50 GB
Dec 2014	1,159	1,950	20,262	62,927	2.32 GB

Visitors in November 2014:

Hosts (Top 10) – Full list – Last visit – Unresolved IP Address				
Hosts : 797 Known, 387 Unknown (unresolved ip) 932 Unique visitors	Pages	Hits	Bandwidth	Last visit
84.41.108.220	2,579	2,583	30.86 MB	31 Jan 2014 - 15:24
shadow.ca.ieo.es	930	2,093	74.93 MB	30 Jan 2014 - 12:18
85.155.59.184.dyn.user.ono.com	689	1,040	7.41 MB	27 Jan 2014 - 23:42
brc29-2-88-162-38-86.fbx.proxad.net	662	1,057	146.06 MB	31 Jan 2014 - 19:42
unknown.shom.fr	426	1,101	72.02 MB	30 Jan 2014 - 14:49
ip-193-33-2-113.mde.es	364	562	47.85 MB	31 Jan 2014 - 12:48
193.146.131.132	296	513	5.19 MB	27 Jan 2014 - 14:03
gw.sb-roscoff.fr	294	430	8.13 MB	14 Jan 2014 - 13:11
pcpros.ogs.trieste.it	261	491	7.03 MB	20 Jan 2014 - 13:47
ppp005054065227.access.hol.gr	228	325	2.62 MB	14 Jan 2014 - 11:25
Others	11,098	42,273	3.56 GB	

Bathymetry DTM viewer service:

Month	Unique visitors	Pages	Hits	Bandwidth
Nov-14	1.884	2,614	4,714	77,69 GB
Dec-14	1.663	2,274	4,447	52.71 GB

	Hosts				

Top Hosts

	Host	Country	Hits	Visitors	Bandwidth (KB)
1	ptr.cnsat.com.cn	China	767	742	1,932,100
2	119.63.193.194	Japan	137	135	1,112,133
3	119.63.193.132	Japan	138	134	156,546
4	119.63.193.196	Japan	123	122	806,646
5	119.63.193.130	Japan	124	119	485,377
6	119.63.193.131	Japan	123	118	265,947
7	119.63.193.195	Japan	115	111	1,593,906
8	cro29-1-78-198-96-188.fbx.proxad.net	France	83	67	66,084
9	199.19.249.196	United States	65	52	464,366
10	ns504861.ip-192-99-149.net	United States	153	51	57,989
11	user.vliz.be	Belgium	84	43	1,315,609
12	85-18-36-49.ip.fastwebnet.it	Italy	69	28	3,143,386
13	smtp-out.navionics.com	Italy	43	24	265,927
14	192-171-5-126.esrin.esa.int	United States	38	24	784,788
15	212.189.167.221	Italy	37	24	194,837
16	a79-169-36-145.cpe.netcabo.pt	Portugal	49	23	81,682
17	93-61-73-117.ip145.fastwebnet.it	Italy	41	23	1,044,918
18	192.Red-80-36-114.staticIP.rima-tde.net	Spain	46	22	401,240
19	nat-windows.cerege.fr	France	23	19	316,917
20	a83-163-127-252.adsl.xs4all.nl	Netherlands	50	18	550
21	unknown.shom.fr	France	27	15	619,848
22	IP-193-33-2-113.mde.es	Spain	23	14	137,470
23	193.146.155.145	Spain	15	14	49,154
24	sslvpn.swiber.com	Singapore	25	14	1,226,174
25	proxy.ec.europa.eu	Luxembourg	14	13	154
26	174.123.27.77.dynamic.mundo-r.com	Spain	24	12	348,988
27	195.77.88.18	Spain	14	12	115,427
28	ip-89-234-68-100.broadband.digiweb.ie	Ireland	14	12	154
29	213.122.160.66	United Kingdom	18	12	370,701
30	msnbot-131-253-38-67.search.msn.com	Canada	11	11	121
31	5468B32F.cm-12-1c.dynamic.ziggo.nl	Netherlands	12	11	132
32	ip51cc1e7d.speed.planet.nl	Netherlands	45	10	401,131
33	natclients.dwd.de	Germany	10	10	110
34	223.74.218.87.dynamic.jazztel.es	Spain	13	10	143
35	IP-193-33-2-114.mde.es	Spain	13	9	143
36	a82-95-67-170.adsl.xs4all.nl	Netherlands	16	9	176
37	host-62-24-181-135.as13285.net	United Kingdom	13	9	190,822
38	IP-193-33-2-112.mde.es	Spain	16	9	176
39	dhcp-089-098-190-239.chello.nl	Netherlands	32	9	1,119,686
40	46.34.88.155	Unknown	21	8	423,023
41	158.85.89.6	United States	15	8	165
42	ip203-159-212-87.adsl2.static.versatel.nl	Netherlands	10	8	305,442
43	msnbot-65-54-247-156.search.msn.com	United States	8	8	88
44	151.96.254.4	Italy	15	8	236,558

Indicator 7 - List of what the downloaded data has been used for (divided into categories e.g. Government planning, pollution assessment and (commercial) environmental assessment, etc.)

Nothing to report.

Indicator 8 - List of organisations that have downloaded data from more than one portal in a given space of time e.g. 2 weeks (assumed to be for a single project).

Nothing to report.

Indicator 9 - Interoperability of data of different types and from different portals

Nothing to report.

Annex 1:

Details of users feedback and follow-up
From: Blumenstein, Sven [mailto:Sven.Blumenstein@rwe.com]
Sent: dinsdag 25 november 2014 16:09
To: info@EMODnet.eu
Subject: Request for EMODnet bathymetry layer file
Hi, I've found your fantastic bathymetry dataset and downloaded the complete tile collection. Great work!
We are working on the ArcGIS platform, hence my request for symbolizing the dataset: Could you provide a layer file (.lyr) containing the stretched color ramp symbology as used in your web portal?

Thanks in advance and best regards,
Sven

Freundliche Grüße / Best regards / Med vennlig Hilsen / Met vriendelijke groeten / وتفضلوا بقبول فائق الاحترام
Sven Blumenstein, Dipl.-Geol.
GIS Specialist
RWE Dea AG
Geo Support Center
Geo Data & Applications / Geo Projects
Ueberseering 40, 22297 Hamburg, Germany
T +49 40 6375-2214
F +49 40 6375-3108
E mailto:sven.blumenstein@rwe.com
I www.rwedea.com
Reply:

-------- Original Message --------
Subject: Re: FW: Request for EMODnet bathymetry layer file
   Date: Fri, 28 Nov 2014 00:05:44 +0100
   From: Dick M.A. Schaap <dick@maris.nl>
      To: Sven.Blumenstein@rwe.com
      CC: Francisco Souza Dias <francisco.souzadias@vliz.be>, Simon Claus <simon.claus@vliz.be>

Dear Sven,

Good to hear you like it. Unfortunately we have no Esri .lyr file with this colour model. ArcGIS has an option to design your own color ramp but that option is not really suited for bathymetry because our scale is non-lineair for depth.

Attached is an ASCII file with the colour values and related depths. The values are interpolated in a lineair way between the depths. Possibly you can use this to prepare your own color ramp using Esri tools?

Kind regards
Dick M.A. Schaap
EMODnet Bathymetry coordinator

PS: we are working on a new release with higher resolution where possible and covering all European seas.

==

-------- Original Message --------
Subject:EMODNET Bathymetry
   Date: Fri, 21 Nov 2014 16:03:59 +0000
   From: Siddorn, John <john.siddorn@metoffice.gov.uk>
      To:'dick@maris.nl' <dick@maris.nl>
      CC:'Wehde Henning' <Henning.Wehde@imr.no>, Jan-Bart Calewaert
          <janbart.calewaert@emodnet.eu>

Dear Dr Schaap,

A recent meeting with Jan-Bart at the EuroGOOS meeting reminded me that I haven't heard any recent news on the EMODNET bathymetry. You may remember I contacted you a couple of years ago requesting more details on the plans for the EMODNET bathymetry as it presently does not meet our needs. According to Lesley Rickard who I spoke with at the time there were plans to improve upon the bathymetry, and that common referencing of the different input data sources was imminent. This still does not appear to have happened.

I would really appreciate hearing more about how the EMODNET project plans to improve upon the bathymetry data being provided.

Many thanks
John

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John Siddorn Head Ocean Forecasting R&D
Met Office FitzRoy Road Exeter Devon EX1 3PB United Kingdom
Tel: +44 (0)1392 886824
Mobile: +44(0)7880 475924
Email: john.siddorn@metoffice.gov.uk Website: www.metoffice.gov.uk
OFR&D are part of the National Centre for Ocean Forecasting and the MyOcean Marine Service
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From: Siddorn, John
Sent: 03 December 2012 16:19
To: dick@maris.nl
Cc: 'Wehde Henning'; O'Dea, Enda; Rickards, Lesley
Subject:

Dear Dr Schaap,

I am writing to you concerning the EMODNET project and specifically the bathymetry datasets in it. I am manager of the ocean modelling group at the Met Office and a steering committee member of NOOS (www.noos.cc), a collaboration of marine service providers and researchers for the North-West European continental shelf. NOOS members, not least the Met Office, have a dependence upon the quality of the bathymetries available to us for providing good quality surge and other marine forecasts or assessments. In the past we have expended considerable effort to collate available bathymetries. This is a major task as you will of course appreciate, and one we cannot do on a frequent basis.

We started looking at this problem again a few years ago and where pleased to see that the EMODNET project would be collating bathymetries. So far however we have found it difficult to make much use of the data available via EMODNET for two reasons. Firstly the data is not combined into one unique product, which makes it difficult to apply as source input for our models. Secondly the reference levels for each of the datasets is not consistent so doing a merging of the datasets is not straightforward.

For this reason I spoke with Lesley about the future plans for EMODNET, and was extremely pleased to learn that you have an extension to the project and that there are plans to generate a product that combines all the available datasets (and as I understand it merged with GEBCO where there are no other data available).

I would like to emphasise the importance this work has in making the EMODNET data useful for modellers such as myself. Is there a known timescale for release of a merged dataset and do you have plans for early release to beta users for comment and testing? I would be happy for I or a colleague to be engaged in some way as a user if that is appropriate.

Yours
John Siddorn

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John Siddorn, Manager Ocean Modelling Group
Met Office Hadley Centre FitzRoy Road Exeter Devon EX1 3PB United Kingdom
Tel: +44 (0)1392 886824
Email: john.siddorn@metoffice.gov.uk Website: www.metoffice.gov.uk
See our guide to climate change at http://www.metoffice.gov.uk/climate-change/guide/
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Reply

-------- Original Message --------
Subject: Re: EMODNET Bathymetry
  Date: Fri, 28 Nov 2014 00:27:18 +0100
 From: Dick M.A. Schaap <dick@maris.nl>
    To: Siddorn, John <john.siddorn@metoffice.gov.uk>
    CC:'Wehde Henning' <Henning.Wehde@imr.no>, Jan-Bart Calewaert
      <janbart.calewaert@emodnet.eu>

Dear John,

We are finalising a new release of the EMODnet DTM which will have a resolution of 1/8 * 1/8 arc minute and for all European seas. This will be released in a few weeks from now. The DTM will be based as much as possible on survey data sets, but unfortunately for almost 30 - 40 % of the sea areas we have no surveys yet. In those cases we will use the new GEBCO_2014 DTM which has a lesser resolution of 1/2 * 1/2 arc minute.

However in practice GEBCO introduces steps between survey based DTM and GEBCO based DTM cells, because GEBCO uses satellite altimetry for non surveyed areas and this can give serious differences in precision. Sometimes this gives large tresholds / vertical steps between the more detailed data and the GEBCO which we can not smooth away. Also we do not want to smooth it too much because then it looks like all is perfect and known, while we also want to underpin gaps in data and that these should be filled by new surveys.

Also near and in the coastal zone we are not very good yet because we are not yet dealing with this. In the next round there will be pilots for coastal zones from deeper water to inland combining multibeams and LIDAR data. Those pilots should be followed up by more extensive focus on the European coastlines.

BTW: the EMODnet DTM is using LAT as a common reference.

I can understand that you would prefer a complete smoothed version for use in mathematical models. We have a project meeting in January 2015 and I will discuss whether we can also make such a side product to serve modellers.

Kind regards
Dick M.A. Schaap
EMODnet Bathymetry coordinator

Question:
From: Blumenstein, Sven [mailto:Sven.Blumenstein@rwe.com]
On 11/28/2014 9:17, Blumenstein, Sven wrote:
Dear Dick,
thanks a lot – I'll try to build something. In ArcGIS you can play around with histogram curves on stretched color ramps, and I guess I'll only be able to build a similar but not equal look of the map. However, great work.
Looking forward to the forthcoming new release…
By the way, are you also maintaining and providing cleaned contour lines of the model? When I create them from the original grid, I get a lot of artefacts due to tile breaks or linear sounding points.
Thanks again and best regards,
Sven
REPLY:

-------- Original Message --------
Subject: Re: AW: Request for EMODnet bathymetry layer file
 Date: Fri, 28 Nov 2014 09:34:48 +0100
 From: Dick M.A. Schaap <dick@maris.nl>
  To: Blumenstein, Sven <Sven.Blumenstein@rwe.com>
  CC: Francisco Souza Dias <francisco.souzadias@vliz.be>, Simon Claus <simon.claus@vliz.be>,
   George Spoelstra <g.spoelstra@casema.nl>

Dear Sven,

Concerning breaking isolines:

The EMODnet DTM is based as much as possible on survey data sets, but unfortunately for almost 30 - 40 % of the sea areas we have no surveys yet. In those cases we use the GEBCO DTM which has a lesser resolution of 1/2 * 1/2 arc minute. However in practice GEBCO introduces steps between survey based DTM and GEBCO based DTM cells, because GEBCO uses satellite altimetry for non surveyed areas and this can give serious differences in precision.
Sometimes this gives large tresholds / vertical steps between the more detailed data and the GEBCO which we can not smooth away. Also we do not want to smooth it too much because then it looks like all is perfect and known, while we also want to underpin gaps in data and that these should be filled by new surveys.

Also near and in the coastal zone we are not very good yet because we are not yet dealing with this. In the next round there will be pilots for coastal zones from deeper water to inland combining multibeams and LIDAR data. Those pilots should be followed up by more extensive focus on the European coastlines.

So it is not a perfect smooth product and that is why you will have difficulty with your isolines encountering those steep differences.

I can also understand that you might prefer a complete smoothed version as we have heard also from developers of mathematical models. We have a project meeting in January 2015 and I will discuss whether we can also make such a side product to serve modellers and other users.

Regards
Dick
==
FEEDBACK:

-------- Original Message --------
Subject:RE: EMODNET Bathymetry
   Date: Mon, 1 Dec 2014 09:05:44 +0000
   From: Siddorn, John <john.siddorn@metoffice.gov.uk>
      To: Dick M.A. Schaap <dick@maris.nl>
      CC:'Wehde Henning' <Henning.Wehde@imr.no>, Jan-Bart Calewaert
          <janbart.calewaert@emodnet.eu>, "Iain.SHEPHERD@ec.europa.eu"
          <Iain.SHEPHERD@ec.europa.eu>, George Spoelstra <g.spoelstra@casema.nl>

Thanks Dick,

I hadn't appreciated you had already included GEBCO in your source data within the north sea region. That explains the issues more clearly, and gives some hope that your plan to smooth between the datasets will make something usable. That is fantastic, thank you.

John
REPLY:
From: Dick M.A. Schaap [mailto:dick@maris.nl]
Sent: 01 December 2014 08:47
To: Siddorn, John
Cc: 'Wehde Henning'; Jan-Bart Calewaert; Iain.SHEPHERD@ec.europa.eu; George Spoelstra
Subject: Re: EMODNET Bathymetry
Dear John,

Together with an expert colleague we had a further look at the issues you pointed out for the Southern North Sea. For that purpose we also had a look at the so-called 'source reference layer' in the layer menu of the EMODnet Bathymetry viewing service. See attached powerpoint. The gray areas are GEBCO. All issues you refer to in your screenshot are within these GEBCO areas or are caused by the differences between GEBCO and measured data. so not between surveys. Especially the "grid lines" are present in the 2008 GEBCO data just like a line that we found at 0E.
GEBCO data is often displayed with a color scale suitable for global use. The EMODnet color scales are non linear and designed to give more visual details in shallow waters. In most applications GEBCO

appears very smooth in the North Sea as a result of the global scale but the EMODnet colors proof the opposite and bring the issues more to the foreground.

Of course GEBCO is doing a tremendous job in building the global data set. And for the new EMODnet Bathymetry release we will be using the new GEBCO_2014 which has integrated / emulated the present EMODnet Bathymetry DTM, and in particular for the Southern North sea has included a rich set of OLEX data. GEBCO_2014 should have improved considerably compared to the older version that you see here. But also GEBCO can not invent data where it is not measured and using satellite derived bathymetry is then the only way to get global coverage.

We are sure that we may find also differences between two adjacent surveys if we look carefully. This may have different reasons. Especially in the southern North Sea the morphology is very dynamic. Two surveys that have 10 years difference in time will certainly not match. Also surveys that have undergone shoal based processing with safe navigation in mind (by Hydrographic offices) will differ from scientific surveys in the same area due to this safety biassing effect. The difference will be less but can still be visible.

As I have indicated, we will continue to improve the data set and will also continue the dialog with all stakeholders how to treat these differences with the different applications of the dataset in mind. As a direct step I have put it on the agenda for our coming EMODnet Bathymetry projectgroup meeting in January 2015 to discuss a possible alternative product.

Hope this help clarifying things a bit more.

Kind regards

Dick
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-------- Original Message --------
Subject:Re: Emodnet-Hydrography Feedback form (number 47)
   Date:Sun, 07 Dec 2014 22:00:14 +0100
   From:Dick M.A. Schaap <dick@maris.nl>
     To:dholroyde@caydaleconsulting.co.uk

Dear Dave,

You do not need a logon for the Bathymetry Viewing service. You can browse and also download the DTM without user - password.

The SeaDataNet user - pass is needed for requesting access to the underlying survey data which are included in the CDI service.

The logon on the Bathymetry Viewer is somewhat misleading; it is planned for making your own personal layer as explained in the Help of the viewer. However at present it does not work with the user-password of SeaDataNet.

We are planning to alter this and make it more straight forward.

Hope this helps
Kind regards
Dick M.A. Schaap
Coordinator

12/7/2014 21:34, noreply@maris.nl wrote:

Name:	Dave Holroyde
Emailaddress:	dholroyde@caydaleconsulting.co.uk
Feedback:	Good evening. I am having problems with the login. I have registered and received a personal id. from SeaDataNet (Login dh31444) and passwd but when I try to use this to login on the Bathymetry Viewing and Download service the system returns a message id 'not valid'. With thanks. Dave

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-------- Original Message --------
Subject: RE: Emodnet-Hydrography Feedback form (number 47)
   Date: Sun, 7 Dec 2014 21:28:20 -0000
  From: Dave Holroyde <dholroyde@caydaleconsulting.co.uk>
      To: 'Dick M.A. Schaap' <dick@maris.nl>

Dear Dick

Many thanks for the prompt response. I see my error and I am pleased to say it is now working fine.

Kind regards.

Dave Holroyde
Caydale Consulting Ltd
Phone: +44 (0)1330 820600
Mobile: +44 (0)7876 272527
Email: dholroyde@caydaleconsulting.co.uk