



Document Title: Indicators for EMODnet Bathymetry – Jan – March 2018

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Abstract: This deliverable describes the new indicators and procedures of the EMODnet technical monitoring system and includes the output of the pilot phases conducted to test the feasibility of the proposed new procedure.

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Issue	Date	Description	Author/Partner
V0.1	10 April 2018	Bathymetry Indicators Jan - March 2018	Thierry Schmitt and Dick M.A. Schaap
V0.2			
V0.3			
V0.9			
V0.10			
V1.0			

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1. New monitoring indicators

1.1. Indicator 1.1: Volume and coverage of available acquired data

Template:

1.1. Volume of available acquired data	Date ¹	Portal ²	Unit ³					Total Volume ⁴	Trend ⁵
	31/3/2018	Bathymetry	Data sets					27066	+0.7%
Sea basins	Atlantic	Arctic	Baltic	Black Sea	Med Sea	North Sea	Other Seas	Total Volume per theme	Trend
Sub-theme ⁶ :									
Bathymetry	4312	1142	5483	99	3698	8553	3995	27066	+0.7%

Theme	Sub-themes
Bathymetry	Bathymetry

Portal	Measurement unit	Redundancy	Reported unit
Bathymetry	Number of CDIs = Number of datasets	YES, because a survey can run through multiple sea regions	Datasets

¹ Date is the reporting date, preferably on the 1st day of the month

² Portal is the portal's name

³ Unit is a short description of the volume unit of measurement: "records", "data sets", or "platforms". The full unit description can be found in the monitoring support document.

⁴ Total volume measures the total amount of available data without redundancy. Redundancy notifies if some units of volume are counted twice in the table. For example, if a dataset covers 2 sea basins, or several themes, it should be counted multiple times. As a consequence, adding up all the numbers on a row would give an overestimation of the total volume per theme.

⁵ Trend compares the reported total volumes with their corresponding total volumes reported 3 months earlier (in %).

⁶ The list of sub-themes is provided later on in this paragraph

1.2 Indicators 1.2: Number and coverage of acquired external data products

Template:1.2. Number and coverage of available acquired data products	Date ⁷	Portal ⁸						Total Number of external data products ⁹	Trend ¹⁰
		31/03/2018	Bathymetry						131
Sea basins ¹¹	Atlantic	Arctic	Baltic	Black Sea	Med Sea	North Sea	Other	All sea basins	Trend
Sub-theme ¹²									
Bathymetry	15	5	3	23	68	17	0	131	+13.9%

1.2. Indicators 2: Organisations supplying data and data products

The following table gives datasets as included in the CDI catalogue for the European area as defined by Lat Long box: N80, W-30 ; N20, E45.

Organisations supplying each type of data	Date:	Portal:			
	31/03/2018	Bathymetry			

⁷ Date is the date of measurement, preferably on the 1st of each month

⁸ Portal is the portal's name

⁹ Total number measures the total amount of external data products without redundancy. Redundancy notifies if some external data products are counted twice in the table. For example, one data product could cover several sea basins. The column named "All sea basins" expects the number of external data products of each theme. It is not equal to the row sum in case of redundancy (one product covering several sea basins)

¹⁰ Trend compares the reported total volumes with their corresponding total volumes reported 3 months earlier (in %)

¹¹ Sea basins are: Atlantic, Arctic, Baltic, Black Sea, Med Sea & North Sea.

¹² Theme and sub-themes are the same of Indicator 1.1

Data Centre	Type	Country	No of CDIs	No restrictions	Restrictions
Shom	Hyd. Service	France	5813	0	5813
Swedish Maritime Administration	Hyd. Service	Sweden	5774	0	5774
Rijkswaterstaat Central Information Services	Hyd. Service	Netherlands	2702	0	2702
OceanWise Limited	Company	United Kingdom	2108	0	2108
Norwegian Hydrographic Service (NHS)	Hyd. Service	Norway	1222	0	1222
Italian Navy Hydrographic Office	Hyd. Service	Italy	1073	0	1073
German Oceanographic Datacentre (NODC)	Hyd. Service	Germany	1004	1004	0
IFREMER / IDM / SISMER - Scientific Information Systems for the SEA	Research	France	781	292	489
Maritime Administration of Latvia	Hyd. Service	Latvia	580	0	580
Flemish Ministry of Mobility and Public Works; Agency for Maritime and Coastal Services; Coastal Division	Hyd. Service	Belgium	341	0	341
Royal Netherlands Navy, Hydrographic Service	Hyd. Service	Netherlands	331	0	331
IHPT, Hydrographic Institute	Hyd. Service	Portugal	296	0	296
Geological Survey Ireland	Hyd. Service	Ireland	266	266	0
CNR, Institute of Marine Science (ISMAR) - Bologna	Research	Italy	110	0	110
British Oceanographic Data Centre	Research	United Kingdom	100	98	2
Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre (HCMR/HNODC)	Research	Greece	94	0	94
Management Unit of North Sea and Scheldt Estuary Mathematical Models, Belgian Marine Data Centre	Research	Belgium	93	93	0
IEO/Spanish Oceanographic Institute	Research	Spain	87	21	66
Portuguese Institute of Ocean and Atmosphere	Research	Portugal	76	0	76
British Geological Survey, Edinburgh	Research	United Kingdom	62	0	62
Hydrographic Institute of the Navy	Hyd. Service	Spain	58	0	58

Data Centre	Type	Country	No of CDIs	No restrictions	Restrictions
Stockholm University, Department of Geological Sciences	Research	Sweden	49	0	49
Marum - Center for Marine Environmental Sciences, University of Bremen	Research	Germany	35	0	35
UTM-CSIC/Marine Technology Unit	Research	Spain	34	0	34
CONISMA, National Interuniversity Consortium for Marine Science	Research	Italy	33	0	33
CNR, Institute for the Marine and Coastal Environment (IAMC) - Napoli	Research	Italy	30	0	30
NIOZ Royal Netherlands Institute for Sea Research	Research	Netherlands	30	0	30
Bulgarian National Oceanographic Data Centre(BGODC), Institute of Oceanology	Research	Bulgaria	24	0	24
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Infrastructures Division	Research	Italy	22	0	22
CNR, Institute of Environmental Geology and Geoengineering (IGAG)	Research	Italy	20	0	20
GRID-Arendal	Research	Norway	14	0	14
National Institute of Marine Geology and Geoecology	Research	Romania	14	0	14
Jardfeingi, the Faroe Islands Earth and Energy Directorate	Hyd. Service	Faroe Islands	13	0	13
SC Marine Research SRL	Company	Romania	12	0	12
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Division of Oceanography	Research	Italy	10	0	10
National Institute for Marine Research and Development "Grigore Antipa"	Research	Romania	9	2	7
IGME, Geological Survey of Spain	Research	Spain	8	0	8
International Ocean Institute - Malta Operational Centre (University Of Malta) / Physical Oceanography Unit	Research	Malta	6	0	6

Data Centre	Type	Country	No of CDIs	No restrictions	Restrictions
Institute of Marine Sciences. Mediterranean Marine and Environmental Research Centre (CMIMA-ICM-CSIC). Department of Marine Science.	Research	Spain	4	0	4
Geodetic Institute of Slovenia	Hyd. Service	Slovenia	3	0	3
Israel Oceanographic and Limnological Research (IOLR)	Research	Israel	2	0	2

The following table gives data products as included in the Sextant Catalogue

2. Organisations supplying each type of data	Date ¹³	Portal ¹⁴			
	31/03/2018	Bathymetry			
	Type ¹⁵	Country	Data or Data product or Both	Themes	% of restricted data ¹⁶ (or #restricted/# not restricted)
ISMAR (EDMO:145)	Research	Italy	Data product	Bathymetry	4 restricted / 1 not
CoNISMa (EDMO: 239)	Research	Italy	Data product	Bathymetry	7 restricted
IEO (EDMO:353)	Research	Spain	Data product	Bathymetry	37 restricted
GST (EDMO:465)	Hyd. Service	Denmark	Data product	Bathymetry	2 restricted
Ifremer (EDMO: 486)	Research	France	Data product	Bathymetry	3 restricted
Shom (EDMO: 540)	Hyd. Service	France	Data product	Bathymetry	1 restricted

¹³ Date is the date of measurement, preferably on the 1st of each month

¹⁴ Portal is the portal's name

¹⁵ Type is the organization type. A list of organization types is available in the Glossary.

¹⁶ Restricted data is data not public.

NHS (EDMO: 543)	Hyd. Service	Norway	Data product	Bathymetry	5 restricted
Netherland Hydro Service (EDMO: 574)	Hyd. Service	Netherland	Data product	Bathymetry	2 restricted
IO-BAS (EDMO: 692)	Research	Bulgaria	Data product	Bathymetry	2 restricted
MARUM (EDMO: 1568)	Research	Germany	Data product	Bathymetry	21 restricted
BSH (EDMO: 1850)	Hyd. Service	Germany	Data product	Bathymetry	10 restricted /2 not
Stockholm University (EDMO: 2210)	Research	Sweden	Data product	Bathymetry	1 unrestricted
Vlaamse Hydrografie (EDMO 2243)	Hyd. Service	Belgium	Data product	Bathymetry	3 restricted
IGAG (EDMO: 2918)	Research	Italy	Data product	Bathymetry	1 restricted
IPMA (EDMO: 2979)	Research	Portugal	Data product	Bathymetry	3 restricted
IOLR (EDMO: 3005)	Research	Israel	Data product	Bathymetry	4 restricted
Estonian Maritime Administration (EDMO:3085)	Hyd. Service	Estonia	Data product	Bathymetry	1 restricted
Swedish Maritime Administration (EDMO: 3471)	Hyd. Service	Sweden	Data product	Bathymetry	1 restricted
Gedetic Institute of Slovenia (EDMO: 4666)	Hyd. Service	Slovenia	Data product	Bathymetry	1 restricted
Eomap (EDMO: 4667)	Company	Germany	Data product	Bathymetry	18 restricted
IsardDAT	Company	Spain	Data product	Bathymetry	1 restricted
TeamSurv	Company	UK	Data product	Bathymetry	1 restricted
IHM	Hyd.	Spain	Data product	Bathymetry	1 restricted

	Service			ry	
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1.3. Indicators 3: Organisations that have been approached to supply data with no result, including type of data sought and reason why it has not been supplied

Not applicable.

1.4. Indicator 4: Quality Control and Quality Assurance steps

4. Quality Control & Quality Assurance	Date ¹⁷	Portal ¹⁸		
	31/03/2018	Bathymetry		
QA /QC steps	✓ ¹⁹	Short Description	By whom?	Automatic/Semi-automatic/Manual
Metadata curation	✓	ISO XML 19115 metadata templates associated to each sources of bathymetry (corresponding to individual surveys – CDI – or composite DTM – CPRD) are filled using appropriate	Data providers, MARIS for CDI import, IFREMER for Sextant import	Semi-automatic (use of Mikado editor tool, coupled to local database for generation of CDIs and Sextant CMS for generation of Sextant entries by data providers). Automatic verifications done for CDI and Sextant cataloguing databases during import with reporting to data

¹⁷ Date is the date of measurement, preferably on the 1st of each month

¹⁸ Portal is the portal's name

¹⁹ Portals are asked to flag the steps they perform. If a step is flagged, portals should provide a short description of what they do, who performs the step, and say if the step is automatic, semi-automatic or manual.

		vocabularies (see below)		providers
Data standards compliance checks	✓	Data sets in CDI service must follow a standard list of possible data formats (L24 vocabulary). This is checked during import.	By MARIS	Automatic as part of Syntax and semantics checks during import
Geographic Location Control	✓	Well-formed CDIs are included in Import CDI interface for visual checking including geo-coverage (staging process)	By data providers and MARIS	Manual. If data provider is ok, then CDIs are moved to production CDI service and made public
Error Detection thanks to thematic expertise	✓	Bathymetric data are processed to the better of the knowledge of the data providers (to account for tide, variable sound speed, bias in positioning or vertical measurement) or up to internationally agreed standards (IHO S-44 standard for	Data providers, Basin Coordinators, GGSGC (final integration)	Manual. Aided through use of 3D visualization using DTM production software (Globe).

		Hydrographic Offices). All the data providers follow the same data delivery methodology		
Quality Index / Accuracy assessment	✓	Data providers give details on their dataset with respect to positional accuracy, vertical accuracy, and age of the dataset and purpose of the survey. These elements will be used for data grouping and merging and also to provide a global quality indicator for the EMODnet bathymetry DTM product	Data providers	filled manually or semi-automatically entered (depending on fields mapping from provider's database)
Data aggregation	✓	Each of the elements composing the EMODnet DTM are aggregated at a sea basin level and then at the global level. Insurance that the link	Basin coordinators, GGSGC (final aggregation), MARIS	Manual (selection of appropriate sources and associated order of priority).

		between the DTM product and the source data through the metadata description is verified at each levels.		
Harmonization	✓	Unified methodology applied by all data providers and regional coordinators and implemented by using the Globe software as made available for the project members by IFREMER	all	Semi-Automatic
Language	✓	English	all	Manual + Automatic
Units	✓	Bathymetry in meters and to LAT reference level, integrated in the Globe software	all	Automatic
Terminology	✓	Metadata are marked up, where possible, with SeaDataNet controlled vocabularies and with terminology	SeaData Net	Automatic; vocabularies are integrated as web services in editing tools for metadata.

		as defined with hydrography experts.		
Coordinate Systems	✓	Unified methodology integrated in the Globe software. Also adoption of agreed grid definitions by all data providers.	All	Automatic
Data format	✓	EMO data format defined and documented for all DTM production. Integrated in the Globe software.	all	Automatic
Metadata	✓	CDI and Sextant metadata are based upon the ISO19115 – 19139 standards. During DTM production references to CDI and Sextant are integrated into the resulting grid cells, so that users can query which data set is related to each specific grid cell. This	all	Automatic

		is part of the EMO format as applied for the EMODnet DTM.		
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1.5. Indicator 5.1: Number and coverage of built data products

5.1. Number and coverage of built data products	Date ²⁰	Portal ²¹	Unit					Total Volume	Trend
		31/03/2018	Bathymetry	#data products					0
Sea basins ²²									
Sub-themes	Atlantic	Arctic waters	Baltic Sea	Med Sea	Baltic Sea	North Sea	Black Sea	All sea basins	Trend
	0	0	0	0	0	0	0	0	0

1.6. Indicator 5.2: List of data product releases by the portal

Template:

5.2. Data Product	Date ²³	Portal ²⁴	#of EMODnet data products ²⁵
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²⁰ Date is the date of measurement, preferably on the 1st of each month

²¹ Portal is the portal's name

²² Sea basins are: Atlantic, Arctic, Baltic, Black Sea, Med Sea & North Sea.

²³ Date is the date of measurement, preferably on the 1st of each month

²⁴ Portal is the portal's name

²⁵ Number of data products created or updated in the reporting period

Releases	<i>30/03/2018</i>	<i>Bathymetry</i>	<i>0</i>
EMODnet data product name	Last release date (< 3 months only)	Creation or Update	Description
EMODnet DTM		Oct 2016	DTM for all European seas - http://doi.org/10.12770/c7b53704-999d-4721-b1a3-04ec60c87238

5.2. Data Product Releases	<i>Date²⁶</i>			
	<i>09/04/2018</i>			
Portal	Last release date (< 3 months)	3 - 12 months	12 - 24 months	> 24 months
Bathymetry			1	

1.7. Indicator 6.1: Portal & Social Media visibility

<http://piwik.vliz.be/index.php?module=CoreHome&action=index&idSite=24&period=day&date=yesterday&updated=1#?idSite=24&period=range&date=2018-01-01,2018-03-23&category=General Actions&subcategory=Actions SubmenuPageTitles>

Template:

6.1.1 Visibility & Analytics	<i>Date²⁷</i>	<i>Portal²⁸</i>	<i>Analytics tool²⁹</i>				
	<i>01/01/2018 23/03/2018</i>	<i>Bathymetry</i>	<i>Matomo</i>				
Pages³⁰	Page views		Trend	Unique page views		Trend	Exit Rate
	Last	Actual	%	Last	Actual	%	%

²⁶ Date is the date of measurement, preferably on the 1st of each month

²⁷ Date is the date of measurement, preferably on the 1st of each month

²⁸ Portal is the portal's name

²⁹ Matomo (ex Piwik) or Logs

	Report	Report		Report	Report		
Viewing and downloading service	n.a.	2821	n.a.	n.a.	2110	n.a.	68%
QA/QC and DTM production details	n.a.	76	n.a.	n.a.	67	n.a.	30%
Web services and standards	n.a.	55	n.a.	n.a.	50	n.a.	28%
WMS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
WFS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
WMTS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
WCS	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EMODnet Bathymetry OWS services	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
CDI Data Discovery and Access service	n.a.	721	n.a.	n.a.	559	n.a.	36%
Request Status Manager (RSM)	n.a.	7	n.a.	n.a.	7	n.a.	0%
Sextant Catalogue service	n.a.	352	n.a.	n.a.	92	n.a.	57%
How can I contribute?	n.a.	42	n.a.	n.a.	33	n.a.	50%
Landing pages ³¹	Number of visits		Trend	Number of unique visitors		Trend	Bounce Rate
	Last	Actual	%	Last	Actual	%	%

³⁰ For each portal, the most relevant webpages that need to be monitored have to be identified. The Support Guidelines document provides an initial list.

³¹ By landing page we mean pages that mainly redirect users to other pages.

	Report	Report		Report	Report		
Home Page	n.a.	3971	n.a.	n.a.	3165	n.a.	58%

6.1.2 Social Media performance	<i>Date³²</i>	
	01/01/2018 23/03/2018	
	# in the reporting period	Trend³³
Twitter followers	2305	n.a.
Twitter impressions	102.8K	n.a.
Twitter engagement rate	1,1%	n.a.
Twitter Likes	185	n.a.
Facebook Likes	58	n.a.
LinkedIn connections	n.a.	n.a.

6.1.3 SEO assessment - brand monitoring	<i>Date³⁴</i>		
	01/01/2018 23/03/2018		
URL	BM scores ³⁵	Total Mentions	Mentions with backlinks
No mentions			

6.1.4 SEO assessment -	<i>Date³⁶</i>	01/01/2018 23/03/2018			
	<i>Behavior</i>				

³² Date is the date of measurement, preferably on the 1st of each month

³³ Trend compares the reported total numbers with their corresponding total numbers reported 3 months earlier (in %)

³⁴ Date is the date of measurement, preferably on the 1st of each month

³⁵ Measures the domain's authority on a 100-point scale, based on SEMrush's Domain Score.

³⁶ Date is the date of measurement, preferably on the 1st of each month

Acquisitions	Visits	Visits %	Bounce rate	Action/visit	Average time on website
Organic Search	646	21%	29%	4	00:03:59
Direct	1709	55%	57%	2,7	00:03:06
Referral	734	23,8%	27%	4,1	00:03:48

6.1.5 SEO assessment - performances	Date ³⁷	Portal				
	23/03/2018	Bathymetry				
Keyword	CPC ³⁸	Volume	Portal Positioning	noaa.gov	sciencedirect.com	
dtm reference framework	n.a.	n.a.	1	n.a.	n.a.	
dtm coverage	n.a.	10	18	n.a.	n.a.	

1.8. Indicator 6.2: Efforts to increase visibility (newsletters, press releases, events)

6.2. Efforts to increase visibility	Date ⁴⁰	Portal
	09/04/2018	Bathymetry
	Quantity	Main results
Number of events organized	1	Workshop at Oceanology International 2018

³⁷ Date is the date of measurement, preferably on the 1st of each month

³⁸ The average minimum price that advertisers pay for a user's click on an AdWords ad that popped up for a given keyword

³⁹ The average number of search queries per month for the queried keyword over the last 12 months.

⁴⁰ Date is the date of measurement, preferably on the 1st of each month

		~20 participants, including potential data provider in Russia
Number of events attended	1	MERIGEO Conference – France: targeting French marine data users.
Number of news pieces written ⁴¹	2	
Number of newsletters ⁴²	0	
Number of press releases	0	

1.9. Indicator 7.1: Technical monitoring

Template:

7.1 Technical monitoring	Date ⁴³	Portal	
	23/03/2018	Bathymetry	
Portals	Website availability ⁴⁴ (Average value in the period)	Response time ⁴⁵ (Average value in the period)	Responsiveness ⁴⁶ (Average value in the period)
Bathymetry	100%	149ms	99,851%

1.10. Indicator 7.2: Portal user-friendliness

User friendliness

7.2 User-	Date ⁴⁷	Portal			

⁴¹ This will be reported by the Secretariat because it concerns only the Central Portal

⁴² This will be reported by the Secretariat because it concerns only the Central Portal

⁴³ Date is the date of measurement, preferably on the 1st of each month

⁴⁴ usually calculated in percentage polling the website home page every minute, if there is no reply or an error message it's calculated as a downtime. Usually anything over 99.5% in a month should be acceptable

⁴⁵ The time to download the whole homepage. This measurement is affected by network connection speed

⁴⁶ Polling the website, if the homepage is slower than 1500ms (this value can be changed) the website is flagged as slow. Usually displayed as the percentage of the "not slow" requests

friendliness	23/03/2018	Bathimetry			
Page	Average duration of visit		Trend* (%)	Page Type ⁴⁸	
Home page	00:00:40		n.a.	Landing	
Viewing and downloading service	00:01:49		n.a.	Content	
QA/QC and DTM production details	00:02:04		n.a.	Content	
Web services and standards	00:00:54		n.a.	Navigation	
WMS	n.a.		n.a.	Content	
WFS	n.a.		n.a.	Content	
WMTS	n.a.		n.a.	Content	
WCS	n.a.		n.a.	Content	
EMODnet Bathymetry OWS services	n.a.		n.a.	Content	
CDI Data Discovery and Access service	00:01:38		n.a.	Navigation	
Request Status Manager (RSM)	00:00:24		n.a.	Navigation	

⁴⁷ Date is the date of measurement, preferably on the 1st of each month

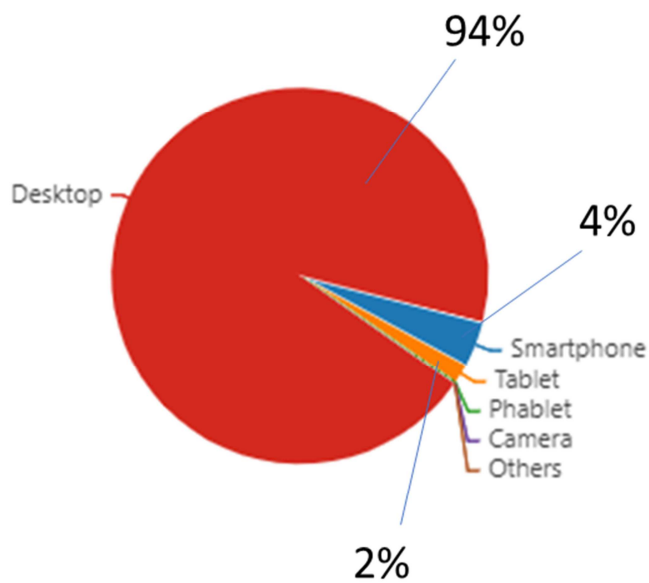
⁴⁸ Three different types of pages have been defined: content page [maps, tables, articles...], navigation page [menus, lists of links for services or other kinds of content...], landing page (see the Monitoring Support Document)

Sextant Catalogue service	00:01:09	n.a.	Navigation
Data products	00:00:37	n.a.	Content
How can I contribute?	00:00:47	n.a.	Navigation

Automatic user flow

Not yet available

Usage of the portals on different devices



Visual harmonisation score

7.2 Visual Harmonisation score	<i>Date</i>	<i>Portal</i>	<i>Visual harmonization score</i>
	13/03/2018	Bathymetry	72

Harmonisation elements		Description	Score ⁴⁹ (3 1 0)	Trend (+ - =)
Logo usage		<i>subtotal</i>	12/12	
	<i>Logo position</i>		3	(+ - =)
	<i>Logo type</i>		3	
	<i>Logo size</i>		3	
	<i>Logo url</i>		3	
Font usage		<i>subtotal</i>	15/15	
	<i>Font type</i>		3	(+ - =)
	<i>Font usage (capital letters, etc.)</i>		3	
	<i>Font spacing</i>		3	
	<i>Font colour</i>		3	
	<i>Font justification</i>		3	
Webportal header		<i>subtotal</i>	16/21	
	<i>Pattern usage</i>		3	
	<i>Header size</i>		3	
	<i>Search box</i>		3	
	<i>Contact Us button</i>	<i>Better if "Contact us"</i>	1	
	<i>Submit Data button</i>		3	
	<i>Favicon</i>		0	
	<i>Stripline colour</i>		3	
Footer structure		<i>subtotal</i>	17/21	(+ - =)
	<i>Footer size</i>		3	
	<i>Footer elements</i>	<i>Submit data should be added</i>	1	

⁴⁹ Compliant with the visual guidelines (3pt), Not completely compliant with the visual guidelines (1pt), Not compliant (0 pt)

	<i>Footer visuals</i>		3	
	<i>EC Acknowledgment</i>		3	
	<i>EC flag</i>	<i>Wrong flag</i>	1	
	<i>Link to social media</i>		3	
	<i>Social Media icons</i>		3	
<i>Policy Privacy</i>		<i>subtotal</i>	3/6	(+ - =)
	<i>Presence</i>		3	
	<i>GDPR compliant</i>	<i>Yes/No</i>		
<i>Main menu</i>		<i>subtotal</i>	6/12	(+ - =)
	<i>User experience</i>		3	
	<i>Sub menu</i>		0	
	<i>Menu terminology</i>	<i>tabs</i>	0	
	<i>Menu size</i>		3	
<i>Responsive</i>			3/3	

1.11. Indicator 8.1: Interfaces to access or view data

Template: Portals are asked to fill in three tables, one for Data, one for External Data Products and one for EMODnet Data Products

8.1.1 List of interfaces	DATA	Date	Portal		
		31/03/2018	Bathymetry		
	Manual download	Map viewer	WCS	WFS	...

Bathymetry CDI Data Discovery and Access service	YES	YES	NO	YES	
---	-----	-----	----	-----	--

8.1.2 List of interfaces	External DATA PRODUCTS	Date	Portal		
	Manual download	Map viewer	WCS	WFS	...
Bathymetry Sextant Catalogue	NO	YES	NO	YES	

8.1.3 List of interfaces	EMODnet DATA PRODUCTS	Date	Portal		
	Manual download	Map viewer	WCS	WFS	...
Bathymetry Bathymetry Viewing and Download service	YES	YES	YES	YES	

1.12. Indicator 8.2: Usage of data and data products per interface and per theme

We can only fill in the first column with number of downloads (if applicable). Use of web services needs to be monitored by MATOMO or alternative and is not yet solved by EMODnet Central Technical team.

8.2 DATA	Date ⁵⁰		Portal ⁵¹		Redundancy ⁵²		Use of WMS for map viewer? ⁵³	
		31/03/2018		Bathymetry				YES
CDI Data Discovery and Access service	Downloadable Volume ⁵⁴	trend ⁵⁵	Number of manual downloads	trend	Number of WMS requests	trend	Number of map visualisations	trend
Bathymetry	27066 CDIs	+0.7 %	1170 CDIs	+138 %	? see remark		? see remark	

8.2 EMODnet DATA PRODUCTS	Date ⁵⁶		Portal ⁵⁷		Redundancy ⁵⁸		Use of WMS for map viewer? ⁵⁹	
		30/3/2018		Bathymetry				If the portal uses WMS for the map view, answer “yes” here

⁵⁰ Date is the date of measurement, preferably on the 1st of each month

⁵¹ Portal is the portal’s name

⁵² Redundancy notifies if some downloads are counted twice in the table. For example, one download could cover several themes and be counted in each of the themes.

⁵³ Use of WMS for map viewer: expected answer: yes or no. If yes, then map visualisations will be reported twice in the table. Once in “Number of map visualisations” counted with analytics, and once in “Number of WMS requests” counted with logs. The “Number of WMS requests” should be much larger than “the number of map visualisations”, because one map visualisation can generate many WMS requests.

⁵⁴ Downloadable Volume can be different from data volume reported in Indicator 1. The unit to measure downloadable volume should relate to the unit of downloads, so that one can expect more downloads when the downloadable volume increases. The ratio between “number of downloads” and “downloadable volume” should give an indication of the popularity of a theme or sea basin.

⁵⁵ Trend compares the result with previous period. There should be as many columns as services allowing to use data (not data products).

⁵⁶ Date is the date of measurement, preferably on the 1st of each month

⁵⁷ Portal is the portal’s name

⁵⁸ Redundancy notifies if some downloads are counted twice in the table. For example, one download could cover several themes and be counted in each of the themes.

⁵⁹ Use of WMS for map viewer: expected answer: yes or no. If yes, then map visualisations will be reported twice in the table. Once in “Number of map visualisations” counted with analytics, and once in “Number of WMS requests” counted with logs. The “Number of WMS requests” should be much larger than “the number of map visualisations”, because one map visualisation can generate many WMS requests.

Bathymetry Viewing and Download service	Downloadable Volume ⁶⁰	trend ⁶¹	Number of manual downloads	trend	Number of WMS requests	trend	Number of map visualisations	trend
Bathymetry	16 tiles in multiple formats	0	12473	+16%	?	?	?	?

1.13. Indicator 9: Distribution of users that have used the portal's data and data products per organisations type and country, and their main use cases.

Template:

Date	Portal	Interfaces ⁶²	Means of information collection	Number of users giving information ⁶³	Total number of users ⁶⁴
31/03/2018	Bathymetry	Data – CDI service	Registration as part of shopping mechanism	13	13
Organization type ⁶⁵	% of users	Main use cases and application areas ⁶⁶			
Company	54%	<ul style="list-style-type: none"> Working on a project for the French space agency that 			

⁶⁰ Downloadable Volume can be different from data volume reported in Indicator 1. The unit to measure downloadable volume should relate to the unit of downloads, so that one can expect more downloads when the downloadable volume increases. The ratio between “number of downloads” and “downloadable volume” should give an indication of the popularity of a theme or sea basin.

⁶¹ Trend compares the result with previous period. There should be as many columns as services allowing to use data (not data products).

⁶² Interfaces: Which portal interfaces are concerned by the table statistics: the map viewer? The data download service? Some interfaces like web-services are not well suited for user information gathering and can be reported in a separate table.

⁶³ Relevant to portal where the user form is optional

⁶⁴ Useful to know the robustness of the statistics.

⁶⁵ A list of organisation types is available in the Glossary.

⁶⁶ Compile a bullet-point list of use cases from user form or oral feedback. A few words per use-case suffice. These use cases can be repeated in each interface table.

		<p>aims at improving the bathymetry for tidal models, to reduce tidal correction errors for satellite altimetry applications. For this project, we are looking at relatively recent datasets that could help us improve the bathymetry, in particular in the European seas.</p> <ul style="list-style-type: none"> • Need these data to interpret acoustic data that we recorded, more specifically to use some acoustic propagation modelisations in the area of Raz Blanchard/Cotentin/Cherbourg • Mapping seabed sediment in the North Atlantic • Mapping Sediment in Fjords • Modelling study for a new Tunnel (Östlig Förbindelse) in Stockholm • To get detailed Bathymetry data for Environmental Studies
Research	46%	<ul style="list-style-type: none"> • Bathymetry data needed for the purpose of archaeological models • Data required for academic research • Working on a Master Thesis dedicated to optimizing the design of Marine Protected Areas in Algarve (Portugal). Therefore I would like to have access to data related to the marine environment. • Want this data set to complement a bathymetry compilation of the Algarve margins • Want to use the bathymetry data along the coastline of Liberia to assess its vulnerability to Sea Level Rise. This is a topic for my Master's thesis

EMODnet USER FORM

Compulsory fields for all portals:

- **Organisation type (dropdown)**
- **Use case (free text)**
- **Email**

Portals are also encouraged to insert in their forms the field "Country". So far many of them can track the geographical provenance of the users from the IP address.

Portals need also to add a sentence with the consensus for the Privacy Policy. The Data

1.14. Indicator 10.1: External products (websites, apps,...) built on top of web-services

There is no registration for what purpose users are using the downloaded DTM tiles. However generally speaking bathymetry is an important parameter for many applications. Detailed and accurate mapping of the seabed and shallow sub-seabed environment is important for a large number of research, policy, and commercial groups. In particular, the acquisition of swath bathymetry data has become a fundamental dataset for multiple scientific disciplines including physical oceanography, marine geology, and benthic ecology. High-resolution bathymetry data provides an opportunity to characterize the processes which formed and actively govern the physical seabed environment, as well as to provide the necessary boundary conditions for numerical modellers to investigate both active (e.g. oceanographic) and past (e.g. glacial) environmental phenomena. The bathymetry data are also highly complementary to seismic and high-resolution subbottom profiler data, together providing a 3-D characterization of the shallow sub-seabed environment.

Bathymetry is also an important parameter next to geological and geophysical parameters for companies involved in the planning and construction of offshore windmill farms which need high resolution geophysical and soil information for calculating the stability of the sea bed conditions. The dredging industry needs high resolution bathymetric, geophysical and soil information of the seabed for quantity and quality of the resources and the presence of obstacles in the sea bed for i.e. deepening and widening of shipping routes, beach nourishment and coastal extensions. The oil- and gas industry needs, besides 3D-multichannel seismics for oil- and gas exploration, bathymetric and geophysical information for the stability of platforms and planning of pipeline routes. Companies involved with ecological issues for the determination of habitats in the offshore, need images collected with side scan sonar and multibeam for morphological and characterization of the sea bed.

We have no knowledge or information to complete the table below.

Template:

10.1 Organisations who built on top of EMODnet web-services	<i>Date</i>	<i>Portal</i>		
	Type	Country	Web-service type	Link to product or short description of usage
Organisation 1				

Organisation 2				
Organisation 3				
...				

1.15. Indicator 10.2: Published use cases and number of readings

Template:

10.2 Published use cases and number of readings	<i>Date</i>	<i>Portal</i>	
Use case title	Release date	Number of views in reporting period	Appears in Central Portal
SYMPHONY' AND MARINE SPATIAL PLANNING IN SWEDISH GEOLOGY	n.a.	26	✓
EMODnet bathymetry data supporting IMDC consultants in tackling water-related issues	n.a.	55	✓
Enhancing marine topographical data discovery and access in the North Atlantic	n.a.	12	✓
Improving storm surge modelling in the North Sea	n.a.	25	✓

1.16. Bonus Indicator: List of known publications using EMODnet data or products

Template:

Bonus Indicator: Known publications	<i>Date</i>	<i>Portal</i>		
	29/03/2018	Bathymetry		
Date of publication	Journal, conference...	Title	Authors	Organization (first author)
14/01/2018	Journal	AMM15: a new high-resolution NEMO configuration for operational simulation of the European north-west shelf	JA Graham, E O'Dea, J Holt, J Polton et al.	Met Office, UK
01/01/2018	Journal	Rheological considerations for the modelling of submarine sliding at Rockall Bank, NE Atlantic Ocean	DM Salmanidou, A Georgiopoulou, S Guillas et al.	University College London, UK
08/02/2018	Journal	Massive Mn carbonate formation in the Landsort Deep (Baltic Sea): Hydrographic conditions, temporal succession, and Mn budget calculations	K Häusler, O Dellwig, B Schnetger, P Feldens, T Leipe et al.	Leibniz Institute for Baltic Sea Research, DE
2018	Book section	The Nippon Foundation—GEBCO Seabed 2030 Project: The Quest to See the World's Oceans Completely Mapped by 2030	L Mayer, M Jakobsson, G Allen, B Dorschel, R Falconer et al.	Center for Coastal and Ocean Mapping, USA
14/02/2018	Conference	Submarine canyons and	D Amblas, S Ceramicola, TP	Scott Polar Research

		gullies	Gerber, M Canals et al.	Institute, UK
18/01/2018	Journal	Scientific Seabed Mapping: Challenges of a Sustainable Data & Metadata Management on a National Level	P Wintersteller, R Krockner, A Schäfer, R Koppe et al.	Marum, Universität Bremen, DE
12/01/2018	Journal	Evidence of the Zanclean megaflood in the eastern Mediterranean Basin	A Micallef, A Camerlenghi, D Garcia-Castellanos et al.	Marine Geology and Seafloor Surveying, Departement of Geosciences, Malta
2018	Book section	Absolute marine gravimetry with matter-wave interferometry	Y Bidet, N Zahzam, C Blanchard, A Bonnin et al.	ONERA, The French Aerospace Lab, FR
01/04/2018	Journal	Geophysics of the Black Sea Basin	E Vespremeanu, M Golumbeanu	Faculty of Geography, University of Bucharest, RO
01/08/2018	Journal	Source characterisation by mixing long-running tsunami wave numerical simulations and historical observations within a metamodel-aided ABC setting	J Rohmer, M Rousseau, A Lemoine, R Pedreros et al.	BRGM, FR
01/02/2018	Journal	The complexities and challenges of conserving common whelk (<i>Buccinum undatum</i> L.) fishery resources: Spatio-temporal	JA Emmerson, JA Haig, ISM Bloor, MJ Kaiser	School of Ocean Sciences, University Bangor, UK

		study of variable population demographics ...		
22/01/2018	Journal	Tidal dynamics in the inter-connected Mediterranean, Marmara, Black and Azov seas	C Ferrarin, D Bellafore, G Sannino, M Bajo et al.	National Research Council of Italy, ISMAR, IT
01/05/2018	Journal	Constraints on the structure of the crust and lithosphere beneath the Azores Islands from teleseismic receiver functions	K Spieker, S Rondenay, R Ramalho et al.	Institute of Geophysics and Geology, University Leipzig, DE
23/01/2018	Journal	A synthetic map of the north-west European Shelf sedimentary environment for applications in marine science	R Carlucci, G Cipriano, C Paoli, P Ricci et al.	Deaprtement of Biology, University of Bari Aldo Moro, IT
09/03/2018	Journal	Using the FACE-IT portal and workflow engine for operational food quality prediction and assessment: An application to mussel farms monitoring in the Bay of Napoli ...	RJ Wilson, DC Speirs, A Sabatino et al.	Department of Mathematics and Statistics, University of Strathclyde, UK
03/01/2018	Journal	The UKC2 regional coupled environmental prediction system	R Montella, A Brizius, D Di Luccio, C Porter et al.	Department of Science and Technologies, University of Napoli Parthenope, IT
09/03/2018	Journal	Three-	HW Lewis, JMC	Met Office, UK

		dimensional modeling of Mount Etna volcano: volume assessment, trend of eruption rates and geodynamic significance	Sanchez, J Graham et al.	
01/05/2018	Journal	Sediment failures within the Peach Slide (Barra Fan, NE Atlantic Ocean) and relation to the history of the British-Irish Ice Sheet	G Barreca, S Branca, C Monaco	Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Sezione di Scienze della Terra, Università di Catania, IT
23/12/2018	Journal	A critical review of potential tsunamigenic sources as first step towards the tsunami hazard assessment for the Napoli Gulf (Southern Italy) highly populated area	MJ Owen, MA Maslin, SJ Day, D Long	Department of Geography, University College London, UK
14/01/2018	Journal	A synthetic map of the north-west European Shelf sedimentary environment for applications in marine science	I Alberico, F Budillon, D Casalbore, V Di Fiore et al.	Istituto per l'Ambiente Marino Costiero, IAMC-CNR, IT