EMODnet Thematic Lot n° 1 - Bathymetry

5th Bi-monthly Report

Reporting Period: 01/09/2014 – 31/10/2014

Date: 13/11/2014

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.

- The coordinator has finalised and submitted the 1st Annual Interim Report and after receiving questions from the EU an updated second version which has been accepted by the EU.
- Data providers, regional coordinators and coordinator have discussed and agreed on a new planning and revised approach for the release of the new integrated EMODnet DTM, after deciding that the first compilation contained too much structural problems to go public. The new launching date is set at mid December 2014, which seems feasible considering present progress with the individual processing by data providers and regional DTM productions. Therefore also the GLOBE software has been upgraded, inter alia for new algorithms for statistics in good communication between expert partners.
- The EMODnet Bathymetry portal has been considerably revised as follow-up to the site review report as received from the EMODnet Secretariate.
- Coordinator has participated in the EurOcean Conference in Rome, Italy and has presented the key points of EMODnet Bathymetry at the Mediterranean side-event as organised by HCMR and the EMODnet side-event as organised by EMODnet Secretariate. Also a contribution was given to the drafting of the Rome declaration, in particular highlighting the importance of marine data management and EMODnet.

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
1 September 2014	Voorburg, The Netherlands	Technical tuning	Meeting between MARIS and GGSGC about the planning for new release and upgrading of portal
4 September 2014	Paris, France	Discussion on possible participation in Coastal Mapping tender	Meeting between SHOM as leader of IHO consortium and MARIS
1-2 October 2014	Brussels, Belgium	MODEG	EMODnet experts meeting

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 finalising the 1st Annual Interim Progress Report to the EU which has been accepted by the EU after a review cycle. Also a new planning for the 1st release of the EMODnet DTM has been discussed and agreed with all partners, striving for a new release at mid December 2014. A response has been prepared and submitted to the EMODnet secretariate in reply to the Portal Review report as received from the EMODnet secretariate. This response is included as Annex. Moreover upon request of the EMODnet secretariate a technical description has been prepared of the EMODnet Bathymetry infrastructure and IT configuration.

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 10774 entries from 24 data centres from 14 countries. In addition, there are a further 2490 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 **13264** CDI entries. The number of composite DTMs in the Sextant directory has increased to **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:

Local data providers have been re-processing their survey data sets using the latest GLOBE software and these have been forwarded to regional coordinators for re-producing a compiled bathymetric product for each of the regional basin areas from all the data sets contributed by the data providers. 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. This process is now well underway and all regional coordinators are preparing for transfer of their regional DTMs to GGSgc for overall integration into the new EMODnet DTM.

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

GGSgc is awaiting the revised Regional DTMs from the regional coordinators for QA – QC and integration of the overall new EMODnet DTM. Hopefully the results will be much better, improving the deficiencies as encountered in the previous draft release.

WP4 – Technical development and operation of portal:

MARIS and GGSgc have held a 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 will develop and release upgraded functionalities for the Viewing service together with the new DTM release mid December 2014. In addition MARIS has revised the overall portal, its content and its navigation, including switching between the various services. Users will now have less difficulty in finding their way and in understanding the relation between the different services and the overall methodology as used in EMODnet Bathymetry for generating the EMODnet DTM.

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

Finalising the 1st Annual Interim Progress Report and updating the report in response to EU questions for further clarification. The report has been accepted.

Preparing a revised planning and approach for the new EMODnet DTM release, after identifying serious issues with the quality of the first product.

No further progress has been made with the Geodata Agency from Danmark (DGA) that has not yet signed their contract. This implicates that because of absence of an official agreement their data (composite DTMs) have not been used for the new EMODNet Bathymetry product generation (while it has been used earlier for the present DTMs).

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
8-9-2014	Davaasuren, Narangerel	NIOZ	Question about use of data; was received through EMODnet secretariate	Answer at 21-9-2014

Annex 2 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
6-9 October 2014	Conference	EurOcean, Rome - Italy	Presenting EMODnet Bathymetry at 2 side-events (Mediterranean and EMODnet) and meeting with representatives of EU, and institutes
28-30 October 2014	Conference	EUROGOOS, Lisbon - Portugal	Meeting with other people involved in marine data collection and management

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

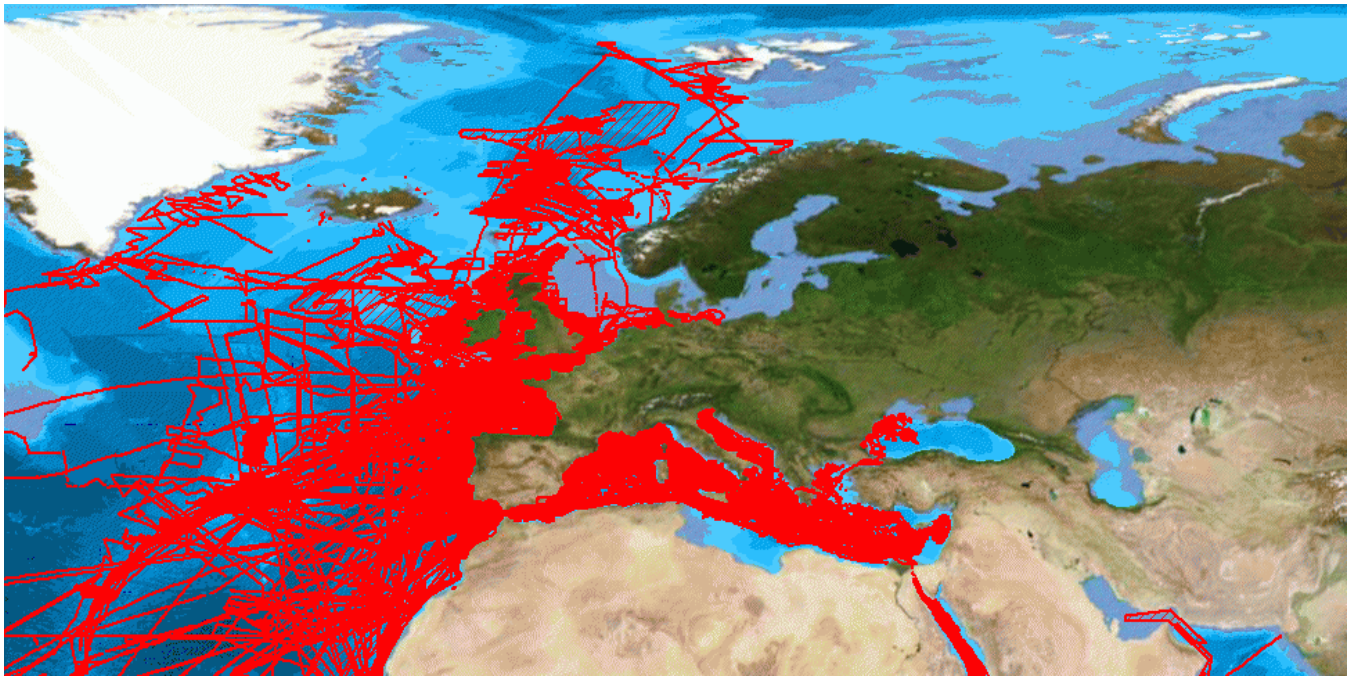
The total number of CDIs for bathymetric survey data sets has increased from: **10731 to 10774**

Moreover in the import system there are new entries underway: **2490**

The total in production covers the whole globe. Specifically relevant for European waters has increased from: **7725 to 7860**

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	4128	0	4128
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	7	0	7
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
		7860	367	7493

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 September 2014 – 31 October 2014:

CDIs:

No of CDI basket transactions: **10**

No of CDIs requested: **47**
Different users: **8**
Different data centres: **6**

Data products – DTMs:

Tile	Downloads
Greater North Sea	529
Celtic Seas	461
Adriatic-Ionion Sea - C.Meditarrenean	455
West Mediterranean	449
Bay of Biscay - Iberian Coast	426
Aegean-Levantine Sea	420
Azores	374
Madeira	374
	3488

Format	Downloads
ESRI	
ASCII	991
XYZ	614
GeoTiff	846
NetCDF	219
CSV	532
SD	286
	3488

Indicator 5 - Organisations that have downloaded each data type

ESA/ESRIN, Italy

Individual, United States

TCarta Marine, United States

Leeds University, United Kingdom

University of Cádiz, Spain

IHM, Spain

Mercator Consulting, United States

ULISES SÁEZ DÍAZ, Spain

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
Sep 2014	1,107	1,954	19,065	52,457	1.70 GB
Oct 2014	1,289	2,518	26,742	82,029	3.09 GB

Visitors in October 2014:

Hosts (Top 10) - Full list - Last visit - Unresolved IP Address

Hosts : 1,071 Known, 468 Unknown (unresolved ip) 1,289 Unique visitors	Pages	Hits	Bandwidth	Last visit
a83-163-127-252.adsl.xs4all.nl	2,243	9,189	177.24 MB	31 Oct 2014 - 12:32
84.41.108.220	2,131	2,174	26.54 MB	31 Oct 2014 - 15:23
ns504861.ip-192-99-149.net	1,680	1,680	18.21 MB	28 Oct 2014 - 23:41
a82-95-67-170.adsl.xs4all.nl	959	1,529	22.84 MB	23 Oct 2014 - 13:44
c-24-9-157-81.hsd1.co.comcast.net	801	1,050	13.15 MB	30 Oct 2014 - 21:08
87.98.146.33	708	708	3.59 MB	26 Oct 2014 - 20:47
60.191.137.11	644	644	3.24 MB	29 Oct 2014 - 19:08
user.vliz.be	557	1,316	37.16 MB	29 Oct 2014 - 14:30
78.red-80-58-250.staticip.rima-tde.net	449	1,285	9.36 MB	30 Oct 2014 - 12:25
ip565c1937.direct-adsl.nl	402	1,816	26.47 MB	22 Oct 2014 - 12:11
Others	16,168	60,638	2.76 GB	

Bathymetry DTM viewer service:

Month	Unique visitors	Pages	Hits	Bandwidth
Sept-14	1.390	1,906	3,149	54,00 GB
Oct-14	1.686	2,456	4,348	55.88 GB

Hosts

Top Hosts

	Host	Country	Hits	Visitors	Bandwidth (KB)
1	ptr.cnsat.com.cn	China	501	484	1,168,296
2	ns504861.ip-192-99-149.net	United States	308	116	183,500
3	119.63.193.194	Japan	91	88	1,124,806
4	119.63.193.130	Japan	90	86	269,814
5	119.63.193.196	Japan	86	85	845,719
6	119.63.193.132	Japan	86	85	116,219
7	119.63.193.131	Japan	75	72	84,974
8	119.63.193.195	Japan	68	67	806,041
9	user.vliz.be	Belgium	76	35	535,451
10	199.19.249.196	United States	33	27	64,935
11	212.189.167.221	Italy	34	26	194,804
12	google-proxy-66-249-81-5.google.com	United States	25	25	275
13	google-proxy-66-249-81-85.google.com	United States	24	24	264
14	a83-163-127-252.adsl.xs4all.nl	Netherlands	68	24	2,053,294
15	192.Red-80-36-114.staticIP.rima-tde.net	Spain	43	22	421,078
16	unknown.shom.fr	France	45	21	1,271,748
17	smtp-out.navionics.com	Italy	32	18	344,843
18	93-61-73-117.ip145.fastwebnet.it	Italy	32	17	239,525
19	192-171-5-126.esrin.esa.int	United States	29	16	508,032
20	85-18-36-49.ip.fastwebnet.it	Italy	28	14	7,136
21	85.105.10.166.static.ttnet.com.tr	Turkey	22	14	242
22	a82-95-67-170.adsl.xs4all.nl	Netherlands	25	12	275
23	gate1.marum.de	Germany	17	10	112,614
24	dtclus7b.deltares.nl	Netherlands	34	10	920,941
25	proxy.ec.europa.eu	Luxembourg	12	9	132
26	ip51cc1e7d.speed.planet.nl	Netherlands	40	9	394,247
27	dhcp-089-098-190-239.chello.nl	Netherlands	34	9	1,184,879
28	nat.bo.ismar.cnr.it	Italy	16	8	23,853
29	imgstt.com	Netherlands	14	8	165,699
30	62.53.200.132	Germany	22	8	970,193
31	c-24-9-157-81.hsd1.co.comcast.net	United States	9	7	99
32	46.34.88.155	Unknown	12	7	77,104
33	84.243.31.93.rev.sfr.net	France	17	7	614,099
34	google-proxy-66-249-93-85.google.com	United States	7	7	77
35	cli-5b7ebba4.bcn.adamo.es	Spain	26	7	37,152
36	194.42.21.100	Cyprus	7	6	77
37	ppp005054187198.access.hol.gr	Greece	34	6	165,431
38	static.kpn.net	Netherlands	21	6	426,523
39	83.137.242.22	France	10	6	180,555
40	64.245.193.226	United States	9	6	99
41	br144-150.ifremer.fr	France	8	6	305,420
42	c-24-16-6-91.hsd1.wa.comcast.net	United States	16	6	1,163,054
43	ec2-50-18-216-148.us-west-1.compute.amazonaws.com	United States	12	6	132
44	s529cb43e.adsl.online.nl	Netherlands	11	5	420,726

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: Respons to review report of EMODnet Secretariate

From: Dick M.A. Schaap – MARIS

Date: 3rd October 2014

Recommendations of EMODnet Secretariate and feedback by EMODnet Bathymetry

1) Provide a concise status update up-front on the home page with an overview of what is currently available now and what additional data, products and functionality the portal will offer in the future. => DONE

   Put a disclaimer indicating that EMODnet is work in progress (Secretariat will provide a common template). => TEXT INCLUDED. No disclaimer received yet, but we think it is not necessary because it undermines that we already have a very nice DTM product and rich CDI data discovery and access service in Bathymetry.

2) Secretariat is to review, with the thematic lot, the central portal bathymetry summary page to ensure that all the data web services are clearly outlined and listed => EDITED TEXT submitted by Coordinator to EMODnet Secretariate at 3rd October 2014 .

3) Improve connectivity (i.e. cross linking) between data portals/data catalogues for the user to have a single entry point and to be able to navigate between the different services. Use standard set of navigation buttons on each page/same location for easy recognition by users. => DONE by redesigning the homepage with a navigation floorplan with interrelationships between services PLUS extra navigation buttons (go to website) in topbar of distributed services and dedicated titles for each service.

4) On the EMODnet-bathymetry website, reduce the amount of background information on the first page to the very essentials for users (the data and services provided and how to access them) and move all details about the project and the EMODnet history/context to the background information pages/section providing more details as you dig deeper in that section's hierarchy; => DONE

5) The (meta)/data/(products) tabs on the EMODnet-bathymetry website should immediately enable users to start searching and exploring the data (see userflow above); => DONE, it is now 2 clicks from the HOMEPAGE to be in the search interfaces of CDI or Sextant. Info page in between is really required to inform users beforehand about the CDI principles with logon and shopping facilities.Otherwise they will not understand it.

6) . Clarify the different terms or references currently used to describe a single service (e.g. data portal) and apply it consequently on all webpages; => DONE, one unified terminology and naming in the site and services

7) Integrate user defined geographical search (e.g. using coordinates or via cursor/pointer) => WE DO NOT UNDERSTAND THIS => there are already geographical search options in all services by lat-lon box, mouse driven, and by + and -; seems the selected users expected a much higher functionality such as selecting a DTM part by lat-lon box in 3D which we do not support in this interface. This functionality is offered by a free 3D viewer that works offline. We are very interested to hear of sites that already have this

functionality so that we can explore whether it is feasible in the scope of EMODnet Bathymetry

8) The functionality provided by the "Personal Layer" is not clear and should be explained more clearly if it is offered as a functionality; => AGREE that we should improve this. Right now it is a pilot and described only in the Bathymetry Viewer HELP. Users need to ask us for a dedicated user – password. We will improve this understanding and will also try to use the SeaDataNet User Register to support Single Sign On.

9) Provide a label for both axis on any graph produced (depth measurements); => AGREE We will include the distance in (kilo)meters in the depth profiles

10) Integrate tooltips/Review layer names => AGREED. We will review the layer names and include alt texts to explain better the meaning of layer contents (where needed).

11). There are two distinct types of users: (i) users familiar with portal and spatial analysis and (ii) users who are more familiar with catalogues. The portal should be as intuitive as possible and supplemented with user guidance tailored to the lowest common denominator in terms of expertise. Ideally the help should open in another tab (not the case currently for data portal); => DO NOT AGREE: the lowest common denominator is never the target of services like EMODnet Bathymetry. We are targetting educated people that are used with bathymetry and really want to browse and download DTMs or know which data is underpinning the DTMs. Therefore we can ask them to read some explanations and instructions beforehand and not everything being targetted at the lowest 'monkey' level, because some of the functions are complex by themselves and require instructions and some (limited) practice. Every service has a dedicated HELP section as part of its menu which tries to give a narrative description and explanation of meaning of functions and how to operate these. The HELP is part of the submenu in the chosen service and must not be placed in separate TABs because those are reserved for other navigation chapters in the overall portal.

12). Create a user guidance document that documents the user flow from "search till publication/application"; information should remain up to date as portal and website functions are upgraded over time; => AGREE, we had done this before by a DEMO animation showing the different capabilities of the portal in a workflow. The portal has been upgraded, so that we will work on a new DEMO Workflow animation

13). Provide sextant user guide material or ensure it is integrated as part of the overall bathymetry user documentation => DONE. Functions and documentation in the Sextant service have been streamlined and the position of Sextant in the overall portal has been emphasized more clearly in the homepage and consecutive pages.

14. Integrate user guidance into the data portal legend (tool tips). => DO NOT AGREE: the various HELP sections and other means of guidance should be enough together with a sound understanding of users. Again, we are targetting professionals and not the average person.

15). Enable an option to automatically activate (make visible Figure 1b) the submenu which allows users to download single tile(s); =. DO NOT AGREE with automatic opening of

submenus . Normally one has to click to make choices and to open the next submenu. Opening automatically will be very nervous and have the opposite effect.

16). Source reference layer could be better integrated to link to other services (Sextant, CDI, etc.) => QUESTION MARK what do you mean: Right now you activate the SOURCE layer (every GIS has only one active info layer). This shows an extra function: Retrieve metadata. Thereafter you can click on any source on the layer map and this gives that specific CDI reference for a survey data set OR a Sextant reference for a Composite DTM data set OR a reference to GEBCO.

17). Add "download" of bathymetry data as a menu-option on the toolbar in the data portal; => QUESTION MARK => in which service do you mean. Are you talking about data from CDI service OR DTM tiles from Bathymetry OR …???

18). Enhance user functionality in terms of geographical search, download depth profile, etc. => NO/YES AGREE : There is geographical search everywhere in all services (see earlier under 7. Concerning Depth profile: we will look into downloading it as image file OR as later as GML.

19). Add section/summary with up to data information about QA/QC on both the Bathymetry website and the thematic lot central portal summary page => DONE: The QA-QC and DTM generation methodology is explained by downloadable document on the Bathymetry portal. Do not agree it should also be at the Cdentral Portal.

20). Ensure that documentation provided is up to date and reflects the current phase/methodology (if changed) => AGREE in general terms and we strive to do this

21). List accreditation guidelines as part of the user documentation and clarify exactly what is required; => DONE => there is already a section on Acknowledgement with a standard text at the website at several locations.

22). Add accreditation as a heading on central portal summary page/standardize across lots => AWAIT a propsal by EMODnet Secretariate which fits all lots

23). Communicate more clearly about the process and progress of the EMODnet portals (central portal & thematic level); => AGREE and try. See latest version portal

24). Review possible options for users to submit feedback on products and follow up process, preferably trough a standard form and automated notification system (also copies send to the secretariat). => DOUBT => there is already a central feedback form as part of the standard tools everywhere left on the webpages. Collecting very detailed feedback and processing that feedback is not budgeted as such and will go beyond the scope of the EMODnet Bathymetry group. We try to answer and give feedback to users and to learn from this by improving pages and services, but we can not handle every individual user as a public service. There is simply NO budget for that reserved.

Annex 2

Details of users feedback and follow-up

QUESTION:
Date: 8 September 2014
Name: Davaasuren, Narangerel
E-mail: narangerel.davaasuren@wur.nl
Subject: information request multi-beam and single beam data for the North Sea
To: "liesbeth.renders@emodnet.eu" <liesbeth.renders@emodnet.eu>
Dear Liesbeth
I have request concerning data for the North Sea. I have been asking from my colleagues at NIOZ, Royal Netherlands Institute for Sea Research about availability of multi-beam data and or single beam data in high resolution covering the North Sea and they recommended me to ask from EMODNET data portal. Please let me know, if such data is available and can be obtained from your portal?
Many thanks in advance for your time and your any assistance
With kind regards Narangerel (Nara).

REPLY:
Date: 21 September 2014
Dear Nara,
Thank you for your question. Please go to the portal at:
http://www.emodnet-bathymetry.eu
There you will find a number of services including full explanation. One of the relevant services for your question is the CDI Data Discovery and Access service which gives you a catalogue for discovering bathymetric survey data as acquired by many research institutes, including NIOZ and hydrographic services from Europe for all oceans and sea areas in the world, including the North Sea. The CDI service also gives options for requesting access to selected survey data sets. Thereby negotiation with data providers might be required. In addition, the portal also provides a bathymetry viewing service to browse a DTM for European seas at a grid size of 1/4 * 1/4 minute. This service also include options for downloading the DTM as tiles in various formats on a free basis. Have a look at the portal:
http://www.emodnet-bathymetry.eu
Kind regards
Dick M.A. Schaap
Coordinator