EMODnet

European Marine Observation and Data Network

EMODnet Thematic Lot n° 3 -Physics

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Start date of the project: 29/03/2017 - (24 months)

EMODnet Phase III – Quarterly Progress Report (6)

Reporting Period: 01/07/2018 – 30/09/2018

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Contents

Disclaimer

1 Highlights during the 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. ***Please make sure that progress in each of the tasks specified in Section 1.4.1 of the Tender Specifications is covered. For those tasks not experiencing significant progress, please state so.*** *You can also consider the indicators or any other of the reporting sections.*

- EMODnet Physics was one of the co-organizer of the International Glider Workshop - "Connecting Glider Data Flows In Europe and beyond" (Genova 18-20 September 2018) – the meeting was joined by 70 attenders from Europe, Australia, Brazil, Canada, United States and from both public (research institute, international organizations, etc.) and private (company) sector. The proactive discussion on data flow and data format harmonization settled the basis for developing an international standard (ocean glider format) that will facilitate data discoverability, access and interoperability. A long term sustained collaboration between EMODnet Physics and JCOMMOPS is important to facilitate and speed up the process and provide the European Glider TT the framework to develop and achieve the planned actions.

- First release of the EMODnet Impulsive Noise Registry. The registry (http://www.emodnet-physics.eu/map/Products/V2/PRODUCTS.aspx?PRODTYPE=NOISE&param=INDICATOR_2016#) is reporting pulse days per block (1/3° * 1/6° ICES extended grid). Data supplied by contracting parties to OSPAR (North East Atlantic), HELCOM (Baltic Sea), and Barcelona and ACCOBAMS (Mediterranean Sea, Black Sea).

- JERICO-NEXT Summer School dedicated sessions on the COPERNICUS Marine Environment Monitoring Service (CMEMS) and EMODnet, and JERICO-NEXT Virtual Access infrastructures. The hand-on session offered the students the opportunity to learn more about the programs and infrastructures and understand how to access and use data in practice.

- The GOOS Observing Element Specification Sheet (Annex_1) on HFR technology indicates the EMODnet Physics catalog (http://thredds.emodnet-physics.eu/thredds/HFRADARCatalog.html) among the other validated archives.

Task 1. ***Develop a common method of access to data held in repositories***

The international glider meeting represented a key community and first time-organized event to progress towards common standards, common formats and common data flow. The meeting was attend by representatives from US, Canada, Australia, Brazil, two GDACs (IOOS and Coriolis), JCOMMOPS and the GOOS project office (representing not only GOOS but also the JCOMM Observations Coordination Group (OCG)). It was possible do define a harmonized international approach to develop **one** OceanGlider data format and management (jointly coordinated by EGO network as a follow-up of the EU GROOM project, Coriolis/CMEMS INSTAC and EMODnet Physics for the Europe), to integrate and better monitor the glider deployments (JCOMMOPS). In the mid-term, the planned activities will also facilitate more Data Ingestion submissions.

The GOOS Observing Element Specification Sheet (Annex_1) on HFR technology indicates the EMODnet Physics catalog (http://thredds.emodnet-physics.eu/thredds/HFRADARCatalog.html) among the other validated archives.

The development of the European Impulsive Event Noise registry based on the RSCs registry is an important deliverable for both task 1 and task 2.

Task 2. ***Construct products from one or more data sources that provide users with information about the distribution of parameters in time and space***

A first release of the EMODnet Impulsive Noise Registry was released. The registry is reporting pulse days per block (1/3° * 1/6° ICES extended grid). Data supplied by contracting parties to OSPAR (North East Atlantic), HELCOM (Baltic Sea), and Barcelona and ACCOBAMS (Mediterranean Sea, Black Sea). Data are nationally collated from registers of licensed events such as pile driving, controlled explosions from naval operations and other activities that release energy. This registry is specifically purposed with supporting Regional Sea Conventions in providing information that will feed their regional assessments, and by this reporting its contracting parties to MSFD descriptor 11.1.1 (Low and mid frequency impulsive noise).

Work has been initiated on reconstruction of gaps in the river runoff time series by using Empirical Orthogonal Functions (EOF) analysis. The preliminary assessment (Annex_2) shows the method is a valuable cost efficient tool to generate and complete the product.

Task 3. ***Develop procedures for machine-to-machine connections to data and data products***

Work has started with the migration of the data management infrastructure on a new ERDDAP instance to facilitate data search and data access by parameters/themes with an update of the EMODnet Physics catalog (geonetwork based) and OGC services (Geoserver based WMS/WFS/WCS) accordingly. To promote procedures for M2M, the 8th MARTECH workshop (10-11 December, Porto) will host a special session on EMODnet Physics interoperability focused on underwater noise.

Task 4. ***Develop a web portal allowing users to find, visualise and download data***

EMODnet Physics products, catalog and OGC service (GeoServer) are continuously updated to fit the EMODnet Central portal needs/specifications, and end-user usability. The reports page has been added (http://www.emodnet-physics.eu/portal/reports, quarterly reports are going to be uploaded in coming weeks.

Task 5. *Ensure the involvement of regional sea conventions*

One major interaction was with the QuiteMed[1] project: EMODnet Physics (Antonio Novellino) joined the advisory board. Co-funded under the DG ENV/MSFD Second Cycle/2016 programme, the QuiteMed project objective is to enhance cooperation among Member States (MS) in the Mediterranean Sea to implement the Second Cycle of the Marine Directive and in particular to assist them in the preparation of their MSFD I.11 reports. Following the previous interactions, EMODnet Physics offered the BIAS[2] project to set up the data infrastructure to host under noise monitoring data in the Baltic area. BIAS committee eventually decided to have a local infrastructure that could be more flexible to their need and requirements. The committee also confirmed the intention to keep interacting and sharing data with EMODnet Physics.

Representatives of the RSCs were invited to participate to the MARTECH EMODnet Physics special session (http://www.martech-workshop.org) on underwater noise.

Task 6. *Facilitate interoperability with data distributed by non-EU organisations*

In collaboration with EMODnet Data Ingestion, EMODnet Physics keeps working on interfaces to facilitate the interoperability between Russian National Oceanographic Data Centre and EMODnet Physics (the activity was/is postponed to give priority to task 3).
As described in task 1, the co-coordination of the International Glider Workshop will also influence task 6 (mid-term).
Support was provided to the Southern Ocean Observing System, SOOS, and community to include new data layers in the EMODnet Physics SOOS child portal.
EMODnet Physics is having a dedicated session during next MONGOOS meeting (4-6 December 2018, Genova) that will provide an opportunity to meet some North Africans operators to discuss links and interoperability.
EMODnet Physics has been invited to present at the ODYSSEA GA (24-25 October, Lisbon. This provides an opportunity to seek collaboration opportunities with the project and ODYSSEA partners, many of them from North African countries. Data are collected within the ODYSSEA project, data not yet provided to EMODnet. Discussions on co-organizing data workshops in some North African countries will also be on the agenda.

[1] www.quietmed-project.eu

[2] https://biasproject.wordpress.com/

Initial discussions have been made with South Eastern Mediterranean countries (Egypt, Israel) on sharing additional data from the region. This has created a snowball effect involving countries from around the Red Sea leading to fruitful discussion on Red Sea – Mediterranean interactions and future collaboration opportunities.

Task 7. ***Install a process to monitor performance and deal with user feedback***

Task 8. ***Operate a help-desk offering support to users***

The monitoring process and the HD are operational. More info under Section 3.

2 Challenges encountered during the reporting period

Provide an overview of the main challenges encountered during the reporting period and the measures taken to address them, including those related to technical and data provision issues.

Main challenge	Measures taken
Together with the MEOP we noted some errors in the presentation of the product key metadata.	MEOP DB is temporary not accessible. Work is ongoing to solve the issue
Complexity in the management of the noise sound maps	We are facing several key issues related to the noise sound maps and, for the time of the present contract, it will only be possible to provide a proof of concept in selected areas. More specifically, the noise sound maps are based on AIS data. While waiting for the Human Activity AIS product and a study on how and if it is possible to generate noise sound maps, EMODnet Physics is using open and free source of AIS data. This data is not freely accessible all over the Europe, and so it is possible to work on spots only (http://www.aishub.net/coverage). Computing the monthly noise (@63Hz, 125Hz, 2KHz at 3 depth levels) for a small box (2DEG * 2DEG) takes from 2 to 3 weeks (by using the selected method that was developed by quiet-oceans). Once the map is generated, it has to be calibrated/validated versus in situ operational SPLs data. Now, EMODnet Physics is receiving SPLs data from only 2 sites (and working on integrating 2 more by end of the year). For these reasons, EMODnet Physics is going to focus on the proof of concept of the data flow to make calibrated sound maps on a target area (Barcelona) where we have access to both AIS data and SPLs.
Re-design of the EMODnet Physics widgets to support CMEMS INSTAC	EMODnet Physics was asked to re-design some of the widgets to facilitate the integration in the CMEMS INSTAC portal. The activity was concluded in July and new widgets are under a final test for the integration into the CMEMS service.
Download of all available dataset for a given parameter – sub setting feature	Re-organization of the whole EMODnet Physics data management and data infrastructure. The system is now mainly based on an ERDDAP server and datasets collected from the federated infrastructures (CMEMS, IOOS, IMOS …) are processed to generate and fill the EMODnet Physics DB. Dataset are now available in different transport format. The user is provided with the links to original data source.

Table 1. Challenges

3 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.

Date	Organization	Type of user feedback (e.g. technical, case study etc.)	Response time
06/07/2018	EMODnet Secretariat	Support to use the portal	1 day
19/07/2018	geo.aegean.gr	Tech – details on differences between monthly data and reprocessed data	1 day
27/07/2018	Sea-Mer Asso	Tech – wind rose plots have an angular offset	1 day
31/07/2018	IFREMER	Tech – support to download data subsets	1 day, first follow up, 1 week to fix it
01/08/2018	seo-dwarf project	Tech - Support to download chlorophyll-a near the surface for the years of 2017 and 2018 (in Baltic)	1 day
13/08/2018	Lawrence Berkeley National Laboratory	Tech – support to find own data	1 day
22/08/2018	GeoMETOC Support Center	Tech – two stations were erroneously joined together	1 day
23/08/2013	EMODnet Secretariat	Tech – issue on the map viewer	1 day
28/08/2018	Los Alamos National Laboratory	Support to download data from the EMODnet/SOOS child portal	1 day
10/09/2018	National Technical University of Athens	Support for understanding the names and conventions	1 day
20/09/2018	IFREMER	Tech – support to use APIs	1 day
26/09/2018	MERCATOR OCEAN	Tech – error in HFR data dissemination	1 day
26/09/2018	IHE Delft	Tech – support to download data subsets	1 day, first follow up, 1 week to fix it

Table 2.User Feedback

Interaction with the portal users showed an increasing interest and need for sub setting features in which the user would like to select e.g. one parameter, a time range and collect the selection at once. The portal is partially answering to this need: the user can select the parameter, the time range (and the boxing area) and proceed with the download. The result is a package with several files containing the selected parameter back to back to all the other parameters that are collected by the platform.
Work has started on updating the data management infrastructure to be able to provide a more user-oriented sub setting feature.

4 Meetings held/attended since last report

List here the internal and external meetings held/participated by the contractant (e.g. meeting, conference, training (workshop), etc.) since the last quarterly report. Please add a short description on the meeting as well as the nature and volume of the audience. At the bottom of the table, provide the total number of events organised and events participated.

Date	Location	Type[3]	A/O	Title	Short description and main results (# participants, agreements made, etc.)
10/07/2018	Web-meeting	meeting	O	International Glider Workshop	Organizing committee technical meeting - 15 attenders
11-13/07/2018	Malta	training	O	EMODnet training session during the JERICO-NEXT summer school	A dedicated sessions in the program linked to the COPERNICUS Marine Environment Monitoring Service (CMEMS) and EMODnet, and together with the JERICO-NEXT Virtual Access portals were used to showcase the relevance of the data streams through dedicated hands-on practical sessions (*). About 30 students
10-11/09/2018	Helsinki	TT meeting	A	SeaDataCloud Technical WG	Period technical meeting. SeaDataNet is one of the EMODnet Physics pillar. During the meeting, we discussed about joint activities and services to close the gap between NRT and validated data. About 40 attenders
14/09/2018	La Spezia	meeting	A	Ligurian Integrated monitoring Project (PIM) kick-off	Kick-off of a local project on the development of a Ligurian Integrated monitoring infrastructure. Benefit of synergies with EMODnet Physics and Ingestion were discussed. 25 attenders
18-20/09/2018	Genova	workshop	O	International Glider Workshop	Goal of the workshop was to discuss the harmonization of data formats and data flow to facilitate more operators to join an open data distribution and accessibility.
26-27/09/2018	Galway	meeting	A	JERICO-NEXT Annual Assembly	Interaction and synergies between JN and some of the EMODnet lots (Physics, Biology, and Ingestion) were discussed during the meeting. About 60 attenders
SUM of O			3		(Total # of meetings organised)

[3] meeting, training (workshop), etc.

SUM of A			3		(Total # of meetings attended)

Table 3. Meetings

*) http://www.jerico-ri.eu/events/operational-oceanography-for-blue-growth/

5 Outreach and communication activities

Please list all the relevant communication/outreach activities or products you have developed/executed during this period (including presentations, lectures, trainings, demonstrations, workshops, etc., and development of communication materials such as brochures, videos, press releases, newsletters, etc.). At the bottom of the table, provide a total number for every type of communication activity you have developed/executed (e.g. total # of press releases, total # of presentations given, etc.).

Date	Communication action/material	Short description (of the material, title, …) and/or link to the activity	Main results (# participants, # views, # press clippings, etc.)
18/07/2018	presentation	EMODnet training session during the JERICO-NEXT summer school	About 30 students
18-19/09/2018	presentations	General introduction to EMODnet, EMODnet Physics and EMODnet Ingestion, goals, infrastructures, the activity on data harmonization and interoperability, the point of view as a glider data user	70 attenders[4]

Table 4. Outreach

Moreover we worked with known users to publish new user cases (Central portal is already showing 9 of them) and 2 new papers (Manzella et al.) were accepted (see table 5)

[4] *during the event several tweets were posted with a good level of interaction.*

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

Date	type	Name of journal, conference, …	Publication title	Authors	Other info
2013	Conference	Bollettino di Geofisica teorica ed applicata, Vol. 54 Supplement, 2013	The HNODC Data & Information Management Services: Description & Recent Upgrades	Sissy Iona, Stavroula Balopoulou, Pelopidas Karagevrekis, Angelo Lykiardopoulos	IMDIS 2013, International Conference on Marine Data and Information Systems, 23-25 September, 2013 - Lucca (Italy)
2013	Conference	Book of Abstract: The Future of Operational Oceanography 2013	FerryBox Systems: State-of-the-art and Incorporation in European Observation Networks	Wilhelm Petersen	
2013	Conference	Bollettino di Geofisica teorica ed applicata, Vol. 54 Supplement, 2013	EMODNet Physical Parameters	A. Novellino, G. Manzella, D. Schaap, P. Gorringe, L. Rickards, S. Pouliquen	IMDIS 2013, International Conference on Marine Data and Information Systems, 23-25 September, 2013 - Lucca (Italy)
2013	Conference	EGU General Assembly 2013, held 7-12 April, 2013 in Vienna, Austria, id. EGU2013-3126	European Marine Observation and DataNetwork (EMODNET)-physical parameters: A support to marine science and operational oceanography	Dahlin, Hans; Gies, Tobias; Giordano, Marco; Gorringe, Patrick; Manzella, Giuseppe; Maudire, Gilbert; Novellino, Antonio; Pagnani, Maureen; Petersson, Sian; Pouliquen, Sylvie; Rickards, Lesley; Schaap, Dick; Tijsse, Peter; van der Horste, Serge	EGU 2013
2013	Conference	Book of Abstract: The Future of Operational Oceanography 2013	EMODNet – Physical Parameters	Patrick Gorringe, Antonio Novellino, Giuseppe Manzella, Dick Schaap, Lelsy Richards, Sylvie Pouliquen	IMDIS 2013, International Conference on Marine Data and Information Systems, 23-25 September, 2013 - Lucca (Italy)
2013	Report	RITMARE project Report, 2013	Rapporto tecnico-scientifico sullo stato dell'arte dei sistemi oceanografici operativi in Mare Mediterraneo e nei mari italiani con particolare riguardo ai sistemi osservativi	Ribotti, Alberto and Ciuffardi, Tiziana and Pes, Aandrea and Manzella, Giuseppe M.R. and Sparnocchia, Stefania	
2014	Conference	HF Radar Supporting Blue Growth in NW Europe: The Brahan Project, Lisbon, 28-30 October 2014	HF Radar Supporting Blue Growth in NW Europe: The Brahan Project	W.R. Turrell, B. Berx, A. Gallego, S. Hughes, R. O'Hara-Murray, J. Sanchez , B. Pereira , A. Alonso-Martirena	
2014	Conference	EGU General Assembly 2014, held 27 April - 2 May, 2014 in Vienna, Austria, id.5765	Knowledge base for growth and innovation in ocean economy: assembly and dissemination of marine data for seabed	Novellino, Antonio; Gorringe, Patrick; Schaap, Dick; Pouliquen, Sylvie;	EGU 2014

			mapping - European Marine Observation Data Network - EMODnet Physics	Rickards, Lesley; Manzella, Giuseppe	
2014	Conference	European HFR meeting Monday 27th October 2014, Lisbon	Introducing the EuroGOOS HFR Task Team and EMODnet	Patrick Gorringe	EuroGOOS meeting
2015	Conference	IEEE Conference Publications, 2015	European marine observation data network — EMODnet physics	Antonio Novellino; Paolo D'Angelo; Giacomo Benedetti; Giuseppe Manzella; Patrick Gorringe; Dick Schaap; Sylvie Pouliquen; Lesley Rickards	OCEANS 2015 - Genova
2015	Conference	EGU General Assembly 2015, held 12-17 April, 2015 in Vienna, Austria. id.8417	European Marine Observation Data Network - EMODnet Physics	Manzella, Giuseppe M. R .; Novellino, Antonio; D'Angelo, Paolo; Gorringe, Patrick; Schaap, Dick; Pouliquen, Sylvie; Loubrieu, Thomas; Rickards, Lesley	EGU 2015
2015	Conference	EGU General Assembly 2015, held 12-17 April, 2015 in Vienna, Austria. id.14714	European coordination for coastal HF radar data in EMODnet Physics	Mader, Julien; Novellino, Antonio; Gorringe, Patrick; Griffa, Annalisa; Schulz-Stellenfleth, Johannes; Montero, Pedro; Montovani, Carlo; Ayensa, Garbi; Vila, Begoña; Rubio, Anna; Sagarminaga, Yolanda	EGU 2015
2015	Journal	Data Science Journal, Volume 13, 27 January 2015	IBAMAR DATABASE: FOUR DECADES OF SAMPLING ON THE WESTERN MEDITERRANEAN SEA	A Aparicio-González, J L López-Jurado, R Balbín, J C Alonso, B Amengual, J Jansá, M C García, F Moyá, R Santiago, M Serra, M Vargas-Yáñez	
2015	Journal	Journal Geophysical Research, Volume 120, Issue 11	Anatomizing one of the largest saltwater inflows into the Baltic Sea in December 2014	U Gräwe, M Naumann, V Mohrholz, H. Burchard	
2016	Conference	Journal of Operational Oceanography . Volume 9, 2016 - Issue sup1: Operational Oceanography, Innovative Technologies and Applications. Pages s193-s201	An interlinked coastal observatory network for Europe	Stefania Sparnocchia, Michela Martinelli, Srdjan Dobricic, Rajesh Nair, Alessandro Crise, Patrick Farcy, Glenn Nolan, Joaquin Tintorè	Third Meeting of the Italian National Group for Operational Oceanography
2016	Conference	instrumentation viewpOint- 19 - MARTECH 16	SEVEN YEARS OF MARINE ENVIRONMENTAL CHANGES MONITORING AT COASTAL OOCS STATIONS (CATALAN SEA, NW MEDITERRANEAN)	Bahamon, N., Ahumada-Sempoal, M.A., Bernardello, R., Aguzzi, J., Gordoa, A., Carreras, G., Velasquez, Z., Cruzado, A.	MARTECH 2016
2016	Conference	4as Jornadas de Engenharia Hidrográfica,	Plataforma integrada WebSIG para apoio à	A. Oliveira, J. Rogeiro, J.L. Gomes, P. Pinto, A.	

		Lisboa, 21 a 23 de junho de 2016	gestão da emergência em eventos de inundação em estuários	B. Fortunato, P. Freire, R. T., Costa, L. Sá, R. Pablo, A. Mendes	
2016	Conference	EGU General Assembly 2016, held 17-22 April, 2016 in Vienna Austria, p.3831	EMODnet Physics: One-stop Portal to access Multiplatform Observing Systems	Novellino, Antonio; Benedetti, Giacomo; D'Angelo, Paolo; Gorringe, Patrick; Thjisse, Peter; Schaap, Dick; Pouliquen, Sylvie; Manzella, Giuseppe	EGU 2016
2016	Conference	Ed. D. Farace and J. Frantzen, 104 – 111, 2016;	A semantic engine for grey literature retrieval in the oceanography domain.	S. Goggi, G. Pardelli, R. Bartolini, F. Frontini, M. Monachini, G. Manzella, M. De Mattei and F. Bustaffa:	Seventeenth International Conference on Grey Literature - A New Wave of Textual and Non-Textual Grey Literature. December 1st - 2nd 2015 at the Royal Netherlands Academy of Arts and Sciences in Amsterdam.
2016	Journal	Ocean Sci., 12, 909–923, 2016	Accessing diverse data comprehensively – CODM, the COSYNA data portal	Gisbert Breitbach, Hajo Krasemann, Daniel Behr, Steffen Beringer, Uwe Lange, Nhan Vo, and Friedhelm Schroeder	
2016	Journal	Harmful Algae, Volume 53, March 2016, Pages 40–52	Modelling the hydrodynamic conditions associated with *Dinophysis* blooms in Galicia (NW Spain)	Manuel Ruiz-Villarreal, Luz M. García-García, Marcos Cobas, Patricio A. Díaz, Beatriz Reguera	
2016	Journal	Ocean Engineering & Oceanography, Vol. 6, pp 31-46, 2016	The European Marine Data and Observation Network (EMODnet): Your Gateway to European Marine and Coastal Data	Jan-Bart Calewaert, Phil Weaver, Vikki Gunn, Patrick Gorringe, , Antonio Novellino	
2016	Newsletter	MERCATOR OCEAN JOURNAL 54, 2016	MAIN ACHIEVEMENTS FOR MYOCEAN IN SITU THEMATIC ASSEMBLY CENTER	S. POULIQUEN, et al	
2016	Report	CMEMS-INS-SRD	System Requirements Document	Carval Thierry, Chalkiopoulos Antonis, Perivoliotis Leonidas, De Alfonso Alonso-Muñoyerro Marta, Manzano Munoz Fernando, Jandt Simon, Ringheim Lid Sjur, Hammarklint Thomas, Marinova Veselka	
2016	Report	IFREMER IMN/IDM/ISI/TC/16-031, 30th May 2016	Catalogue of data and platforms at Network GDAC level, including the example of Copernicus In Situ TAC	Ifremer	
2016	Report	AtlantOS – 633211, D7.4, 2016	Data Management Handbook	V. Harscoat, S. Pouliquen	EU Atlantos project
2016	Report	IMARES Report C072/16	Collecting literature for identifying data sets and data sources	Pepijn de Vries, Jacqueline Tamis, Martine van den Heuvel-	IMARES Wageningen UR, Den Helder, 14 July 2016

				Greve, Peter Thijsse & Belinda Kater	
2017	Book chapter	Oceanographic and Marine Cross-Domain Data Management for Sustainable edited by P. Diviacco, A. Leadbetter, H. Glaves, IGI Global,	Semantic Search Engine for Data Management and Sustainable Development: Marine Planning Service Platform.	G. Manzella, R. Bartolini, F.Bustaffa, P. D'Angelo, M. De Mattei, F. Frontini, M. Maltese, D. Medone, M. Monachini, A. Novellino and A. Spada:	
2017	Journal	Renewable Energy, Volume 101, February 2017, Pages 244–264	Assessing the European offshore wind and wave energy resource for combined exploitation	Christina Kalogeri, George Galanis, Christos Spyrou, Dimitris Diamantis, Foteini Baladima, Marika Koukoula, George Kallos	
2017	Journal	Marine Sciemce, 20 January 2017	HF Radar Activity in European Coastal Seas: Next Steps toward a Pan-European HF Radar Network	Anna Rubio, et al.	
2017	Conference	EGU General Assembly 2017, held 23-28 April, 2017 in Vienna, Austria. id.7113	EMODnet Physics in the EMODnet program phase 3	Novellino, Antonio; Gorringe, Patrick; Schaap, Dick; Pouliquen, Sylvie; Rickards, Lesley; Thijsse, Peter; Manzella, Giuseppe	
2017	Book chapter	Submerged Landscapes of the European Continental Shelf. Edited by Nicholas C. Flemming,Jan Harff,Delminda Moura,Anthony Burgess,Geoffrey N. Bailey	Chapter 6: The Northwest Shelf.	Keiran Westley	
2017	Conference	EGU General Assembly 2017, held 23-28 April, 2017 in Vienna, Austria. id.194371S	EMODnet High Resolution Seabed Mapping - further developing a high resolution digital bathymetry for European seas	Schaap, Dick M. A.; Schmitt, Thierry	
2017	Journal	neurocomputing	Ocean wave height prediction using ensemble of Extreme Learning Machine	Kumar et al	http://dx.doi.org/10.1016/j.neucom.2017.03.092
2017	Report	AtlantOS Deliverable, D9.2 . AtlantOS, 73 pp.	Web-based monitoring tool of the Atlantic Ocean observing system (Europe). .	Novellino, A., Fernandez, V. and Buch, E. and WP9 partners	DOI 10.3289/AtlantOS_D9.2.
2017	Report	CMEMS-INS-SRD	System Requirements Document (updated version of the 2016 report)	Carval Thierry, Chalkiopoulos Antonis, Perivoliotis Leonidas, De Alfonso Alonso-Muñoyerro Marta, Manzano Munoz Fernando, Jandt Simon, Ringheim Lid Sjur,	DOI:10.13155/40846

				Hammarklint Thomas, Marinova Veselka	
2017	Report	AtlantOs meeting report 2017	Data flow and Data Integration - WP7	Harscoat Valerie, Pouliquen Sylvie	DOI: 10.13155/51745
2017	Report	JERICO NEXT D5.9	Report on data management best practice and Generic Data and Metadata models. V. 2.1 [Deliverable 5.9]	G Manzella, A Griffa, LP de la Villéon	https://www.oceanbestpractices.net/handle/11329/354
2017	Journal	GEOMEDIA - Open Journal System, V. 21, N. 5	European Marine Observations and Data Network EMODnet Physics	A. Novellino, P. D'Angelo	http://mediageo.it/ojs/index.php/GEOmedia/article/view/889
2017	Workshop	HELCOM report - - Sopot, Poland, 23-27 October 2017	HELCOM Working Group on the State of the Environment and Nature Conservation (STATE & CONSERVATION 7-2017)	A. Novellino	https://portal.helcom.fi/meetings/STATE%2520-%2520CONSERVATION%25207-2017-470/Documents/Presentation%252018%2520EMODNet%2520Physics.pdf
2017	Conference	OCEANS – Anchorage, 2017	Oceanobs a python package to analyze data from marine observatories	R. Bardaji, J. Piera, R. Bartolomé, J. Dañobeitia, O. Garcia	http://ieeexplore.ieee.org/document/8232303/
2017	Book chapter	Submerged Landscapes of the European Continental Shelf - John Wiley & Sons, 26 apr 2017 - 552 pages	Ch. 6 The North Western Shelf	K Westley	
2018	Workshop	EUROGOOS Meeting Feb 2018	EuroGOOS and EMODNet Physics Data Workshop	A. Leadbetter, P. Gorringe, A. Novellino	http://eurogoos.eu/events/4595/
2018	Journal	Neurocomputing Volume 277, 14 February 2018, Pages 12-20	Ocean wave height prediction using ensemble of Extreme Learning Machine	N. KrishnaKumar, R.Savitha, AbdullahAl Mamun	https://doi.org/10.1016/j.neucom.2017.03.092
2018	Newsletter	Challenger Society for Marine Science	Challenger Wave		https://www.challenger-society.org.uk/files/pagefiles/Documents/C%20wave/CWave_201805.pdf
2018	Conference	EGU 2018 ESSI1.1	EMODnet Physics: tackling new challenges	Patrick Gorringe and Antonio Novellino	https://meetingorganizer.copernicus.org/EGU2018/EGU2018-7770.pdf
2018	Conference	EGU 2018 ESSI1.1	Best practices in QA/QC	Catia Chiappini and Giuseppe M.R. Manzella	EGU2018-6821
2018	Conference	EGU 2018 ESSI1.1	Effortless Integration of Underwater Noise Measurements into EMODnet data portal through SensorWeb Standards	E. Martinez et al.	EGU2018-13103
2018	Conference	EGU 2018 ESSI1.1	The European common data and metadata model for real-time High Frequency Radar surface current data	L. Corgnati et al.	EGU2018-13317
2018	Conference	EGU 2018 ESSI1.1	Animal-borne instruments in EuroGOOS – EMODnet Physics	L. Boehme et al.	EGU2018-14307
2018	Conference	EGU 2018 ESSI1.1	SOOSmap brings circumpolar Southern	P. Bricher et al.	EGU2018-15262

			Ocean data to a computer near you		
2018	Conference	EGU 2018 ESSI1.1	Multi-Platform Data Distribution Challenges from Observing Systems to Data Distribution	M.V. Charcos-Lloréns et al.	EGU2018-16380-1
2018	Conference	EGU 2018 ESSI1.1	An European initiative to provide operational river observations and forecasts	F. Campustano et al.	EGU2018-19688
2018	Journal	Modern Approaches in Oceanography and Petrochemical Sciences. 1(5)-2018. MAOPS.MS.ID.000124. Lupine Publisher	Emodnet Physics: Benefits from Marine Data Sharing	G.M.R. Manzella, A. Novellino, P. D'Angelo	http://www.lupinepublishers.com/maops/pdf/MAOPS.MS.ID.000124.pdf
2018	Journal	Modern Approaches in Oceanography and Petrochemical Sciences. 1(5)-2018. MAOPS.MS.ID.000124.	Producing Contiguous Data in Marine Environment: A Gaussian-Montecarlo Methodology.	G. M. Manzella, M. Gambetta, A. Novellino	https://juniperpublishers.com/ofoaj/pdf/OFOAJ.MS.ID.555736.pdf
2018	Report	CMEMS-INS-SIVP	System Integration and Verification Plan	T. Carval, et al.	http://dx.doi.org/10.13155/51660
2018	Report	AtlantOS – 633211 D.4.2	South Atlantic tide gauge data management plan	E. Bradshaw, L. Rickards	http://oceanrep.geomar.de/43389/1/AtlantOS_deliverable_D4.2.pdf
2018	Journal	Journal of Coastal Research: Special Issue 85 - Proceedings of the 15th International Coastal Symposium: pp. 1256 – 1260.	Wave Climate Definition on Modeling Morphological Changes in Figueira da Foz Coastal System (W Portugal).	C Ferreira, et al.	
2018	Journal	Marine Policy, Volume 97, November 2018, Pages 130-138	Data challenges and opportunities for environmental management of North Sea oil and gas decommissioning in an era of blue growth	F. Murray, et al.	https://doi.org/10.1016/j.marpol.2018.05.021
2018	Journal	Sensors 2018, 18, 2737.	Integration of Underwater Radioactivity and Acoustic Sensors into an Open Sea Near Real-Time Multi-Parametric Observation System.	S. Pensieri et al.	https://www.mdpi.com/1424-8220/18/8/2737

Table 5. List of known publication using EMODnet data or products

6 Annex: Other documentation attached

List in Annex if you wish to provide any additional information.

6.1 WP1 – Project Management

The general objectives of WP1 are the project management and the coordination of all project activities ensuring timely delivery and high quality of documentation, tools, results and products. Project management includes the collaboration with the other EMODnet activities and involvement of regional sea conventions. This work package is including Task 5. Ensure the involvement of regional sea conventions.

Description:

- **EMODnet Physics and International Glider Workshop in Genova**

The meeting was organized by the EuroGOOS Glider Data Management Task Team and EMODnet Physics with the goal to exchange ideas and build towards a collaborative framework for the management of glider data at both European and global level. As co-chairs of the global OceanGliders Data Management Task Team, we find such exchange absolutely critical for long-term sustainability, accessibility, and global visibility of glider data in the Global Ocean Observing System (GOOS). Most importantly, it was noted that this workshop was the first step[5] toward meeting the GOOS Strategic Objective 7: data should be Findable, Accessible, Interoperable, and Reuseable (FAIR principle). The workshop consisted of a number of sessions which allowed attendees to understand the global landscape of glider data management, the current practices at major data centers, the wide range of active participants and their role in managing glider data flow, the existing tools and practices, the experience and recommendation of scientific users, and a hands-on session. Agenda and presentations at http://www.ego-network.org.

- **Follow up on the engagement of the RSCs and under water noise**

The main interaction was with QUIETMED project (http://www.quietmed-project.eu/ - "DG ENV/MSFD Second Cycle/2016"). The QUIETMED project is working to enhance cooperation among Member States (MS) in the Mediterranean Sea to implement the Second Cycle of the Marine Directive and in particular to assist them in the preparation of their MSFD reports by 2018. Among other activities it is working on the development of a joint monitoring programme of impulsive noise (Indicator 11.1.1) based on a common register, including gathering and processing of available data on underwater noise. This represent a key data source for the EMODnet Physics product on European Impulsive Events Noise Registry[6].

- **Under Water Noise**

A first release of the EMODnet Physics European Impulsive Noise Events Registry was published.

[5] Note: regional initiative in Europe, USA and Australia existed but witout real coordination

[6] http://geoserver.emodnet-physics.eu/geoserver/emodnet/wms?service=WMS&version=1.1.0&request=GetMap&layers=emodnet:EP_UWN_INER&styles=&bbox=-14.5800008773804,31.4949989318848,35.2466697692871,66.1716766357422&width=768&height=534&srs=EPSG:4326&format=application/openlayers

The product integrates the Impulsive Noise Registries of the European Sea Regional Conventions: OSPAR (North East Atlantic), HELCOM (Baltic Sea), and Barcelona and ACCOBAMS (Mediterranean Sea, Black Sea). Data (pulse block - days) is presented in an harmonized grid (1/3° x 1/6° grid). This registry is purposed with supporting SRCs in providing information that will feed their regional assessments, and in reporting by its contracting parties to MSFD descriptor 11.1.1 (low and mid frequency impulsive noise). Impulsive noise events are collected nationally and integrated at SRC level. ICES (http://underwaternoise.ices.dk/map.aspx) is hosting OSPAR and HELCOM registries. Mediterranean data are integrated from the ACCOBAMS demonstrator (http://accobams.noiseregister.org/).
EMODnet Physics is also co-organizing a dedicated underwater noise session during next MARTECH workshop (http://www.martech-workshop.org).

- **River Data**

A tool has been developed to fill gaps in the river runoff time series by using Empirical Orthogonal Functions (EOF) analysis. The preliminary assessment (Annex_2) shows the method is a valuable cost efficient tool to generate a complete product. In particular, we started from the application of a modified EOF analysis to estimates runoff amplitude patterns for the Po Rivers and one of its tributary The main outcome is that EOF and P-EOF (pertubation EOF) provides a cost-effective and valuable tool to have a complete product.

- **Data Ingestion**

In collaboration with Data Ingestion, EMODnet Physics included a number of new near real time data streams, in particular 3 more NIVA Ferrybox and an HFR in the Rotterdam harbor are now operationally connect to EMODnet Physics. EMODnet Physics also had some preliminary meetings with the PI of the Portofino MEDA buoy. Some historical data have already been submitted and work is now ongoing to create an operational link to this platform.

6.2 WP2 – Data Collection, Metadata Compilation, Data Access and Products

The objectives of WP2 are to identify specific additional data sources that contribute to the EMODnet physical parameters portfolio (Argo, profiling floats, gliders, radar, CTD from ships, river outflow, water noise, etc.), and reduce spatial and temporal gaps in cooperation and collaboration with the underlying EuroGOOS ROOSs, CMEMS INS TAC, and SeaDataNet NODCs infrastructures, as well as EMODnet Data Ingestion. Part of this activity is to develop EMODnet Physics services with user-friendly interfaces for data and metadata uploading, data tracking and provide guidance and documents on preferred data, common data and metadata models. This WP is including Task 1. Develop a common method of access to data held in repositories, Task 2. Construct products from one or more data sources that provide users with information about the distribution of parameters in time and space, and Task 6. Facilitate interoperability with data distributed by non-EU organizations.

Description:

EMODnet Physics is developing an **operational service where near real time and historical validated marine data are made interoperable and freely available.**

WP2.1 Expand the existing measurements from fixed and moving platforms

As already described, there are a number of ongoing actions to include additional data; some key results for the period are the expansion of more NIVA ferrybox data and a new HFR in Rotterdam harbor.

WP2.2 closing the gap in data flow between operational repository and validated archives

Work continues in collaboration with the SeaDataCloud network for this action: a new delivery service that provides the NODC with recent data periodically is now under development and test. In collaboration with a couple of selected NODCs, we are going to test the service in the coming months. Test results will be reported.

The GOOS Observing Element Specification Sheet (Annex_1) on HFR technology indicates the EMODnet Physics catalog (http://thredds.emodnet-physics.eu/thredds/HFRADARCatalog.html) among the other validated archives.

WP2.3. Include new parameters: inflow from rivers and sound

Work continues to connect new underwater noise data providers. We are extending the river outflow in situ operational station coverage. As anticipated in the previous report we are working on Italian data. There are also discussions with in particular the Scandinavian countries and Iceland. In parallel, we performed the study on cost-effective methods to fill gaps in river runoff time-series (see Annex_2).

WP2.4. Collaboration with EMODnet Data Ingestion project

As planned, a Glider Workshop was organized in Genoa (Italy) 18-21 September 2018 during which we discussed about harmonization of data management and facilitation of interoperability. Other joint planned actions are:

- European HFR workshop (Spain) 22-24 October, goal is to share common tools to make more data available (note: the workshop is jointly organized by EMODnet Physics, EMODnet Data Ingestion, CMEMS INSTAC and JERICO-NEXT project)
- EMODnet Physics Under Water Noise session @ MARTECH (Porto) 11-12 December
- FerryBox Workshop Genoa (Italy) 24-26 April 2019: goal is to discuss and harmonize data flow and facilitate interoperability.

WP2.5: Metadata

Work is ongoing with a new geonetwork based catalog that is already presenting some of the EMODnet Physics data collections and products. The plan is to keep updating the catalog in the coming months. Concerning the dataset metadata, we are increasing the collaboration with JCOMMOPS that showed interest on supporting the metadata harmonization on emerging networks (gliders and HF radars).

WP2.6. Data access

To facilitate data discovery we reorganized both the EMODnet Physics Map menus and we reorganized and updated the EMODnet Physics catalog (that is now based on geonetwork).

WP2.7. Data Products

As discussed in previous sections, the activity was focused on the integration and development of the interfaces for the Impulsive Noise Registry (INR).

We plan to keep reorganizing some of the EMODnet Physics products to match some platform network (FerryBox, gliders and HFR) operator's requests.

6.3 WP3 – Portal technical Development and operation

The objectives of WP3 are to implement and extend the www.emodnet-physics.eu portal allowing users to find, visualize and download data and data products and their metadata. This includes the development of procedures for machine-to-machine connections to metadata, data and data products and services compatible with INSPIRE, EMODnet and OGS standards and requirements. The portal also has to develop monitoring tools of website performance and usage. This WP is including Task 3. Develop procedures for machine-to-machine connections to data and data products, and Task 4. Develop a web portal allowing users to find, visualise and download data

Description:

EMODnet Physics products, catalog, OGC service (GeoServer) were updated both to fit the EMODnet Central portal needs/specifications, and end-user usability. We added the reports page (http://www.emodnet-physics.eu/portal/reports, quarterly reports are going to be uploaded in coming weeks) and the FAQ page is still under development. We published the INER discovery page.

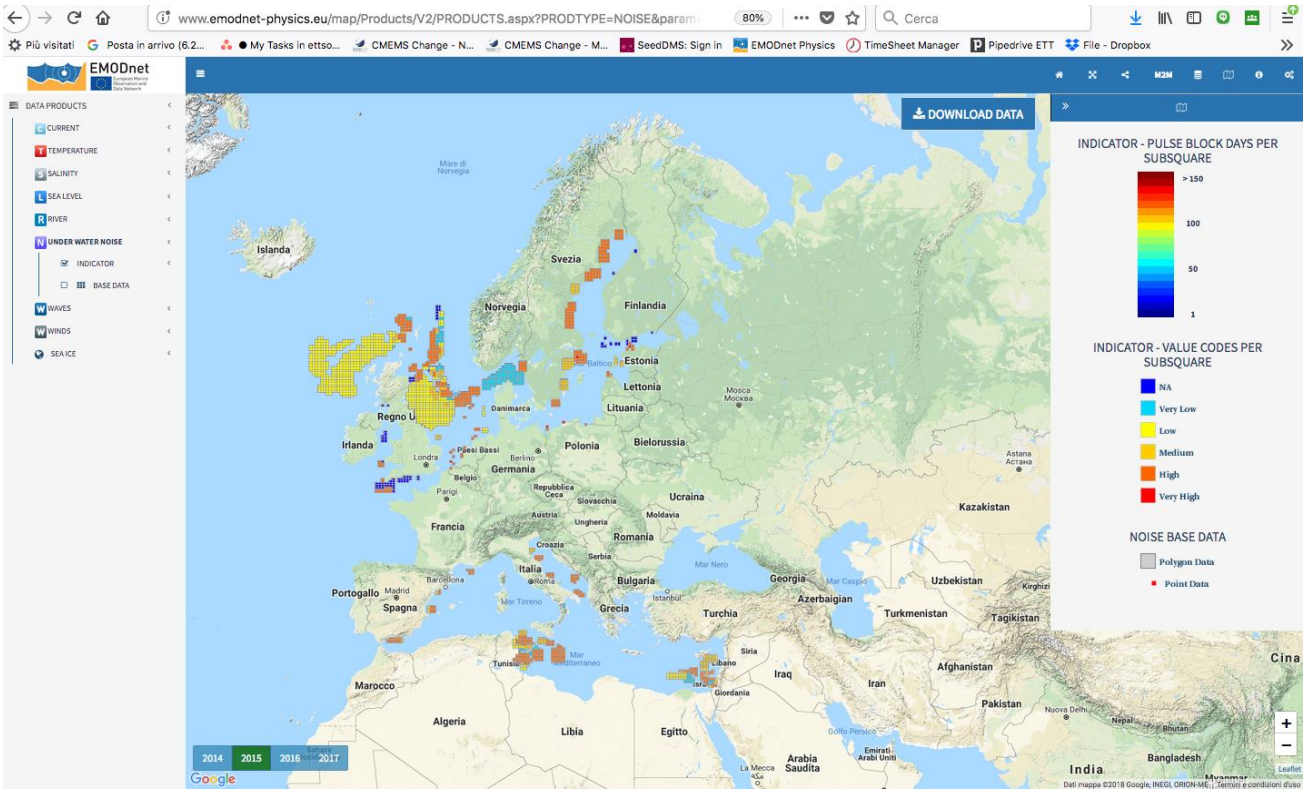

Figure 1. Impulsive Noise Event Registry

WP3.2 EMODnet Physics machine-to-machine (M2M) and interoperability features

The new widgets to serve the CMEMS INSTAC dashboard/map portal were completed and released. Support was also provided to the SOOS community to include new data layers in the EMODnet Physics SOOS child portal.

WP3.3 interoperability with data distributed by non-EU organizations

One of the main technical outcomes from the International Glider meeting was a common agreement to work towards a unique international interoperable data format (i.e. ocean glider 0.1). This action will facilitate more interoperability and easier connections/links to new international providers. EMODnet Physics will continuously update on progress made.

EMODnet Physics will have a dedicated session during next MONGOOS meeting (4-6 December 2018 Genova). This will provide an opportunity to meet some North Africans operators and discuss links and data interoperability.

6.4 WP4 – Analysis Evaluation and Feedback

WP4 is aimed at reporting effectiveness of the system in meeting the needs of users and other EMODnet portals, assess the robustness of the developed information system and operate a help desk to deal with user feedback and need for support. This WP is including Task 7. Install a process to monitor performance and deal with user feedback, Task 8. Operate a help desk offering support to users.

Description:

The system is collecting usage and traffic (number of hits, amount and type of data used, etc.) to fill and match the required Indicators.

Access and use of the Help desk facility: during this period, we registered 13 requests (Table 2); some of these were collected by direct mails (i.e. not by using the help desk service).

Information on users: Table 6 presents data collected for the past three months (1/7/2018-30/9/2018) from/about authenticated users. Note this is only a limited subset of the portal traffic.

Organisation type	% users	tot users Organisation type	Main use cases and application areas
Academia/Research	62,30%	38	Marine and Coastal - tot: 34
			Climate, Seasonal and Weather Forecasting - tot: 20
			Marine Resource - tot: 9
			Maritime Safety - tot: 6
Business and private Company	8,20%	5	Marine and Coastal - tot: 5
			Climate, Seasonal and Weather Forecasting - tot: 3
			Marine Resource - tot: 2
Government/Public Administration	13,10%	8	Marine and Coastal - tot: 7
			Climate, Seasonal and Weather Forecasting - tot: 6
			Marine Resource - tot: 3
			Maritime Safety - tot: 2
Non profit	9,80%	6	Marine and Coastal - tot: 5
			Climate, Seasonal and Weather Forecasting - tot: 2
			Maritime Safety - tot: 1

			Marine Resource - tot: 1
Other	**6,60%**	**4**	**Marine and Coastal - tot: 3**
			Climate, Seasonal and Weather Forecasting - tot: 3
			Maritime Safety - tot: 2
			Marine Resource - tot: 2
		61	

Table 6. Users and their interest (people registered in past 3 months, total # users which updated their profile 335)

7 New monitoring indicators

Please consult and fill in the designated excel template.

Indicator 1 – Volume and Coverage

Note: the figure for Atlantic Ocean is also including platforms in the South Atlantic Ocean.

Indicator 2 – Organisations supplying data and data products

For Physics is not possible to report according the proposed table, we are using the same table we were using for the past reports in which we list the Organization (provider) the country, the platform and the themes.

Concerning the products the main provider for EMODnet Physics are:

- Mercator Ocean/Copernicus Marine Environment Monitoring Service
- SeaDataCloud (the T&S climatology is a product developed during the project by the joint effort of several SDN partners)
- PSMSL, provided and maintained by NERC BODC (UK)
- SONEL, provided and maintained by the University of La Rochette (France)
- MEOP, provided and maintained by MEOP (the data management is coordinated by University of St. Andrew – Scotland and University of Stockholm)
- Global Runoff Data Center – hosted by the Federal Institute of Hydrology (BfG) Germany
- Impulsive Noise registry – hosted by ICES (Denmark) on behalf of OSPAR and HELCOM, and the ACCOBAMS web portal for the MED

Indicator 3 - Organisations that have been approached to supply data with no result

Nothing to report

Indicator 5 – Number and coverage of built data products

Indicator 5.1
Built data products table is reporting data according the metrics it was applied during the previous report. Now, many of the built in products are not listed in the catalogue yet. The re-organization and update of the catalogue is an on-going activity and once completed (next period) considering that the catalogue is going to list the built in products also, the 5.1 indicator will be re-organized accordingly.

Indicator 5.2.1

The EMODnet Physics catalogue was redesigned and the preliminary version was published in July. It will be updated continuously to list all the available products and datasets

Indicator 6 – Portal & Social Media visibility

EMODnet Physics is using both MATOMO and internal logs to track page use and visibility and for the reporting period, there are some divergences.

Page views		Trend	Unique page views		Trend	Exit Rate
Last Report	Actual Report	%	Last Report	Actual Report	%	%
19.647	18.723		12.192	10.622		34

Table 7. Matomo analytics for the period 01/06/2018 – 30/09/2018[7]

Looking at the pages:

pages [5]	Page views		Trend (%)	Unique page views		Trend (%)	Bounce rate (%)
	Last Report	Actual Report		Last Report	Actual Report		
Landing page	1.262	1.150	-10%	964	768	-26%	43
Map Page	15.303	14.033	-9%	9.629	8.641	-11%	21

Table 8. Matomo analytics for the period 01/06/2018 – 30/09/2018[8]

EMOdnet Physics internal analytics reports the following:

Page name	Last report	Actual report	trend
Landing Page	3444	2968	-16%
Map Page	5511	37251	+85%

Table 9. EMODnet Physics analytics for the period 01/06/2018 – 30/09/2018[9]

[7] http://piwik.vliz.be/index.php?module=CoreHome&action=index&idSite=25&period=day&date=yesterday&updated=5#?idSite=25&period=range&date=2018-07-01,2018-09-30&category=Dashboard_Dashboard&subcategory=1

[8] http://piwik.vliz.be/index.php?module=CoreHome&action=index&idSite=25&period=day&date=yesterday&updated=4#?idSite=25&period=range&date=2018-07-01,2018-09-30&category=General_Actions&subcategory=General_Pages

[9] http://www.emodnet-physics.eu/map/Service/Indicators/Section30.aspx

Map page shows a huge increase in views, logs show that views are mainly from Australia and United States. Given that the EMODnet/SOOS child portal was updated with new data, and that the views on the SOOS mapviewer are generating traffic on EMODnet Physics (parent portal) this data is coherent and proof the importance of the provided service.
Moreover, MATOMO seems not to be properly configured to monitor the most relevant web pages because it reports e.g. only 3 access to the "Video" and 1 to "catalog[10]" while EMODnet Physics registered 31 and 260 rispectively. The supplied excel with indicators is therefore filled with figures from the EMODnet Physics analytics.

It is not possible to report on Indicator 6.4 and 6.6 because we have not any access to the proposed/adopted SEO assessment – monitoring tool:
https://it.semrush.com/tracking/overview/1323182.html?domain_1=www.emodnet-physics.eu&date_begin=20180404&date_end=20180630&page=1

Indicator 7 – Technical Monitoring and portal user-friendliness

Indicator 7.1 – Website availability
This data is monitored (and reported) by TRUST-IT, it would be very useful to have access to this data continuously, e.g. by means of a web page or a web link.

Indicator 7.2.1 – the average duration of the visit (MATOMO) is 8 minutes and 42 seconds (period 01/07/2018-30/09/2018).

Indicator 7.2.2 – Visual harmonization score. EMODnet Physics was updated to be compliant with last missing two elements (favicon and GRDP).

Indicator 8 - List of web-services made available and organisations connected through these

Service	Description	Examples
PermaURL	All platforms	http://www.emodnet-physics.eu/map/platinfo/piradar.aspx?platformid=10273

[10] EMODnet Physics Catalog is now based on GeoNetwork, the landing portal (http://www.emodnet-physics.eu/portal/catalogue) provides the user with the link to the new catalog (catalog.emodnet-physics.eu/geonetwork)

		http://www.emodnet-physics.eu/map/platinfo/pidashboard.aspx?platformid=10273 Service description @ http://www.emodnet-physics.eu/map/spi.aspx
API REST/SOAP	Latest 60 days of data	www.emodnet-physics.eu/map/Service/WSEmodnet2.aspx www.emodnet-physics.eu/map/service/WSEmodnet2.asmx
OGS WMS, WFS, WCS	Postgresql + Geoserver	geoserver.emodnet-physics.eu/geoserver/web examples and service description @ www.emodnet-physics.eu/map/service/GeoServerDefaultWMS www.emodnet-physics.eu/map/service/GeoServerDefaultWFS
THREDDS (OpenDAP, WMS, WCS)	Latest 60 days + HFR data + Ice	thredds.emodnet-physics.eu/thredds/catalog.html
ERDDAP	Latest 60 days	erddap.emodnet-physics.eu
Widgets	All plots	www.emodnet-physics.eu/Map/Charts/PlotDataTimeSeries.aspx?paramcode=TEMP&platid=8427&timerange=7

Table 10. Interfaces to access or view data

Note: Widget have been recently updated to match CMEMS INSTAC needs.

Indicator 8.1.1
The process of reorganization of the services vs product mapping is on going, this re-mapping activity is influencing the table 8.1.1 that will be updated in next report. In this reporting period, we consider Table 10 as a summary of the interfaces to access or view data

Indicator 8.2.1
Volume of downloadable data is the number of platforms with a given parameter. Number of manual downloads is the number of download requests for a given platform/section.

The user can download data from each platform-page. If the user selects one day, or one month or 10 months of data, EMODnet Physics counts this such as one single download. If the user interacts with the map viewer-boxing feature, and selects and download data for a number/list of platforms, EMODnet Physics counts it as one single download request. Either the users downloads one day of data or the full DB, if the user is doing this in one single action, EMODnet Physics counts it as one single download request (it is replicated in case the platform/file contains more than one parameter)

Tracking tools to report Indicator 8.2.1 are going to be updated during next period in order to be able to report on the number of requests on the WMS, WFS, ERDDAP, WIDGET interfaces by using the same unit/metrics it is used for the manual download.

Indicator 8.2.2

External Data Products. It is considered an External data product the one on which EMODnet Physics is not doing any action/processing/optimization and it is only re-distributed. The number of external product is zero.

Indicator 8.2.3

As planned, we are now reporting usage on product-themes in coherence with the new catalogue. It is not possible to present trends yet because for the previous reporting period we were using a different metrics.

Indicator 10 - Published use cases and number of readings

Indicator 10

Several use cases have been published on the central portal[11], and a couple more are going to be published by end of the year.

EMODnet Physics has not access to the number of readings.

[11] http://www.emodnet.eu/use-cases?field_portal_taxonomy_tid=28