EMODnet

European Marine Observation and Data Network

EMODnet Thematic Lot n°3 - Physics

EASME/EMFF/2018/1.3.1.8/Lot3/SI2.810790

Start date of the project: 26/08/2019 - (24 months)

EMODnet Phase III – Quarterly Progress Report (6)

Reporting Period: 01/10/2020 – 31/12/2020

The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

Contents

Disclaimer

1. Highlights in this quarter

Status of the Milestones and Deliverables listed in the workplan				
Milestone/Deliverable	WP	Date due	Status (Delivered/Delayed)	If Delayed: reason for delay and expected delivery date
D1.1 - Event - Kick-off meeting (Required)	WP1	30/09/19	Delivered - KOM took place 07-08/11/2019	
D3.1 - Portal - Portal on line (Required)	WP3	30/09/19	Delivered - Portal on line from day 1	
D3.2 - service - Monitoring tools (Required)	WP3	15/10/19	Delivered – Monitoring tools active from day 1	
D4.1 - Service - Help desk service (Required)	WP4	15/10/19	Delivered – HD on line from day 1	
D4.2 - Service - User feedback monitoring service (Required)	WP4	15/10/19	Delivered – user feedback monitoring and management active from day 1	
D1.2 - Document - quarterly Progress Reports (Required)	WP1	15/10/19	Delivered	
D4.3.1 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/10/19	Delivered – as section of D1.2	
D4.4.1 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/10/19	Delivered – as section of D1.2	
D4.5.1 - Report - Progress update on promotion activities (Required)	WP4	15/10/19	Delivered – as section of D1.2	
D1.3 - Document - quarterly Progress Reports (Required)	WP1	15/01/20	Delivered	
D4.3.2 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/01/20	Delivered – as section of D1.3	
D4.4.2 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/01/20	Delivered – as section of D1.3	
D4.5.2 - Report - Progress update on promotion activities (Required)	WP4	15/01/20	Delivered – as section of D1.3	
D2.3 - Document - 1st report on data products specifications, sources and methods of integration into the portal (Internal)	WP2	28/02/20	Delivered	
D3.3 - Service - EMODnet Physics catalogue v.1 (internal)	WP3	28/02/20	Delivered - update and review of the entries in EMODnet Physics GeoNetwork instance	
D1.4 - Document - quarterly Progress Reports (Required)	WP1	15/04/20	Delivered	

D4.3.3 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/04/20	Delivered – as section of D1.4	
D4.4.3 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/04/20	Delivered – as section of D1.4	
D4.5.3 - Report - Progress update on promotion activities (Required)	WP4	15/04/20	Delivered – as section of D1.4	
D1.5 - Document - quarterly Progress Reports (Required)	WP1	15/07/20	Delivered	
D4.3.4 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/07/20	Delivered – as section of D1.5	
D4.4.4 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/07/20	Delivered – as section of D1.5	
D4.5.4 - Report - Progress update on promotion activities (Required)	WP4	15/07/20	Delivered – as section of D1.5	
D1.6 - Document - Interim Report (Required)	WP1	26/08/20	Delivered	
D2.1 - Document - Documentation and guidance on data flow harmonization (including machine to machine connections specs) (Required)	WP2	26/08/20	Delivered (updated version in attach)	
D2.2 - Document - Report on data sources evaluation and methods of integration into the portal (Internal)	WP2	26/08/20	Delivered (updated version in attach)	
D2.6 - Document - Report on M2M services (internal)	WP2	26/08/20	Delivered (updated version in attach)	
D3.3 - Service - EMODnet Physics catalogue v.2 (internal)	WP3	26/08/20	Delivered - new/updated EMODnet Physics GeoNetwork instance	
D1.7 - Document - quarterly Progress Reports (Required)	WP1	15/10/20	Delivered	
D4.3.5 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/10/20	Delivered – as section of D1.7	
D4.4.5 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/10/20	Delivered – as section of D1.7	
D4.5.5 - Report - Progress update on promotion activities (Required)	WP4	15/10/20	Delivered – as section of D1.7	
D1.8 - Document - quarterly Progress Reports (Required)	WP1	15/01/21	This report	

D4.3.6 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/01/21	Delivered – as section of D1.8	
D4.4.6 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/01/21	Delivered – as section of D1.8	
D4.5.6 - Report - Progress update on promotion activities (Required)	WP4	15/01/21	Delivered – as section of D1.8	
D2.5 - Document - 3rd report on data products specifications, sources and methods of integration into the portal (Internal)	WP2	28/02/21		
D3.3 - Service - EMODnet Physics catalogue v.3 (internal)	WP3	28/02/21		
D1.9 - Document - quarterly Progress Reports (Required)	WP1	15/04/21		
D4.3.7 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/04/21	– as section of D1.9	
D4.4.7 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/04/21	– as section of D1.9	
D4.5.7 - Report - Progress update on promotion activities (Required)	WP4	15/04/21	– as section of D1.9	
D1.10 - Document - quarterly Progress Reports (Required)	WP1	15/07/21		
D4.3.8 - Report - Statistics from HD service and user satisfaction (Required)	WP4	15/07/21	– as section of D1.10	
D4.4.8 - Report - Progress and actions about the Involvement of RSCs (Required)	WP4	15/07/21	– as section of D1.10	
D4.5.8 - Report - Progress update on promotion activities (Required)	WP4	15/07/21	– as section of D1.10	
D1.11 - Document - Final Report (Required)	WP1	26/08/21		
D2.4 - Document - 2nd report on data products specifications, sources and methods of integration into the portal (Internal)	WP2	26/08/21		
D2.6 - Document - Update on M2M services (internal)	WP2	26/08/21		
D3.3 - Service - EMODnet Physics catalogue v.4 (internal)	WP3	26/08/21		

Table 1. Milestone and Deliverables

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

During the period the focus was on keeping updating the backend infrastructure to have ERDDAP and GeoServer as the core data servers (see Figure 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

As planned the following products are now avaialble on the system and ready to be promoted by Secretariat:

- Sea Level: EP_MAP_SLEV_007 - Sea Level product presenting information about the completeness and time extension of the Revised Local Reference (RLR) monthly means sea level timeseries (as processed by PSMSL)

https://www.emodnet-physics.eu/map/Products/EP_MAP_SLEV_007/

- Sea Level: EP_MAP_SLEV_006 - Sea Level trend product integrating both re-processed altimetry data (from 1993 to 2018) and RLR PSMSL data.

https://www.emodnet-physics.eu/map/Products/EP_MAP_SLEV_006/

During the period we developed and updated the following page products:

- Sea Surface Currents: EP_MAP_RVFL_001 (13/11/2020), the product is an update of the Sea Surface Currents as recorded by HFR

https://www.emodnet-physics.eu/map/Products/EP_MAP_RVFL_001

- River Proxy Runoff: EP_MAP_RFVL_001 (15/12/2020), the product integrates river proxy data covering the period 2008-2018 and covering and IBI, NWS. The product also includes shape files of major rivers and major river basins (from GLOFAS).

https://www.emodnet-physics.eu/map/Products/EP_MAP_RFVL_001/

These also are available and ready to be promoted by Secretariat according the new joint procedure

EMODnet Physics Products Entry Into Service timing

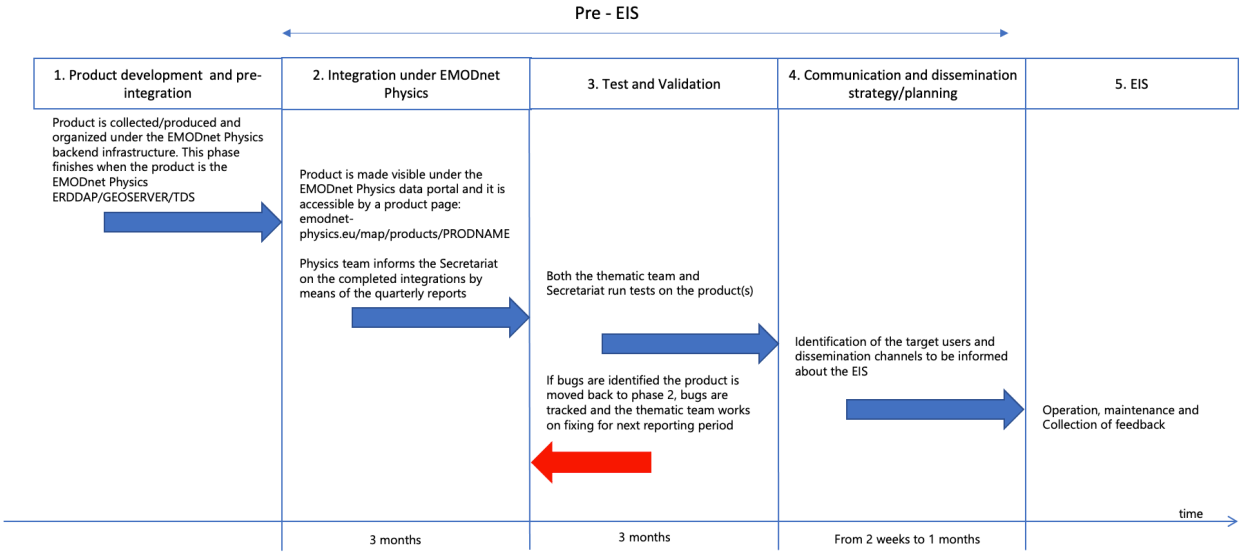

Figure 1. proposed Entry into Service workflow.

We are working on re-organization of metadata access and its presentation to facilitate the user to identify the data sources (particularly when data is availble from several sources).

Also to mention the deliverable from the GHER, University of Liège, on the interpolation of velocity measurements obtained from the EMODnet Physics portal, using an innovative software tool, DIVAnd. The code developed specifically for the project (data reading, plotting etc) is stored on the ULiège GitLab repository: https://gitlab.uliege.be/gher/diva-emodnetphysics.

The code developed for the interpolation of high-frequency radar data is available on GitHub: https://github.com/gher-ulg/DIVAnd_HFRadar.jl

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

The focus of the M2M services to the users is on making it easier for users to get scientific data. As anticipated in the previous reports the backend has started being reorganized to collects data from federated structure of providers and make it available in the EMODnet Physics catalogue (ERDDAP - GeoServer)[1] and hence in the map viewer[2].

[1] erddap.emodnet-physics.eu

[2] www.emodnet-physics.eu/map

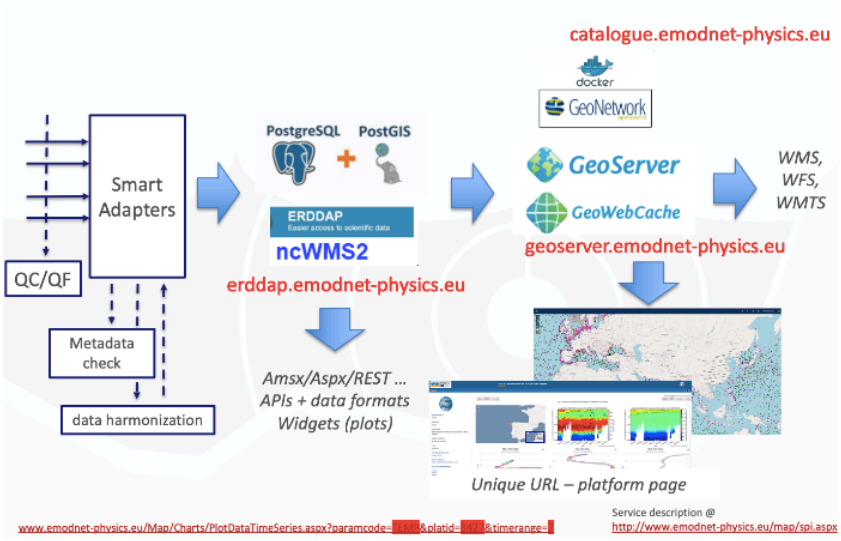

Figure 2

The user can discover the available data and products on the map viewer and then use one of the available M2M interface or services to interact with data automatically.

It is wort to mention that in a recent GOOS webinar (GOOS Webinar: A FAIR-based tool for improving Global Data sharing) ERDDAP has been strongly recommended as the data platform of choice to enable and support FAIR (Findable, Accessible, Interoperable and Reusable) data principles, proofing that EMODnet Physics is matching and somehow anticipating global recommendations on M2M.

As part of the M2M connection task and in collaboration with Data Ingestion the following datasets were are added/linked and are available under the EMODnet Physics and EMODnet Physics ERDDAP catalogue:

Rivers:

- PoRiver (Italy), MinoTeaenponteareas, MinoOurense, CallosaDeEnsarriaAlgar, FuenteDelBanoPalancia, HuertoDeMuletJucar, LaPresaDeVillarrealMijares, LaPresaTuria, VillalongaSerpis (Spain)

Sea Level - Fast data from University of Hawaii Sea Level Center

https://erddap.emodnet-physics.eu/erddap/tabledap/UHSLC_global_daily_fast.html

https://erddap.emodnet-physics.eu/erddap/tabledap/UHSLC_global_hourly_fast.html

Sea Level - JRC Tsunami Alert Device network – the first package of TAD stations (7 stations @08/01/2020) data is start flowing into the system

https://erddap.emodnet-physics.eu/erddap/tabledap/TAD_Tsunami_Alert_Device.html

Marine Insitute - SmartBay

https://erddap.emodnet-physics.eu/erddap/search/index.html?page=1&itemsPerPage=1000&searchFor=SmartBay

Task 4. Maintain and further develop a thematic web portal allowing users to find, visualise and download data and promote the data and data products of the portal

As planned and and anticipated under task 2, activities on Sea Level Trends continued and two new products are ready to be published.

A new landing page was developed and published. The new landing page is developed on wordpress which makes it more responsive and solved the identified issue 4 Table 3.

The new landing page was tested by the SSL tools that also confirmed a better security level ranking.

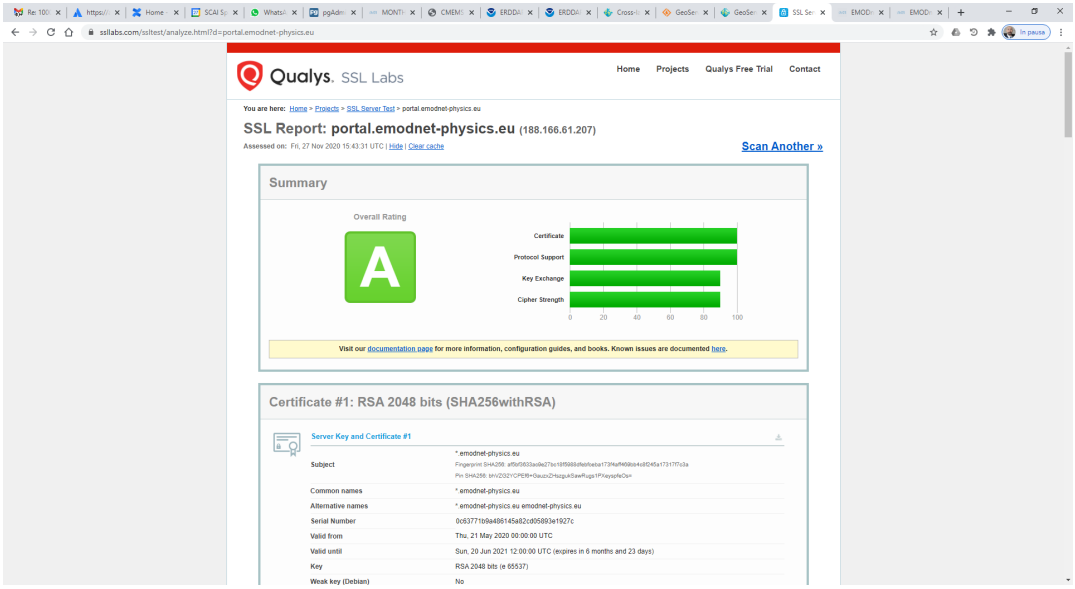

Figure 3.

Task 5. Ensure the involvement of regional sea conventions

In the previous period, a series of (web) meetings with the Italian TG NOISE co-chair (F. Borsari) permitted to define a new product to be developed and published under EMODnet Physics. The product concept and request for missing metadata has been sent to TG NOISE officer (Ms Casier) and TG NOISE chairs. This generated some interaction with some TG NOISE members and in collaboration with ICES we organized 2 meetings with OSPAR, HELCOM to discuss about the metadata and metadata flow. ICES is already a central point for collecting station metadata for both OSPAR and HELCOM. ICES agreed to extend its registry and privide EMODnet Physics with requested metadata. As soon as the agreed update in the ICES registry is available it will to initiate the integration and product development.

During the period TG NOISE completed the work on the Assessment framework for threshold values for continuous sound and setting of threshold values. Based on results of the BIAS, the JOMOPANS, JONAS and QuietMed projects as well as results established in HELCOM and OSPAR conventions, TG NOISE advises the Member States to adopt a stepwise framework for assessing continuous sound.

1) Define habitat and key species
2) Decide on Attention level
3) Define Marine Reporting Units and evaluation periods

4) Assessment of the status by either using measurements or modelling or both:
    a. Acquire information on species, ship traffic, properties of sources, properties of environment and habitat and animal density
    b. Validate model by using measurement data from monitoring program and produce confidence maps
    c. Evaluate the Reference Condition for the assessment area and period
5) Evaluate the Excess based on the Attention Level
6) Evaluation of criteria to set a threshold value for GES
7) Determination of GES status
8) Re-execute every six-year cycle

In this framework, EMODnet Physics can be one of the source for ocean physics properties for the models, hence the integration and publiction of the new delivered Temperature and Salinity climatology (from the SDN NODCs network) is an important deliverable for coming months.

Task 6. Install a process to monitor performance and deal with user feedback

The subtask "deal with user feedback" goes together with task 7. Concerning the process to monitor performances, EMODnet Physics is implementing matomo for collecting views on the landing and map page. It uses logs to extract the traffic/requests/manual downloads/interaction with services. For manual downloads from the Mapviewer (www.emodnet-physics.eu/map) authentication is requested for downloading data (older than 60 days) from coastal fixed stations and data products coming from CMEMS INSTAC.

Besides the automatic system monitoring, the EMODnet Physics team is , on a daily basis, supporting its users comminities to understand and assess the fit-for-scope of the system and during the reporting period there were interactions with WP2 and WP3 EMOD-PACE partners to identify and list in situ platforms to be used in the EMOD-PACE related assessment and products development. The interaction with WP3 also contributed to define a new naming convention for the ERDDAP datasets, more specifically the new dataset will follow the following convention:

SOURCE_ERD_PROCESSINGLEVEL_PARAMETER_PLATFORMTYPE_ACQUISITIONFREQUENCY_REGION

e.g. PSMSL_ERD_L2_SLEV_TG_1M_GLO is the Sea Level Monthly mean data from Global network of Tide Gauge linked to PSMSL

Task 7. Operate a help desk offering support to users

EMODnet Physics is providing an online help desk feature to deal with users. Any request gets an id to track and manage the feedback time. Table 4 lists the collected interactions.

It is worth mention that EMODnet Physics is now powering the ARCTIC DATA PORTAL (arctic.emodnet-physics.eu) which was officially presented in December (more than 100 international attenders) and it is intended to serve the Arctic community as the SOOSmap portal is serving the Antarctic Oceans community.

Moreover, EMODnet Physics took part to the AniBOS kickoff meeting (26/11/2020), this community is organizing and expanding the collection of data with tagged animals worldwide. One task for EMODnet Physics will be to support AniBOS in setting up thematic data management and harmonization workshops.

http://osmc.noaa.gov/erddap/tabledap/MEOP_profiles.html

https://erddap.emodnet-physics.eu/erddap/tabledap/EP_ERD_MEO_ALLP_AL_PP_GLO.html

2. Identified issues: status and actions taken

The following tables reports pending actions from the previous report and new identified priority issues.

A. Priority issue(s) identified and communicated by EASME/ DG MARE/ SECRETARIAT					
	Priority issue	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
EM-87	MetadataUrl and DataUrl fields	Pending	Work on the request	As soon as possible	
1	INSPIRE Metadata	Pending	There is a list of layers on the EMODnet Physics GEOSERVER under the "emodnet" workspace that are still failing INSPIRE checks. The new workspace "emodnet_products" that is offering the new layers for the ATLAS is ok INSPIRE compiance was widely discussed during last TWG, the common action will be adopted	On hold	
2	Online Survey banner for Portal display (removal)	Resolved	EMODnet Physics Landing page updated according instruction from Secretariat an		08/10/2020
3	GeoServer down	Resolved	There were a series of concomitant problems: a first problem was at the serverfarm that was out of line for about one day, then there was a problem in the VM hosting Geoserver and GeoNetwork (it seemed a problem of mem sharing resource between the two catalogues). Eventually we deployed a cronjob to re-boot of Goserver daily and we switched off (18/9/2020) the automatic refresh of the GeoNetwork catalogue.		11/09/2020
4	Overall web portal performances Landing page	Resolved	Landing page and mapviewer page seem to load slowly. To solve the issues the team implemented some of the planned updated that are designed to move towards the centralization of the services. The approach consists of splitting the services (landing page, map portal, backend DB services, products server …) over different machine and tools. Landing page is now developed on a WordPress CMS.		15/12/2020
5	Overall web portal performances Mapviewer page	Pending	Landing page and mapviewer page seem to load slowly. To solve the issues the team started implementing some of the planned updated that are designed to move towards the centralization of the services. The approach consists of splitting the services (landing page, map portal, backend DB services, products server …) over different machine and tools.	Almost ready – planned - 15/1/2021	
EM-53	Provide -European scale TEMP climatology product (based on SDN regional products)	Pending	Organized under mapproxy. Central portal is checking/working for its central integration – it is still missing a minor	soon as possible	

			update on the OCG service to expose the legend soon as possible – end of the year		
EM-124	DG MARE request: Report monthly number of downloads and volume downloaded by 6th of January 2020	Resolved	Stats collected and delivered	28/12/2020	
	Updated list of partners and subcontractors	Resolved		01/10/2020	

Table 2. Priority issues identified by EASME/ DG MARE/ Secretariat

B. Issues / challenges identified by the thematic assembly group itself					
	Priority issue / challenge	Status (Pending/ Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
EP1	Update the method that is processing the monthly averages from operational data	Resolved	Updated the script/connector data mekes the data available in the ERDDAP	Autumn 2020	23/10/2020
EP2	We use the WMO as platform id. Lately some of the platforms with old 5-digit WMO codes are also delivered with the new 7-digit code. This impacts the name of the NetCDF files that are distributed and the user may find duplicates in the system	Pending	Cross check and cleaning/declaring of duplicates. More specifically we are updating the system to be able and present when data is avaialble from more EMODnet Physics sources.	We cannot set a deadline because the update of the WMO is not depending on EMODnet Physics. We can only check and correct when an issue is identified.	
EP3	Updates to the Norwegian tide gauge network	pending	In 2019 the Norwegian Hydrographic Service corrected a set of known errors in the tide gauge records. These updated refer to data back to 2007. New data have to be overwritten on previous ones.	As soon as possible. This task also involves the support/collaboration of CMEMS INSTAC	
EP4	PANGAEA CTD synch	Pending	Thanks to the collaboration with SOOS International Project Office it was possible to identify a problem with the synch procedure of the PANGAEA CTD data due to an update to the PANGAEA metadata format.	We had a techincal (call) meeting on 05/10/2020 to discuss about the new metadata format to be able and develop the fix for re-connecting the two systems.	Nov 2020
EP5	Electrical failure products servers Problem started 20/10/2020				23/10/2020
EP6	Avaialbility of the WIND_001		As a consequence of the issues @one of the products server transfer, the WIND product was not continously avaialble		

Table 3. Priority issues identified by Physics group

3. User feedback (Contact Us form, online chat & other communication means)

Overview of user feedback and/or requests received in this quarter							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query: resolved/pending	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
30/09/2020	VLIZ	Tech – trouble fining the wind data before 2020	HD	1 day	Resolved	Feedback by email	
19/10/2020	Marine & Freshwater Research Institute	Tech – wrong metadata	email via Secretariat HD	1day	Resolved	Metadata updated	
03/11/2020	US NAVY	Tech – support to identify and download Med subskin TEMP data	HD	1 day	Resolved	Feedback and instructions by email	
25/11/2020	Mercator Ocean	Tech – information on Sea Level data aggregation	HD	1 day	Resolved	Feedback by email	
25/11/2020	US NAVY	Tech – support to find in situ ship measurements	HD	1 day+ 40 days	Resolved	Feedback and instructions by email	After the preliminary automatic feedback, there was spam filter problem in the mailing service that blocked the email
26/11/2020	NIB	Tech – VIDA buoy not visible	email	1 day	Resolved	There was a problem in the data transfer with MED DAC	

03/12/2020	FMI	Tech – identified a minor error in location metadata of on FMI buoy	HD	1 day	Resolved	Corrected	
03/12/2020	DMI	Tech – support to download fishing vessels data	email	1 day	Resolved	Feedback and instructions by email	
21/12/2020	DASSH - Plymoth	Tech – support to download temp and salinity climatology	Email	1 day	Resolved	1 day first feedback, 3 days to make the package ready	
28/12/2020	Uni Manitoba Canada	Tech – information on the EMODnet Physics – Arctic portal	email	1 day + 7 days	Resolved	1 day immediate feedback, details provided by email after the Seasons break	

Table 4. User feedback

4. Meetings/events held/attended & planned

A. Meetings/events Organized and attended					
Date	Location	Type event (internal or external meeting, training/workshop)	Indicate if a ppt was given (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
1/10/2020	web	Meeting with the ENI Chief Financial Officer	Yes	O	Present activities under EMODnet Physics and Data Ingestion and try and involve ENI to share data
2/10/2020	web	VOTO, Voice of the Ocean	Yes	O	To present Background on EMODnet, EMODnet Physics and data Ingestion together with describing the European data flows. VOTO are launching a number of smart autonomous platforms into the Baltic Sea. This was the first meeting with this new Baltic initiative to initiate discussion on data sharing with EMODnet
5/10/2020	web	Tech meeting with PANGAEA	No	O	To identify and fix the synch problem between EMODnet Physics – SOOSmap and PANGAEA
6-7/10/2020	Web	TG NOISE	No	A	Periodic TG NOISE meeting
10/10/2020	web	WP5 AAnchor project	No	A	All-Atlantic Ocean Research Alliance is the result of science diplomacy efforts involving countries from both sides of the Atlantic Ocean which aims at enhancing marine research and innovation cooperation along and across the Atlantic Ocean, from the Arctic to Antarctica – WP5 is designed to bring together stakeholders and work together on common goals. EMODnet Physics will contribute/participate to the

					stakeholder workshops that are planned later 2021.
12/10/2020	web	IODE International data sharing workshop	No	A	Workshop for non-UN IGOs, Global and Regional organisations and projects, NGOs and private sector
15/10/2020	web	European Polar Board Plenary	Yes	A	Present on Polar activities within EMODnet Physics
20-21/10/2020	web	Marine data to support aquaculture in the North Atlantic Workshop	No	A	The event is jointly organized by EATiP, DG MARE, DG DEFIS, Copernicus Marine and EMODnet with the goal to discuss and link new marine data in support to aquaculture activities
21-22/10/2020	web	NAUTILOS Project KO	Yes	A	EMODnet Physics is partner in the project with role related to data interoperability and ingestion of project data
27-30/10/2020	web	SeaDataCloud Annual (final) meeting	No	A	Brainstorming on joint activities to link and make available more data.
3-5/11/2020	web	SO-CHIC Annual meeting	Yes	A	Discuss about interoperability between the project and EMODnet Physics and Data Ingestion
4-6/11/2020	web	BOOS AM	No	A	Annual meeting. Presenting on EMODnet, EMODnet Physics progress, data ingestion, initiate a BOOS river task, new possible data sources
06/11/2020	Web	EMOD-PACE WP2 meeting	Yes	O	To progress on EU-China interoperability on ocean observing systems
9-10/11/2020	web	EMODnet SC	Yes	A	Periodic meeting. Brainstorming, common standards, joint activities, etc.

11/11/2020	web	Continuous noise tech meeting with ICES	Yes	O	To discuss about the proposed product on continuous noise monitoring stations asset mapping
11-12/11/2020	web	EMODnet TWG	Yes	A	Periodic meeting. Brainstorming, common standards, joint activities, etc.
16-19/11/2020	web	WMO Data Conference	No	A	The Conference aims to develop a common understanding from all sectors of the roles, requirements and arrangements for international exchange of observations and other data for monitoring and prediction of the Earth System environment, including weather, climate and water.
18-19/11/2020	web	AniBOS meeting	No	A	Brainstorming on joint activities to link and make available more data.
20/11/2020	Web	Arctic Data Portal KO	Yes	A/O	Following the SOOS experience, EMODnet Physics will host a dedicated data portal for the Arctic community. The goal of the workshop is to define actions (EMODnet Physics, Ingestion, CMEMS INSTAC, SeaDataNet, etc) to unlock and link new and more arctic data.
23/11/2020	Web	Tech call with IBM Research Europe	Yes	A/O	Organized by EMODnet Secreteriat Tech coordinator - Discussion on interoperability between EMODnet Physics and IBM RC
26-27/11/2020	Web	MOONGOOS Annual Meeting	No	A	Progress on Med data management and user needs
02/12/2020	Web	EMOD-PACE WP2 meeting	Yes	O	To progress on EU-China interoperability on ocean observing systems
03/12/2020	web	Continuous noise tech meeting with ICES, Helcom and Ospar	No	O	To discuss about the proposed product on continuous noise monitoring stations asset mapping

04/12/2020	Web	TG NOISE workshop	No	A	To discuss and finalize the technical note on TG NOISE advise for the assessment of continuos noise
SUM				**O**	**Total # of meetings organised = 9**
SUM				**A**	**Total # of meetings attended = 17**

Table 5. Meetings/events held/attended

B. Meetings/events planned in the future				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
06/01/2021	Web	Tech meeting - ODP/C4IR	A	Discuss interoperability between EMODnet Physics and ODP/C4IR
12-14/01/2021	Web	EuroGOOS Tide Gauge Task Team Workshop	A	
14-15/01/2021	Web	QUITEMED2 annual meeting	A	
18-22/01/2021	Web	EuroSEA annual meeting	A	
25-28/01/2020	Web	EMOD-PACE annual assembly	A	
3-7/03/2021	Oostende, Belgium	EMODnet Open Conference and Jamboree 2nd Edition initially programmed from 21st to 25th of September 2020 will be postponed to Spring 2021.	A/O	Due COVID-19 situation the organizing committee decided to postpone the event to 2021
23-25/03/2021	Gothenburg, Sweden,	Ferrybox Workshop	A/O	Due COVID-19 situation the organizing committee decided to postpone the event to 2021
23-25/03/2021	Gothenburg, Sweden,	HFR Workshop	A/O	Due COVID-19 situation the organizing committee decided to postpone the event to 2021
12-14/04/2021	Amsterdam, Netherlands	IMDIS Conference	A	Due COVID-19 situation the organizing committee decided to postpone IMDIS 2020 conference to 2021

May 2021(TBC)	Genoa, Italy	Fishing for Data 2 workshop	O	The goal is to have the planned physical workshop that was postponed due the COVID-19 situation.
May-June 2021	Brest, France	EuroGOOS International conference	A	The conference provides a forum for a broad range of implementers and users of operational oceanography services, including marine scientists and technologists, private companies, and policymakers. The conference reviews the present ocean monitoring and forecasting capacities and oceanographic services, and identifies new science and technology priorities. It facilitates dialogue, experience sharing and future planning with both European and international partners and stakeholders, towards a more coordinated response to global challenges and societal needs related to seas and oceans https://eurogoos.ifremer.fr/
16-18/06/2021	Vigo, Spain	MARETECH Workshop	A/O	Due COVID-19 situation the has decided to postpone the IX International Workshop on MARine TECHnology

Table 6. Meetings/events planned

5. Communication assets

[List all the relevant communication and dissemination products and assets you have developed since the start of the project phase (provide date) (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a total number for every type of communication product you have developed (e.g. total # of press releases, etc.) or provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]

A. Communication products				
Date	Communication material	Short description (of the material, title, …) of the asset	Main results	Name of event at which material was disseminated (if applicable)

Table 7. Comminunication products

Besides the presentations that we made for the events listed in section 4 there is nothing more to report.

B. Planned communication products			
Date	Communication material	Short description (of the material, title, …) and/or link to the asset	Main results expected
	video	How to - Discover data in EMODnet Physics - Find M2M services - Play with widgets - Query on ERDDAP	Engage more users
	Short paper	BIG – Italian Cluster on Blue Innovation and Growth newsletter	Present EMODnet to the BIG associates

Table 8. Planned communication

[For the reporting period, please list all publications, e.g. peer-reviewed journals, book chapters, conference papers, etc.) of which you are aware, within the reporting period, including a reference to the EMODnet data or data products which is being discussed.]

List of known publications using EMODnet data or data products				
Date	Type and name of journal, conference, …	Publication title including DOI (if known)	Author(s)	Organisation(s)
29/10/2020	FMARS	10.3389/fmars.2020.485512	Van Vranken et al.	

Table 9. Publications

A simple search in google scholar shows more than hundreds documents between papers and projects deliverables using/citing EMODnet Physics.

https://scholar.google.com/scholar?hl=it&as_sdt=0%2C5&q=EMODnet+Physics&btnG=

6. Monitoring indicators

[Please refer to the standardised monitoring tool i.e., Matomo, to complete the monitoring and progress indicators excel template, and provide a short explanation in the table below on the numbers and trends for each indicator when possible/applicable. ***Please indicate clearly if monitoring was carried out using tools other than Matomo.****]*

Comments on the progress indicators in the excel template		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data **If you don't use the provided sea-basin figures, please indicate why you do not use them, as from when, and what do you use instead and why?**	Matomo/ other (Please state which monitoring tool was used to collate the information in each case)	EMODnet Physics input data is sparse and for this indicator we consider the "platform" as the "unit" of monitoring assessment. A platform is a logical entity that hosts data, where data maybe a single dataset (e.g. a profile in case of CTD), a timeseries (e.g. sea level station), a series of profiles (e.g. ARGO). For indicator 1.A we report on the % variation of the number of platforms for the given basin. During the periodo we completed the ingestion/federation with SOCAT-GLODAP databases that is showed by the increase in the platforms (samples and profiles) offering BGC and Optical P. For this indicator we are not using proposed figures (i.e. areas in Km^2 - line 45): are we are dealing with georeferred data and we need to use to bounding box shapes. For indicator 1.B the unit of download is measured in platforms (in coherence with indicator 1.A) while the number of downloads are measured in "requests". A request may be for a single dataset (e.g. 1 CTD) as well as a full time series (e.g. daily data for past XX years). For ice data, EMODnet Physics is integrating a satellite derived product covering the whole Arctic and Antarctic areas. This product can be only donwloaded via TDS.
B) Usage of data in this quarter		We cannot track the amount of downloaded GB yet. We are testing elastic search + kibana monitoring tools to try and extract this indicator from server logs. We keep reporting on progress and updates during qualrterly reports. Concerning the other figures, during this quarter we recorded a reduction in the manual data donwload. it is important to remember that the number of WMS and WFS reported in 1B limited to https://www.emodnet-physics.eu/Map/Service/GeoServerDefaultWMS.aspx and https://www.emodnet-physics.eu/Map/Service/GeoServerDefaultWFS.aspx, while the use of WMS/WFS layers (GeoServer) is tracked and reported under 2B. The use of APIs is in line with the previous period indicating that no major new "consumer" started using these interface.

2. Current status and coverage of total number of data products A) Volume and coverage of available data products **If you don't use the provided sea-basin figures, please indicate why you do not use them, as from when, and what do you use instead and why?**		EMODnet Physics organizes data and products according the disseminitation interface therefore the volume of data is not avaialble for each single item. Apart from the European Under Water Noise Register and the TSM that only covering Europe (100% of the availble information) the other products offer global coverage. EP_MAP_WAVE_001 is covering only MED for the moment.
B) Usage of data products in this quarter		As anticipated we are reporting on Usage of data according the interface that the user is using to access data products. More specifically the mapviewer and the products pages accessible under the "Products" section are monitored in terms of visits (by matomo). This makes also possible to understand the interactions of the users and the products theme: the WIND page is by far the most viewed and used page. The second most used parameter is Sea Level. This information is particularly useful to empower those interface as well as plan updates on the less visited pages (we are in phase in which we are redesigning all the products pages to have the same look and feel as well as the same user experience). ERDDAP is monitored both in terms of visit to the erddap landing page (matomo) and in terms of transactions (downloads - by logs). THREDDS and GeoSERVER are both monitored in terms of logs.
3. Organisations supplying/approached to supply data and data products within this quarter		During the period we approached NMDIS (under the EMOD-PACE umbrella) to access chinese data - monthly Sea level data from 2017 are already availble and mapped, other data (from 2017) on the way. VLIZ was asked to provide EMODnet Physics credential to access historical sea level data - before 2016 - (VLIZ hosts the IOC Sea Level monitoring service) - the team is waiting for credentials to use the APIs. Finally ICES, OSPAR and HELCOM where approached to share the noise monitoring station dictionary.
4. Online 'Web' interfaces to access or view data		Web Services are organized per item-interface to facilitate the tracking of their use. ERDDAP, THREDDS, web APIs, Widgets, GeoServer are providing data and products without any authentication or restriction. Some of the data that are presented on the mapviewer require authentication (e.g. coastal data from European istitution - data older than 60 days). All linked datasets are unrestricted.
5. Statistics on information volunteered through download forms		During the period we collected data on 85 new users. It is important to remember that the number of users here reported is only a limited number of the EMODnet Physics users and the form is asked to be filled only to users accessing for the

		first time to data that requires authentication (i.e. coastal data older than 60 days). The majority of EMODnet Physics data are downloadable without any authentication. We need also to correct the total number of users: an error in the extraction query filtered out 205 users - i.e. the total number for the previous period was 910, that now reached 980. Academia represents the majority about 50% in the period, about 58% overall, notably the users from business/private are keeping increasing (around 20%). Concerning the list of the users per country would be good to have the possibility to avoid to group per continents: the tracking tools resolve the ips vs country that would be the best level of information granularity to be reported.
6. Published use cases		Use cases are providing examples of how EMODnet Physics data can be used for both private and public downstream applications. The one about Wave Model (DHI) is by far the most read (46 total read, reporting period). It looks like that the EMODnet use case are helping advertising of such application and compnies, while promoting their services, are linking their users to the EMODnet cases. The second most read case is about the collaboration between EMODnet Physics and CMEMS INSTAC that may depend on a some events that were presenting the collaboration (Arctic Data Portal Workshop, Aquaculture Workshop, EuroSEA annual assembly). It looks like the latest published case are not monitored yet by the TRUST-IT tool https://grafana-emodnet.trust-itservices.dev/d/KSP0WZjZz/emodnet-physics?orgId=1&from=1483138800000&to=now
8.1. Technical monitoring		The TRUST-IT technical monitoring shows that the web portal is performing well and is responsive. We anyhow recorded and reported some days of problems on the GeoServer and GeoNetwork interfaces. As described under the "issues" section, we took mitigation measures and eventually fixed the issues.
8.2. Portal user-friendliness (Visual harmonization score)		to solve some slowness problems, the landing page backend was moved to WordPress. The new page is matching well visual harmonisation (with a couple of minor items to be fixed)
9. Visibility & Analytics for web pages		EMODnet Physics mapviewer is by far the most used interface with an growing trend.

10. Visibility & Analytics for web sections		While the landing page number of unique visits per day is stable, we recorded an increase of interactions on the mapviewer. The average number of unique views is back to an average of about 5K unique visits per months that is a good indicator, although there is the potential to get back twice the number (see e.g. the peak it was recorded in early 2018). To this aim we are keeping investing effort in expanding the number of avaialble datasets and keeping easining the access and download to these data.
11. Average visit duration for web pages		The metrics are in line with the users use of the EMODnet Physics sections: while they spend a limited time on the landing (background, news…) they interact with the mapviewer and platform pages - these are the key emodnet Physics products confirming the importance of the EMODnet Physics team in keeping developing and updating them. We also note a peak in the access to the video page - this is likely due to the fact that we published the recordings of the Fishing for Data Workshop. We suggest to start centralizing the access to this kind of materials from the central portal (as for as the use cases) and have on the thematic landing pages just a list of news/links that redirect to the central system. The recently published landing page is already in line with this idea. This may represent (from the user point of view) a smooth step towards the centralization of the access to the systems.

The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo. In some cases, numbers from other monitoring systems may also be reported (e.g. Awstats, Google Analytics), and if so, must be reported in the table above. Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken when interpreting absolute numbers or comparing results from different tools. It is often more sensible to consider trends over time collected by the same monitoring tool.

7. Annex: Other documentation attached

- D2.1_EMODnetPhysics_Documentation and guidance on data flow harmonization_v.1
- D2.4_EMODnetPhysics_Report on data products specifications, sources and methods of integration into the portal_v.1
- D2.6_EMODnetPhysics_Report on M2M services_v02
- Towards Centralization Process