EMODnet Thematic Lot n° 06 – Physics

EMODnet Phase 2 – Annual (interim) report

Reporting Period: 24/07/2013 – 23/07/2014

Date: 11/07/2014

1. Highlights in this reporting period

Provide a 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. [Provide a bullet list]

- *Meetings with ROOSs representatives to engage community and empower infrastructure*
- *EMODnet Workshop in Iceland + Meeting with ARTIC ROOS*
- *Working on of the EMODnet-EuroGOOS HF Radar coordination Group*
- *Agreement between EMODnet Physics and IODE/ODP to enable data provided from EMODnet Physics to the ODP to be made available to the WMO Information System (WIS).*
- *Identification of validated historical datasets and metadata*
- *Release of the new landing portal*
- *Development of the portal (map page, interoperability features)*
- *Monthly-average data product available via both platform- product-page and interoperability service*

2. Summary of the work done

Provide a summary of the work done and an overview of the main tasks which remain to be done.

The EMODnet Physics portal should provide access to near real-time data and historical time series and datasets on physical conditions (wave height and period, temperature of the water column, wind speed and direction, salinity of the water column, horizontal velocity of water column, water clarity (light attenuation), changes in sea-level, ice cover) of the European Sea basins, as monitored by fixed platforms, ferrybox, ARGO, gliders etc.

The portal should also allow public access and viewing of data, metadata and data products 24/7, as well as provide data and interoperate with other EMODnet projects.

The contract formally started 24th July 2013 and during the first year of activities the consortium worked on:

- Consolidating a closer connection with data originators and Regional assembly centers
- Improving and empowering the data flow infrastructure
- Supporting data originators with metadata description and harmonization
- Updating the existing data and metadata products and access to the data, metadata and data products already offered the portal
- Adding new fixed stations in the portal
- Improving the accessing, discovering, plotting and downloading features of the portal
- Developing new interoperability features
- Developing basic monthly products and making them accessible via both the portal and interoperability services
- inclusion of Argo, gliders, drifters
- Collaborating with IODE/ODP to enable data provided from EMODnet Physics to the ODP to be made available to the WMO Information System (WIS)
- Improving and optimizing the backoffice infrastructure and services to keep the portal operational 24/7
- Setting up a HF radar coordination group for start making HFR data harmonized.
- Development of Open-ID credentials management for data access

Furthermore the EMODnet Physics portal was renovated, and the landing page as well as the map and services pages were re-designed.

EMODnet Physics is already operational, anyhow it needs continuous updates and improvements, so then during next phase (and for the whole project duration) the consortium will keep working on most of the listed activity. In parallel it will also work on:
- Ice data inclusion
- Development of new data products (with a focus on coastal areas)

The EMODnet Physics portal is collaborating with and integrating the two major European marine data infrastructures:

- The EuroGOOS ROOSs[1] (Regional Ocean Observing System) organized via the MyOcean[2] (MyO) for the access to in situ, near real-time data and
- The NODCs (National Oceanographic Data Center) network organized under the SeaDataNet[3] (SDN) for the access to the delayed-mode data

The EMODnet Physics approach was to develop on existing infrastructures adding high level services, features and functionalities and without duplicating services or adding complexity.

The EMODnet Physics is providing free and open access to latest 60 days of near real time data to any user (anonymous access – the system is tracking basic access info such as IP, time, data and which data was accessed) and it is presenting the full dataset availability for each platform. If a user wants to access data older than 60 days he needs credentials: if data is accessible via the EuroGOOS ROOSs infrastructure he has to provide his "myocean/roos" ID (the possibility to access these data via one of major OpenID credentials – e.g. facebook, Twitter, etc. - is under development); if data is available via the NODCs infrastructure the user is requested to login to the SeaDataNet Request Status Manager (RSM) system to send a data request.

During last year the collaboration with the EuroGOOS ROOSs was improved and consolidated and so it was possible to improve the quantity and quality of near real time data availability: when the present contract started the EMODnet Physical Parameters pilot portal was providing access to near real time data from 441 fixed platforms (mooring - MO) and 3 ferryboxes (FB) distributed as follow:

Table 1 – platforms available in June 2013

Platform	Arctic Sea, Barents Sea, Greenland Sea, Norwegian Sea	Baltic Sea	Black Sea	Celtic Seas, Bay of Biscay and Iberian Coast	Mediterranean Sea	North Sea
MO	3	94	1	157	60	126
FB		1		2		

Where the available parameters time series datasets were (note: a platform can provide either one or more parameters time series):

[1] www.eurogoos.eu
[2] www.myocean.eu
[3] www.seadatanet.org

Table 2 – parameters data time series available in June 2013

	Wave & Winds	Temp.	Salinity	Currents	Light Attenuation	Sea Level	Atmospheric	Others	Chemical	
Artic, Barents, Greenland, Norwegian Sea	0	1	1	0	0	5	0	1	0	8
Baltic Sea	13	17	10	4	1	98	5	0	10	158
Black Sea	0	2	1	0	0	2	0	0	1	6
Global Ocean	5	7	2	1	0	8	2	4	3	32
Atlantic/Bay of Biscay/Celtic Sea	44	53	21	11	2	100	16	4	27	278
Mediterranean Sea	39	33	10	10	3	62	31	8	18	214
TOTAL	101	113	45	26	6	275	54	17	59	696

The portal was also providing links to NODCs registered datasets for 55 platforms.

At present the EMODnet Physics is providing access to 613 MO and 8 FB :

Table 3 – platforms available in June 2014

Platform	Arctic Sea, Barents Sea, Greenland Sea, Norwegian Sea	Baltic Sea	Black Sea	Celtic Seas, Bay of Biscay and Iberian Coast	Mediterranean Sea	North Sea	Global Oceans
MO	5	126	2	195	71	198	16
FB	1	5		2			

Table 4 – parameters data time series available in June 2014

	Wave & Winds	Temp.	Salinity	Currents	Light Attenuation	Sea Level	Atmospheric	Others	Chemical	
Artic, Barents, Greenland, Norwegian Sea	0	1	1	0	0	4	0	1	0	7
Baltic Sea	16	21	11	5	2	110	6	4	11	186
Black Sea	0	2	1	0	0	2	0	0	1	6
Global Ocean	6	7	1	0	0	6	2	3	3	28
Atlantic/Bay of Biscay/Celtic Sea	45	53	23	11	2	86	45	8	35	308
Mediterranean Sea	46	41	12	10	3	27	42	10	20	211
TOTAL	113	125	49	26	7	235	95	26	70	746

For those platforms the EMODnet Physics is providing free and open access to latest 60days data. For 562 platforms (MO) and ferryboxs, the EMODnet Physics is providing recent data time series (data older than 60days up to more than 10 years – packed in monthly files – accessible via myocean credentials) and links to NODCs registered datasets for 55 platforms (and many more have been already identified but yet to be integrated – see following sections).

As part of the EMODnet Physics dissemination activities and community engagement, two specific workshops were organized:

- The EMODnet Physics – Adriatic workshop
- The EMODnet Physics – Iceland (Artic) workshop

The workshops offered the opportunity to present and give update about the ur-EMODnet with a specific focus on the Physics lot, engage community, provide direct contacts to be able to provide and make available data and metadata, discuss about the benefit of a pan European data management and harmonized approach, etc.

In parallel, the EMODnet-EuroGOOS HF Radar coordination Group was created in order to answer the increasing need for a pan-European coordination of a such data infrastructure.

High Frequency surface wave Radar (HFR) is a mature technology for real-time monitoring of coastal dynamics and provides the adequate spatio-temporal resolution, not available with any other kind of in-situ or remote-sensing instrument. Recently many European countries have adopted HFR and being land-based it ensures continuous data access, cheaper maintenance costs and more flexibility. HFR are currently used for many applications such as circulation, oil spill, S&R, tsunami/typhoon/hurricane detection etc.

Significant heterogeneity still exists in Europe concerning technological design of observing systems, measured parameters, practices for maintenance and quality control, as well as quality standards for sensors and data exchange and in order to make HFR data ready for a pan European use.

The goal of the EMODnet-EuroGOOS HF Radar coordinating group is to start dealing with this heterogeneity and define the best practices for design, implementation, maintenance and distribution of data of coastal observing systems, as well as to support harmonization and the definition of quality procedures and standards. The group is now counting 58 people and connections to American and Australian HFR infrastructures.

Furthermore an agreement has been made between EMODnet Physics and IODE/ODP to enable data provided from EMODnet Physics to the ODP to in turn be made available to the WMO Information System (WIS)[4]. WIS provides a single coordinated global infrastructure for the collection and sharing of information in support of all WMO and related international programs.

The ODP team will provide this as a service to EMODnet Physics making available EMODnet Physics data to the international exchange of meteorological and related data and products to the entire domain of such data and products used globally.

[4] http://www.wmo.int/pages/prog/www/WIS/

3. Challenges encountered during the reporting period

Provide an overview (preferably in table format) listing and short explanation of the main challenges encountered during the reporting period and the measures taken to address them.

Already known since the end of the EMODnet Physical Parameters pilot, the inclusion and connection of historical datasets organized and validated under the SeaDataNet - NODCs network is one of the most challenging activity. Two actions were adopted and are under development

- Recommendation for and development of a unique PLATFORM ID in collaboration with the DATAMEQ[5] (if the platform WMO code is available that is the unique ID, otherwise it is the ROOS code)
- identification of historical validated datasets under the SeaDataNet network of NODCs valuable for EMODnet Physics regardless form the fact that that data is coming from an operational platform or a dismissed one

The second major challenge, still under discussion is the “single sign on” that is strictly related to the data access policy the different infrastructures apply. While the marine community is discussing about a “Marine-ID” the EMODnet Physics started working on the integration of Open-IDs (e.g. Facebook, Google+, …) to have the basic information needed to track data interested users. The functionality is under development.

[5] http://www.eurogoos.org/content/documents.asp?menu=0050000_000015_000000

4. Allocation of project resources

Please provide information about the effort (percentage of project resources) spent during the reporting period on the main objectives such as preparing and providing access to data within a country; access data from international sources; providing the data infrastructure to access and make data available across countries; develop standards (INSPIRE, EMODnet, MSFD).

Details about the effort spent during the reporting period are not available as they were not tracked specifically/always. In general 70% of the budget is allocated for providing the data infrastructure to access and make data available across countries (including dissemination - coordination actions in those areas), 15% is specifically allocated for the web portal development (landing page, map page and interoperability services), the rest is allocated for project management and coordination.

During the first year, about the 70% of the specifically allocated budget for the web portal development was spent.

5. Meetings held since last report

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

Table 5 – meetings

Meetings			
Date	Location	Topic	Short Description
24th- 26th Jun 2013	Brussels, Belgium	EMODnet Physics – phase 2 kick off meeting	
4th - 5th Jul 2013	Copenhagen, Denmark	Nineteenth meeting of Marine Observation and Data Expert Group @ EEA	
9th – 10th Sep 2013	Brussels, Belgium	DataMEQ meeting	
25th – 26th Sep 2013	Lucca, Italy	SeaDataNet annual meeting	
14th Oct 2013	Genova, Italy	Meeting with TEN-T - MONNALISA project	end users
28th 31st Oct 2013	Brussels, Belgium	GMES-PURE workshop	
18th Nov 2013	Brussels, Belgium	EMODnet workshop at DGMARE with ROOSs representatives	
19th Nov 2013	Brussels, Belgium	Meeting with JERICO WP2	
3rd – 4th Dec 2013	Split, Croatia	EMODnet workshop with Adriatic Sea Region	new providers
16th 17th Dec 2013	Brussels, Belgium	EMODnet 1st Steering Committee	
30th Jan 2014	Genova, Italy	Meeting with officers from Regione Liguria - Direzione centrale Affari legali, giuridici e legislativi - Settore Sistemi informativi e telematici regionali	
11th Feb 2014	Hamburg, Germany	Baltic Port Species Workshop in Hamburg	end users
14th Feb 2014	Malmo, Sweden	Meeting with the World Maritime University	end users
19th Feb 2014	Oostende, Belgium	WebEx meeting with ODP board	
19th – 20th Feb 2014	Oostende, Belgium	MODEG meeting	
26th – 27th Feb 2014	Brussels, Belgium	Meeting with Jerico Steering Committee	
26th 27th Mar 2014	Athens, Greece	MyOcean Annual Meeting,	1st HF Radar coordination Group meeting
02nd -05th Apr 2014	Trollfjord vessel between Bergen to Bodo Norway	In situ TAC annual meeting, Trollfjord vessel between Bergen to Bodo Norway	
17th Apr 2014		Call with INGV – EMSO project representative	new providers
5th 7th May 2014	Oslo Norway	JERICO general assembly	
4th Jun 2014	Rome, Italy	Meeting with INGV as representative for EMSO	new providers
4th - 5th Jun 2014	Rome, Italy	Meetings with Steering Committee	
10th Jun 2014	Reykjavik, Iceland	EMODnet Workshop Iceland	new providers
23rd - 26th Jun 2014	Oostende, Belgium	ODP - ETDMP-IV	
25th Jun 2014	Oostende, Belgium	EMODnet Physics - technical meeting	

Table 6 – meetings with ROOSs

Meetings with ROOSs			
Date	Location	Topic	Short Description
10th – 12th Sep 2013	Brussels, Belgium	Meeting with NOOS	
18th Nov 2013	Brussels, Belgium	Meeting with ROOSs representatives @DGMARE	
20th 21st Nov 2013	Brussels, Belgium	EuroGOOS annual meeting	
16th Dec 2013	Copenhagen, Denmark	Meeting with ARTIC	
4th – 7th Feb 2014	Athens, Greece	EuroGOOS Board Meeting	
18th Feb 2014	Brussels, Belgium	Meeting with ARTIC chair	
21st Feb 2014	Brussels, Belgium	Meeting with Black Sea	
6th March 2014	Madrid, Spain	Technical meeting with MONGOOS	
7th 8th Mar 2014	Santiago de Compostela, Spain	Meeting with IBI ROOS	
7th 8th May 2014	Santiago de Compostela, Spain	Meeting with IBI ROOS	
8th 9th May 2014	Riga, Latvia	Meeting with BOOS	
21st 23rd May 2014	Brussels, Belgium	EuroGOOS annual meeting	
28th May 2014	Lecce, Italy	Meeting with MONGOOS chair	
10th -11th Jun 2014	Reykjavik, Iceland	Meeting with Artic ROOS	

Table 7 – Dissemination events

Dissemination			
Date	Location	Topic	Short Description
17th - 20th Sep 2013	Varna, Bulgaria	MARES2020	Oral presentation
22nd 24th Sep 2013	Lucca, Italy	IMDIS2013	Oral presentation
8th – 10th Oct 2013	Hamburg, Germany	FUTOORE	Oral presentation
28th -30th Apr 2014	Wien, Austria	EGU annual meeting	Oral presentation + EMODnet Physics splinter session + 2nd HFR coordination group meeting
4th May 2014		BOOS newsletter	Article
19th May 2014	Rome, Italy	FIXO3 project,	Oral presentation
20th May 2014	la Spezia, Italy	Day of the Sea – DLTM	Oral presentation
26th 29th May 2014	Tallinn, Estonia	6th IEEE/OES Baltic Symposium 2014	Oral presentation (IEEE paper)
27th May 2014	Lecce, Italy	Safer Transport in the Mediterranean Sea	Oral presentation

6. Work package updates

WP1 – Project Management

Objective:

- to manage and to coordinate all project activities, ensuring timely delivery and high quality of results and products.

Besides the general management of the EMODnet Physics project and the fulfillment of any reporting commitment, one specific action in the WP1 is the engagement and management of the ROOSs activities to push developments at IN SITU TAC data assembly centers that have effects on the EMODnet Physics goals.

ROOSs, technical team, potential new providers and user were met and the list of the meetings represents the summary of this activities.
News and presentations are available in the landing EMODnet Physics portal and in particular:
http://www.emodnet-physics.eu/Portal/meetings
http://www.emodnet-physics.eu/Portal/news[6]

[6] Each news is also broadcasted via RSS and to an EMODnet Physics mail-list

WP2 – Data Collection, Metadata Compilation and QA/QC

Objectives:

- To implement access to data and metadata from the data sources identified in EMODnet Physics
- To identify specific additional data sources that contribute to the EMODnet physical parameters portfolio (Argo profiling floats (Euro-Argo), gliders, radar, etc)
- To arrange that identified data sources become available *via* the underlying EuroGOOS ROOSes, MyOcean, and SeaDataNet infrastructures with common metadata and data formats. Arrange the data availability from other international programmes (Euro-Argo) through MyOcean *in situ* global component
- To validate the coverage and to complete the EDIOS metadata directory and standardised station index
- To establish and give guidance on common data and metadata models for complimentary data suppliers

During the reporting period the activities were focused on extending the quantity (and quality) of fixed platforms and ferryboxes and start integrating new data sources and in particular gliders, drifting buoys and ARGO. Both data management and end-user interfaces to access metadata and data for listed platform were developed (see also WP4).

The following table shows the (about 1350) platforms that are providing parameters data time series on a daily base and that are available via the EMODnet Physics portal. Most of those platforms are also providing recent data (see Annex 1).

Table 8 – contributors and typology of provided platforms

	drifting bouys (DB)	ferrybox (FB)	gliders (GL)	fixed buoys or mooring time series (MO)	profiling floats vertical profiles (PF)	Argo Floats (AR)
AWI	0	0	0	0	0	2
BODC	0	0	0	5	0	0
BSH	0	0	0	75	0	122
CEFAS	0	0	0	0	0	0
CETMEF	2	0	0	17	0	0
CMR	0	0	0	1	0	0
CMRE	0	0	0	0	0	0
DaMSA	0	0	0	0	0	0
DELTARES	0	0	0	88	0	0
DMI	0	0	0	34	0	0
EPA	0	0	0	0	0	0
Euskalmet	0	0	0	1	0	0
FMI	0	1	0	6	0	8
HCMR	0	0	0	4	0	1

HPA	0	0	0	1	0	0
IEO	0	0	0	1	0	32
IFM	0	0	6	0	0	13
IFREMER	0	0	0	11	4	162
IMEDEA	0	0	1	0	0	0
IMR	0	0	0	0	0	7
IMS-METU	0	0	0	0	0	4
IH	0	0	0	4	0	0
INSU	0	0	3	0	0	0
IOBAS	0	0	0	1	0	6
IOPAS	0	0	0	1	0	0
IRD	0	0	0	0	0	64
ISMAR	0	0	0	7	0	0
ISPRA	0	0	0	18	0	0
KNMI	0	0	0	0	0	29
LEGMA	0	0	0	2	0	0
LOCEAN	0	0	0	0	0	5
LOV	0	0	0	0	0	28
MI	0	0	0	27	0	0
MDK	0	0	0	3	0	0
MET	0	0	0	0	0	0
MetFR	27	0	0	4	0	0
METNO	0	0	0	9	0	0
MIO	0	0	0	0	0	4
MSI	0	2	0	11	0	0
MUMM	0	0	0	11	0	0
NHS	0	0	0	0	0	0
NIB	0	0	0	1	0	0
NIMRD	0	0	0	1	0	0
NIVA	0	2	0	0	0	0
NMA	0	0	0	0	0	0
NOC/METOFFICE	0	0	0	91	11	115
NWAHEM	0	0	0	2	0	0
OGS	0	0	0	4	0	36
OILPLAT - Industry	0	0	0	7	0	0
PdE	0	0	0	46	0	0
RIKZ	0	0	0	0	0	0
SBR	0	2	0	0	0	0
SHOM	25	0	0	49	0	13
SMHI	0	1	0	28	0	0

SYKE	0	0	0	0	0	0
UAC	0	0	0	5	0	0
UKM	0	0	0	6	0	0
UKMO/MF	0	0	0	0	0	0
UPC	0	0	0	1	0	0
WSAL	0	0	0	10	0	0
WSAW	0	0	0	3	0	0
WSOB	0	0	0	1	0	0
WSOS	0	0	0	9	0	0
WSOT	0	0	0	7	0	0
TOTAL	**54**	**8**	**10**	**613**	**15**	**651**

During the reporting period the consortium worked on the integration of identified historical validated datasets under the SeaDataNet network of NODCs. The following table provides details about identified metadata that have yet to be connected to the portal:

Table 9 – providers and validated historical datasets

Data provider	number of platforms	number of datasets (CDIs)
BODC - British Oceanographic Data Centre	224	3074
ENEA Centro Ricerche Ambiente Marino - La Spezia	1	1622
HCMR/HNODC - Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre	12	5
IEO/Spanish Oceanographic Institute	9	1180
IFREMER / IDM/SISMER	113	494
UM - International Ocean Institute - Malta Operational Centre University Of Malta / Physical Oceanography Unit	1	36
TSU - Iv.Javakhishvili Tbilisi State University, Centre of Relations with UNESCO Oceanological Research Centre and GeoDNA	2	113
UHI - Marine branch of Ukrainian Hydrometeorological Institute	5	2327
MI - Marine Institute	30	46
IOBAS - National Institute of Meteorology and Hydrology, Bulgarian Academy of Sciences	6	17
OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Division of Oceanography	332	212
P.P. Shirshov Institute of Oceanology, RAS	1	40
UT- Polytechnic University of Tirana - Institute of GeoSciences, Energy, Water and Environment	1	19
Rijkswaterstaat Waterdienst	74	21
SMHI- Swedish Meteorological and Hydrological Institute	53	2244
total	864	11450

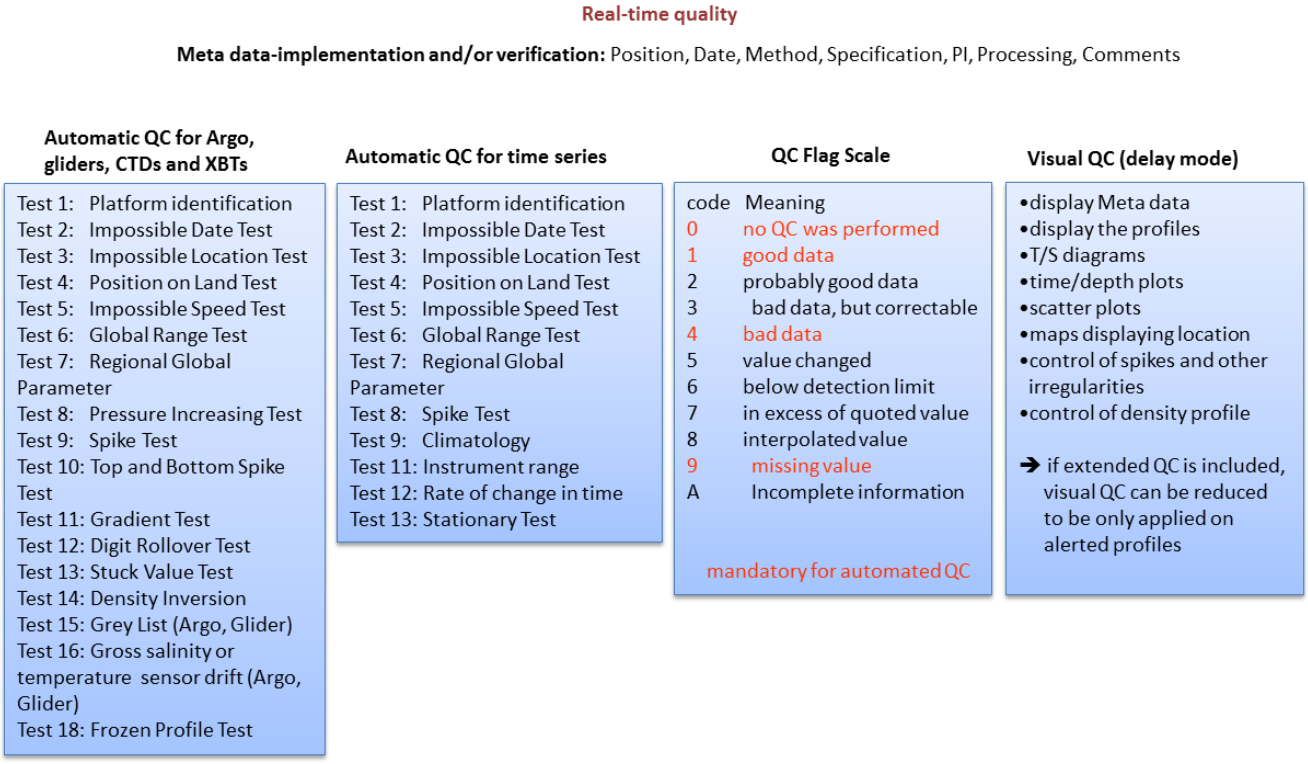
WP3 – Metadata aggregation, Data access and Data products

Objectives:

- To compile aggregated metadata with common format and quality for the EMODnet Physics portal
- To implement/create access to data sets and to compile aggregated data sets with common format and quality for the EMODnet Physics data products
- To generate products from the metadata and aggregated data sets

The EMODnet Physics adopted and supports the use of the main data formats (i.e. NetCDF and ODV) already adopted by marine community. To reach a wider end-user group the EMODnet Physics alse makes data available in csv (ASCII files).

Operational data quality is checked at provider and data assembly center level according standard and harmonized procedure as described in the following picture:



Further harmonized and standardized quality checks[7] (as defined in SeaDataNet) are then applied at NODC level before validating the historical datasets.

[7] http://www.seadatanet.org/Standards-Software/Data-Quality-Control and http://www.seadatanet.org/content/download/18414/119624/file/SeaDataNet_QC_procedures_V2_(May_2010).pdf

During the reporting period the development of three basic EMODnet Physics products was completed and fully provided via both web service for the EMODnet Central portal and EMODnet Physics end user page (see WP4). The EMODnet Physics is now providing monthly averages, max and min for some of the parameters (e.g. temperature, wave high, etc).

WP4 – Portal technical development and operation

Objectives:

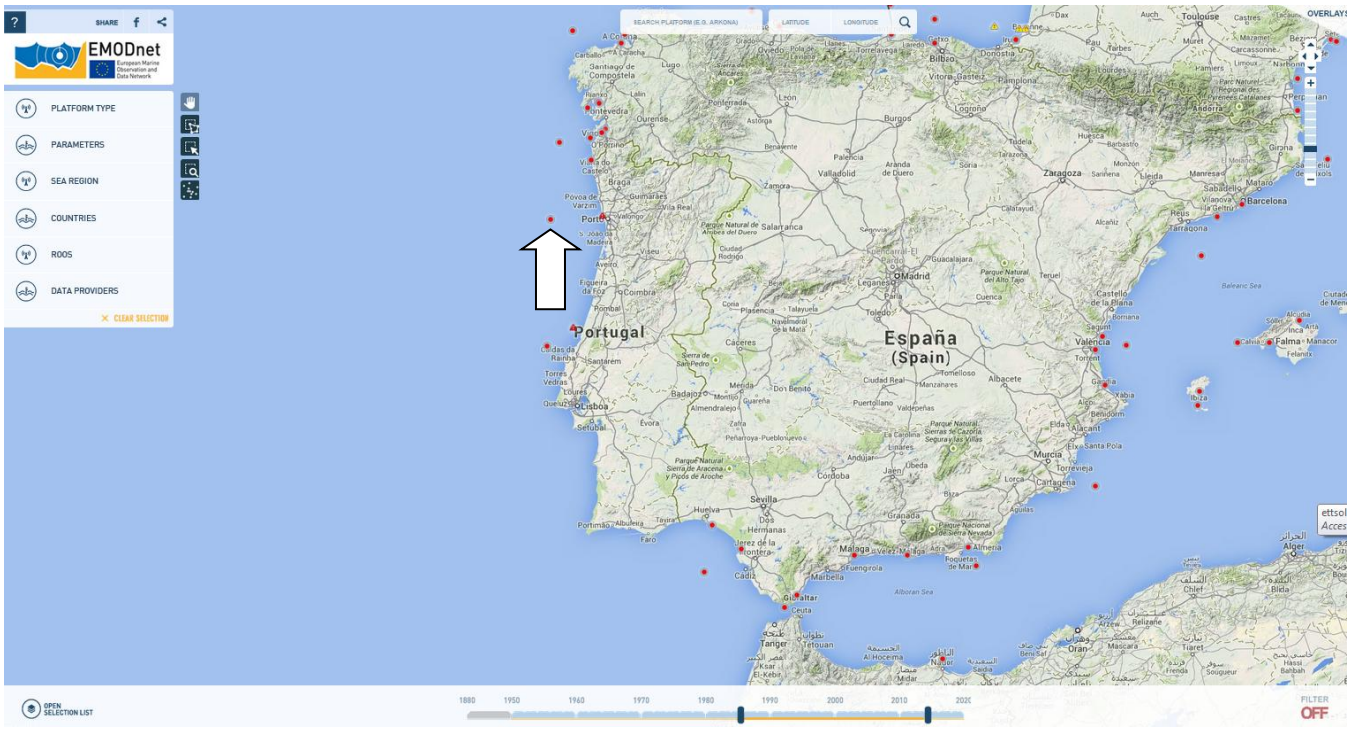
- To implement the existing EMODnet Physics website with new services
- To keep the website and portal services operational, including monitoring

The portal is available at www.emodnet-physics.eu

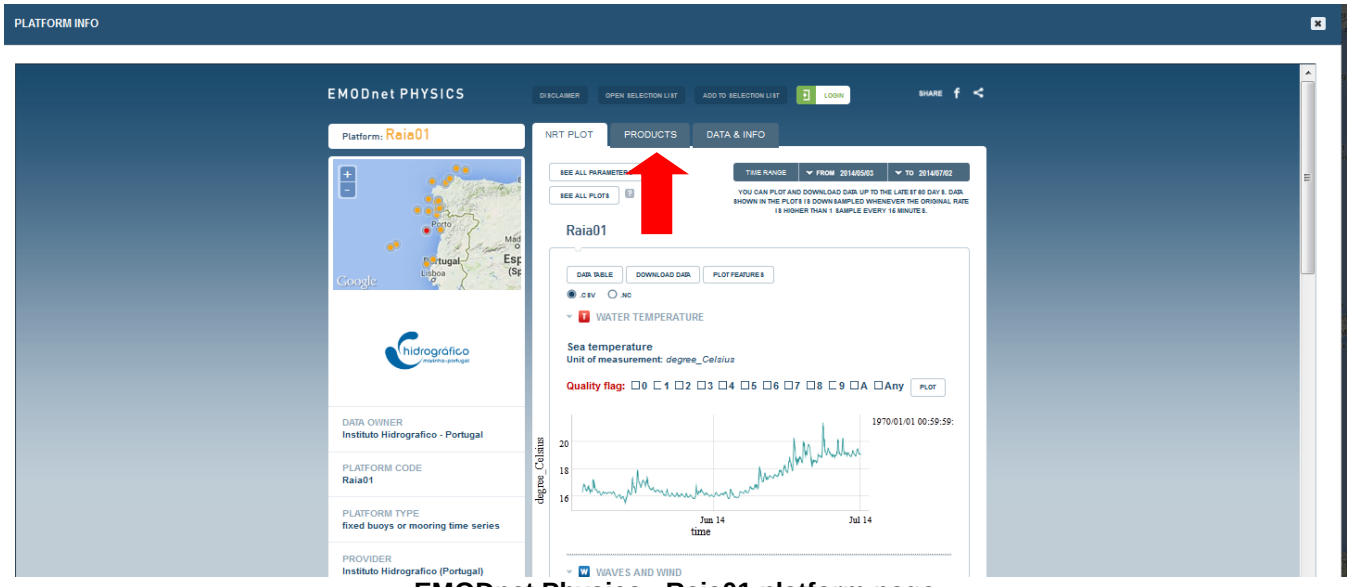
The new “landing page” provides direct links to data discover, plot and download (i.e. map page), direct links to EMODnet central, EuroGOOS, MyOcean and SeaDataNet, link to meetings page and news, background information about the ur-EMODnet, user guide and legends and give awareness and visibility to each contributor. The landing page also provides links to EMODnet Central Facebook and Twitter pages.

EMODnet Physics landing page

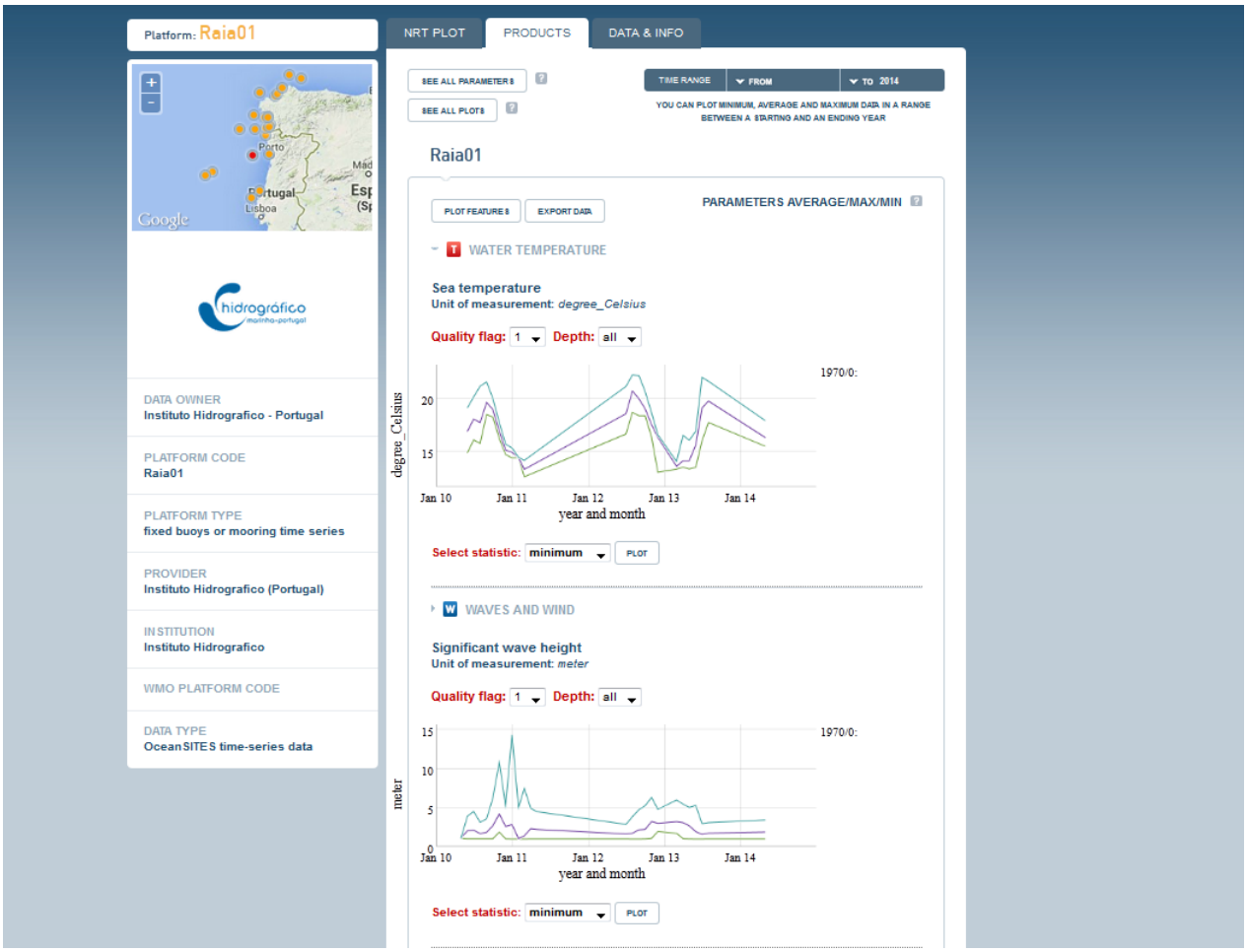
The “map page” (i.e. the operational system) and the “platform page” were re-designed in order to present and provide the platform parameters products. Now the user accesses to the map page and selects a platform, and the platform page provides a specific “products” section and the monthly average, min and max are presented. Products can be also downloaded as a csv file.



EMODnet - Physics map page



EMODnet Physics - Raia01 platform page



EMODnet Physics - Raia01 platform products page

Interoperability services for machine-to-machine interface and for supporting the EMODnet Central portal to deliver joint use-case products were developed and are available at following links:

WEB SERVICES → http://www.emodnet-physics.eu/map/Service/WSEmodnet2.aspx
→ http://www.emodnet-physics.eu/map/Service/WSEmodnet2.asmx
WMS/WFS SERVICE → http://www.emodnet-physics.eu/map/Service/DefaultWMS.aspx
WEB CATALOGUE → http://www.emodnet-physics.eu/map/Service/Catalog.aspx

WP5 – Analysis, evaluation and feedback

Objectives:

- To report on the effectiveness of the system in meeting the needs of users and other EMODnet portals
- To analyse what further steps need to be taken for improvement, expansion and sustainability
- To assess the operationality of the EMODnet Physics portal Information System; Validate the services of the portal

The meetings and the dissemination activities were fundamental events to show achieved progress and further involve both end users and providers. In general feedback was very positive, and in particular it was appreciated the easiness to access metadata and data, plot parameters, and download data. The transparency of the infrastructure that gives full visibility to data provider was particularly appreciated. The potential use of EMODnet Physics (by means of the plot features) as a platform to support a second level of data quality check and validation was also foreseen many times.

The fact that some private companies and very well-known organizations (e.g. DHI, RINA – Dappolonia, MeteoFrance) started using the EMODnet Physics services represents a major milestone for the operationality assessment.

More recently the user evaluation feedback about the Secretariat managed survey of the Physics portal was also used to plan further improvements and developments of the system.

7. User Feedback

Provide a complete record of feedback received from user (formal and informal) 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]

Table 10 – user feedback

Date	Name	Organization	Type of user feedback (*e.g. technical, case study etc)*	Response time to address user request
7th May 2014	Joaquin Del Rio Fernandez	UPC - Spain	Technical: EMODnet Physics was missing/not showing the Obsea – platform	The platform was available from the EMODnet the day after
17th April 2014		Department of Civil, Environmental and AeroSpace Engineering – University of Palermo	Link to some HF Radar meeting presentations were not working	1 day

8. 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 2 pages]

Table 11 – communication activities

Date	Media	Title	Short description and/or link to the activity
17th - 20th Sep 2013	Oral presentation	MARES2020	
22nd 24th Sep 2013	Oral presentation + youtube channel	IMDIS2013	
8th – 10th Oct 2013	Oral presentation	FUTOORE	
28th -30th Apr 2014	Oral presentation + EMODnet Physics splinter session + 2nd HFR coordination group meeting	EGU annual meeting	1) Knowledge base for growth and innovation in ocean economy: assembly and dissemination of marine data for seabed mapping - European Marine Observation Data Network - EMODnet Physics[8] 2) Unlock the potential of marine knowledge by making easier and less costly the access to real-time and archived data (public)[9]
4th May 2014	Article	BOOS newsletter	
19th May 2014	Oral presentation	FIXO3 project,	
20th May 2014	Oral presentation	Day of the Sea – DLTM	
26th 29th May 2014	Oral presentation (IEEE paper)	6th IEEE/OES Baltic Symposium 2014	
27th May 2014	Oral presentation + youtube channel	Safer Transport in the Mediterranean Sea	

[8] http://meetingorganizer.copernicus.org/EGU2014/orals/15484
[9] http://meetingorganizer.copernicus.org/EGU2014/session/16122

9. 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 EMODnet Physics portal provides data from different platforms with specific set of parameters which can be classified into different time periods:

Latest data → freely available up to 60 days (automatic quality check/flag procedures)
Recent data → older than 60 days organized

- monthly data files (automatic quality check/flag procedures[10], requires user registration)
- long term time series data files (organized one data file for platform, automatic quality check/flag procedures, requires user registration)

Historical validated data → organized in dataset files hosted by NODCs (validated data[11], requires user registration) and presented/described via CDI (common data index) metadata format.

A summary table of all the data (latest, recent, long term and validated historical) by Country, Organization, Platform type and Data availability is attached (excel file)

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).

See Indicator 1

[10] http://www.emodnet-physics.eu/map/ARH/QualityCheck/recommendations_for_rtqc_procedures_v1_2.pdf

[11] Validated according the SeaDatanet Quality Check procedure - http://www.seadatanet.org/content/download/18414/119624/file/SeaDataNet_QC_procedures_V2_%28May_2010%29.pdf

Indicator 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.

Provide a summery overview of the last 12 months.

Table 12 – approached organizations with no results (yet)

Organizations approached with no results	acronym	country	note
Hrvatski Hidrografski Institut - Hydrographic Institute of the Republic of Croatia	HHI	Croatia	The process is taking more than supposed but some progresses were achieved. We do expect that data from Croatian countries will be connected in coming reporting period
Institut za oceanografijo i ribarstvo - Institute of Oceanography and Fisheries	IZOR		
Institute of Oceanographyc Research	IOR		
University of Zagreb	UNIZG		
Drzavni hidrometeoroloski zavod - Meteorological and Hydrological Service	DHMZ		
ministarstvo obrane Republike Hrvatske - Ministry of Defence of the Republic of Croatia	MORH		
Ruder Boskovic Institute	IRB		
Marine Safety Department	MNE		
Institut za biologiju mora - Institute of Marine Biology	IBMK	Montenegro	They only provide historical validated datasets (already available at the NODC and via SeaDataNet – not yet connected to EMODnet Physics)
Marine Hydrophysical Institute Ukraine	MHI	Ukraine	they need more time to identify the proper procedure and agreements to be able to share data
Shirshov Institute of Oceanology of Russian Academy of	SIO-RAS	Russia	They need a

Sciences			formal international agreement between ministries
Tiblisy State University	TSU	Georgia	they need more time to identify the proper procedure and agreements to be able to share data
Technical University, Institute of Marine Sciences - Turkey	IMS-METU	Turkey	The institute manage many tide gauges – they need more time to identify the proper procedure and agreements to be able to share data

Furthermore the EMODnet Secretariat created the connection with the Institute Ruđer Bošković in Zagreb (Croatia) but after the preliminary contact we did not receive any feedback (from them).

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

The following table reports the number and typology of the data request, to note that each request may consist of one parameter for a specific platform as well as all the available parameters for all the available platforms (i.e. the actual volume of downloaded data is much higher – see also indicator 5)

Table 13 – data downloads by time range and per country

Country	Data request		
	Latest	Recent	Web Service (only latest)
Australia	0	0	1
Austria	1	0	0
Belarus	0	0	1
Belgium	20	6	264
Brazil	0	0	1
Canada	0	0	3
China	0	0	23
Croatia	1	0	2
Denmark	2	0	0
Estonia	6	4	0
France	22	0	7
Germany	31	178	13
Greece	7	0	0
Iceland	1	0	1
India	0	0	2
Ireland	0	0	7
Italy	65	94	62
Republic of Korea	0	0	2
Latvia	0	0	28
Lithuania	1	0	0
Malta	2	0	0
N.D.	13	58	6
Netherlands	11	0	78
Norway	2	0	10
Poland	10	1	3
Portugal	1	0	3
Reserved	2	0	2
Romania	4	0	0
Russian Federation	11	59	36
Seychelles	0	0	1

Spain	14	2	4
Sweden	7	1	2
Switzerland	6	1	0
Turkey	7	3	0
Ukraine	0	0	11
United Kingdom	31	17	12
United States	4	1	534
Venezuela	0	0	1
Vietnam	0	0	1

The monthly average, max and min products were published very recently therefore no statistics are available yet.

Indicator 5 -Organisations that have downloaded each data type

Given the limited integration of CDIs under the EMODnet Physics direct downloads are virtually not existing. Users downloaded from the EMODnet Physics portal both latest (60days) and recent data (older than one month up ten years old), as well as more and more users are starting connecting to the webservices for daily data.

Table 14 – recent data downloads by country

Country	Recent data requests
Belgium	2
Estonia	4
Germany	178
Italy	76
N.D.	51
Poland	1
Russian Federation	59
Spain	2
Switzerland	1
Turkey	3
United Kingdom	17

The table above reports the number of the requests for data older than 60days for the period January to June 2014. To note that some platforms provide data for past 10 years (see Annex I), some others for a few years. The reported number only indicates how many data requests have been received and each data request could be for one specific dataset (e.g. a month) of one platform or for the full data availability (all platforms any available data).

Table 15 – data downloads by country

Country	Artic, Barents, Greenland, Norwegian Sea	Baltic Sea	Black Sea	Global Ocean	Atlantic, Bay of Biscay, Celtic Sea	Mediterranean Sea	North Sea	All the Sea Basins
Austria	0	0	0	0	0	1	0	0
Belgium	10	214	7	186	259	141	405	4
China	0	0	0	10	0	0	0	0
Croatia	0	0	0	0	1	0	0	0
Denmark	0	1	0	0	0	1	0	0
Estonia	0	12	0	0	0	0	0	3
Europe	0	0	1	1	2	0	0	1
France	0	1	0	0	10	3	8	0
Germany	1	94	0	9	60	22	206	0
Greece	0	0	0	0	0	7	0	0
Iceland	0	0	0	0	1	0	0	0
Italy	6	398	8	24	540	482	823	14
Latvia	0	0	2	10	0	0	0	0
Lithuania	0	1	0	0	0	0	0	0
Malta	0	0	0	0	0	2	0	0
N.D.	4	80	0	1	3	50	79	7
Netherlands	0	2	4	35	1	0	8	0
Norway	0	0	0	3	1	0	0	1
Poland	0	116	0	0	0	0	25	1
Portugal	0	0	0	0	1	0	0	0
Reserved	0	36	0	0	0	0	0	1
Romania	0	0	4	0	0	0	0	0
Russian Federation	2	62	6	10	0	0	1	0
Spain	0	0	0	1	7	4	3	1
Sweden	0	7	0	2	0	0	1	0
Switzerland	10	210	4	58	261	138	286	0
Turkey	0	0	0	0	0	10	0	0
United Kingdom	0	0	0	5	25	0	22	0
United States	0	2	25	171	3	0	0	0

The previous table reports info about which Country downloaded what sea Basins data. The table reports the number of requests. The following table is reporting the most downloaded platforms (since the service was published, i.e. November 2013).

Table 16 – most downloaded platforms

Platform	Download	Web service	Total
41702	0	259	259
13130	4	138	142
Oostende	19	51	70
61417	57	0	57
61001	51	0	51
6901962	0	37	37
Arkona	29	0	29
62170	27	0	27
61198	24	0	24
Akkaert	11	12	23
LASPEZIA-61219	22	0	22
VENEZIA-61220	21	0	21
ATHOS	20	0	20
61002	19	0	19
62069	19	0	19
ANCONA-61218	19	0	19
Tallinn	19	0	19
Elbe	18	0	18
StPetersburg	18	0	18
VlaktevdRaan	14	4	18
Knollsgrund	17	0	17
Deurlo	13	4	17
HuvudskarOst	17	0	17
Kronstadt	17	0	17
ScheurOost	13	4	17
Kungsholmsfort	16	0	16
62304	16	0	16
Brouwershavensegat	16	0	16
CROTONE-61210	16	0	16

The complete list is attached as excel file – Annex 2

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

Provide include information about how long the user spent on the website (residence time) and on which page the user quits their visit, or how they navigated the site.

Table 17 – Monthly views as reported by Google Analytics – landing page

Portal	Visits	Residence time (average)	Page views	New visitors	New visitors %
June 2013	325	03:51	740	190	58%
July 2013	284	02:01	466	185	65%
August 2013	242	02:26	486	143	59%
September 2013	280	01:29	458	192	69%
October 2013	385	02:21	783	270	70%
November 2013	355	02:26	688	260	73%
December 2013	311	02:42	658	211	68%
January 2014	272	01:57	505	166	61%
February 2014	377	04:00	1007	191	50%
March 2014	342	02:06	686	191	56%
April 2014 (1^{st}-18^{th})*	210	02:35	465	115	55%
April 2014 (18^{th}-30^{th})	124	06:38	627	64	51%
May 2014	579	05:33	2014	191	33%
June 2014	282	03:49	685	155	57%

(*) 18^{th} April the new EMODnet Physics landing portal was published

Table 18 – Monthly views as reported by Google Analytics – map page

Map Page	Visits	Residence time (average)	Page views	New visitors	new visitors %
November 2013	247	09:41	1210	42	17%
December 2013	263	11:37	1520	55	21%
January 2014	345	10:20	1671	38	11%
February 2014	426	08:38	2031	130	31%
March 2014	502	06:29	2005	176	35%
April 2014	440	06:27	1452	162	36%
May 2014	582	05:32	2040	193	33%
June 2014	534	05:37	2102	188	39%

(map page was not monitored before November)

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.)

Note from the Secretariat: Thematic lots, which are able to report on this indicator, are invited to provide as much information as possible and indicate how they obtain this information. For those portals who currently have no means of obtaining this information, the Steering Committee Ad Hoc Technical Working Group will consider the matter and provide recommendations to the portals on possible modalities to report on this indicator.

Most of the users are using data for model assimilation and forecast, validation and reanalysis (e.g. MeteoFrance, Deltares, DLMT, DHI (commercial), and RINA – Dappolonia (commercial))

EMSA is using data (WFS+Web Services) for operational purpose (e.g. R&S).

The information was directly asked during meetings/events

10. Additional User Statistics

Please provide an overview of all user-statistics for your website and portal which have not been already provided in the section on progress indicators.

Annex 1 – full list of the available platforms and typology of datasets

The table lists the full data availability, in particular it lists the typology of platform (MO= mooring buoy/fixed platform; FB=ferrybox, GL=glider, AR=ARGO, PF=Profiler), whether it is operational and provides data on daily base (NRT on/off), recent data time coverage (from to) and number of files (if the first number is lower than the second there are temporal gaps in the monthly data files; if the first number is higher than the second the platform hosts different data acquisition sets – e.g. Arkona), long term time series files (from to), if there are historical validated data for that platform (CDI) in SeaDataNet-NODCs network.

➔ EMODnetPhysics_Annual.Report_Annex.xls

Annex 2 – downloaded platforms

➔ EMODnetPhysics_Annual.Report_Annex.xls

Annex 3 – Acronyms

Table 19 – organizations acronym

AWI	AWI - The Alfred Wegener Institute
BODC	BODC - British Oceanographic Data Centre
BSH	BSH - Bundesamt für Seeschifffahrt und Hydrographie - Germany
CEFAS	CEFAS - Centre for Environment, Fisheries & Aquaculture Science - UK
CETMEF	CETMEF - Centre d'etudes techniques maritimes et fluviales - France
CMRE	CMRE - Centre for Maritime Research and Experimentation
DaMSA	DaMSA - Danish Maritime Safety Administration - Denmark
DELTARES	Deltares - Nederland
DMI	DMI - Danmarks Meteorologiske Institut - Denmark
EPA	EPA - Environmental Protection Agency, Department of Marine Research - Lithuania
Euskalmet	Euskalmet- Basque Goverment - Spain
FMI	FMI - Finnish Meteorological Institute - Finland
HCMR	HCMR - Hellenic Centre for Marine Research - Greece
IEO	IEO - Instituto Espanol de Oceanografia - Spain
IFM	IFM - Institute of Oceanography, University of Hamburg
IFREMER	IFREMER - Institute Francais de Recherche pour l'Exploitation de la Mer - France
IMEDEA	IMEDEA - Mediterranean Institute for Advanced Studies
IMR	IMR - Institute of Marine Research in Norway
IMS-METU	IMSMETU - Middle East Technical University - Institute of Marine Sciences
Instituto Hidrografico	Instituto Hidrografico - Portugal
INSU	INSU - Institut National des Sciences de l'Univers
IOBAS	IOBAS - Institude of Oceanology - Bulgarian Academy of Science - Bulgaria
IRD	IRD - L'Institut de recherche pour le développement - France
ISMAR	ISMAR - Istituto di Scienze Marine - Italy
ISPRA	ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale - Italy
KNMI	KNMI - Koninklijk Nederlands Meteorolologisch Instituut - Netherlands
LEGMA	LEGMA - Latvian Environment, Geology and Meteorology Agency - Latvia
LOCEAN	LOCEAN - Laboratoire d'Oceanographie et du Climat
LOV	LOV - Laboratoire Oceanographique de Villefranche
Marine Institute	Marine Institute - Ireland
MDK	MDK - Maritieme Dienstverlening en Kust - Belgium
MET	MET éireann - Irish Meterological Service - Ireland
Meteo France	Meteo France - France
METNO	MetNo - Norwegian Meteorological Institute - Norway
MIO	MIO - Mediterranean Institute of Oceanography
MSI	MSI - Marine Systems Institute - Estonia
MUMM	MUMM - Management Unit of the North Sea Mathematical Models - Belgium
NHS	NHS - Norwegian Hydrographic Service - Norway

NIB	NIB - National Institute of Biology
NIMRD	NIMRD - National Institute for Marine Research and Development
NIVA	NIVA - Norsk Institutt for Vannforskning
NMA	NMA - Norwegian Mapping Authority - Norway
NOC/METOFFICE	NOC - National Oceanography Centre Southampton - UK
NWAHEM	NWAHEM - North-West Regional Administration for Hydrometeorology and Environmental Monitoring - Russia
OGS	OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - Italy
OILPLAT	Oil Platform - Private Industry
PdE	Puertos del Estado - Spain
RIKZ	RIKZ - Rijkswaterstaat – Netherlands
SBR	SBR - Station Biologique de Roscoff
SHOM	SHOM - Service Hydrografique et Oceanographique de la marine - France
SMHI	SMHI - Swedish Meteorological and Hydrographic Institute – Sweden
SYKE	SYKE - Finnish Environment Institute
UAC	UAC - Universidade dos Açores
UKM	UKM - United Kingdom Recent Marine Data - UK
UKMO/MF	UKMO/MF - Met Office/Meteo France - UK/France
UPC	Universitat Politecnica de Catalunya
WSAL	Waterways and Shipping Authority Lubeck
WSAW	Waterways and Shipping Authority Wilhelmshaven
WSOB	Waterways and Shipping Office Bremerhaven
WSOS	Waterways and Shipping Office Stralsund
WSOT	Waterways and Shipping Office Toenning
Xunta Galicia	Xunta Galicia - Spain

Table 20 – acronyms

AAA	Authentication Authorisation Accounting
ADCP	Acoustic Doppler Current Profiler
BGS	British Geological Survey
BOOS System	Baltic Operational Oceanographic
BS GOOS	Black Sea GOOS
CDI	Common Data Index, a fine-grained inventory providing access to data, information and products
CF	Climate and Forecast
CTD	Conductivity Temperature Depth probe
DBCP	Data Buoy Cooperation Panel
EDIOS	European Directory of Ocean Observing Systems
EMODNet	European Marine Observation and Data Network
ESEAS	European Sea-Level Service Research Infrastructure
ESTOC	European Station for Timeseries Oceanic Canary islands
European Sea	Level Service Research Infrastructure
EurOBIS	European Ocean Biogeographic Information System
EuroGOOS	European Global Ocean Observing System
GIS	Geographic information systems
GMES	Global Monitoring for Environment and Security
GOSUD	Global Ocean Surface Underway Data project
GROOM	*Gliders* for Research Ocean Observation and Management
GTSPP	Global Temperature-Salinity Profile Program
IBI-ROOS	Iberia-Biscay-Ireland Regional Operational Oceanographic System
IODE	International Oceanographic Data Exchange
INSPIRE	Infrastructure for Spatial Information in the European Community (Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007)
ITP	Ice-Tethered Profiler
JCOMM	Joint WMO IOC Commission on Marine Meteorology
JCOMMOPS	Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) in situ Observing Platform Support Centre
MAP	Mediterranean Action Plan
MEDGLOSS	Mediterranean Network for Systematic Sea-level Monitoring in the Mediterranean and Black Seas - regional subsystem of GLObal Sea Level Observing System
MYO	MyOcean
MONGOOS	Mediterranean Operational Network – GOOS
MODEG	Marine Observation and Data Expert Group
MoU	Memorandum of Understanding
MSFD	Marine Strategy Framework Directive
MUMM	Management Unit of the North Sea Mathematical Models
NetCDF	Network Common Data Form
NODCs	National Oceanographic Data Centers
NOOS	North West European Shelf Operational Oceanographic System
NRT	Near Real Time
ODV	Ocean Data View
OGC	Open Geospatial Consortium services
PSMSL	PSMSL Permanent Service for Mean Sea Level
QA	QA Quality Assurance
QARTOD	Quality Assurance of Real Time Oceanographic Data
QC	Quality Control
ROOS	Regional Ocean Observing System
RSS	"RDF Site Summary" or "Really Simple Syndication"
SEIS	Shared Environmental Information System

SHOM	Service Hydrographique et Oceanographique de la Marine
SIMORC	System of Industry Metocean data for the Offshore and Research Communities
SSO	Single Sign On
TAC	Thematic Assembly Center
UKMO/MeteoFrance	UK - MeteoFrance
WFS	Web Feature Service
WGMDM	Working Group on Marine Data Management
WISE	Water Information System for Europe
WMO	World Meteorological Organisation
WMS	Web
WOCE	World