



# EMODnet Ingestion and safe-keeping of marine data

1st Annual Interim Report

Reporting Period: 19/05/2016 – 19/05/2017

Date: 11/06/2017

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## 1. Executive summary (750 words max)

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The ‘EMODnet Ingestion and safe-keeping of marine data’ project seeks to identify and reach out to organisations from research, public, and private sectors who are holding marine datasets and who are not yet connected and contributing to the existing marine data management infrastructures which are driving EMODnet. Those potential data providers should be motivated and supported to release their datasets for safekeeping and subsequent freely distribution and publication through EMODnet.

The new project started 19<sup>th</sup> May 2016 and is undertaken by a European consortium of 44 organisations from 29 coastal countries. Most partners are established data centres and the consortium also includes coordinators of the EMODnet thematic data portal projects.

The emphasis of activities in the first year has been put towards developing the EMODnet Data Ingestion portal and its services for ingesting and publishing data sets, developing the pathways for processing and elaborating of data submissions, laying a basis for promotion and marketing activities, and making an initial inventory of potential data sources and their providers.

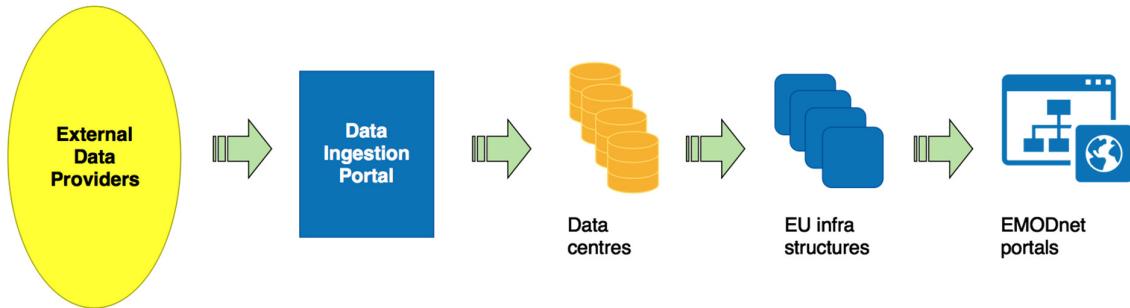
The [EMODnet Data Ingestion portal](#) has been launched early February 2017. It encourages data providers to share marine data and provides a submission service and marine data management guidance information. It aims at organisations not yet routinely submitting data sets to national data centres and not yet used to marine data management practices and standards. A low threshold is offered by splitting the completion of the submission form in 2 parts:

- **Part 1 submission form:** a number of key fields to be completed by the data submitter, including uploading of a zip file with the data sets and related documentation;
- **Part 2 submission form:** review of the received part 1 and consecutive completion of the additional metadata fields by an assigned data centre.

The EMODnet Data Ingestion portal is public domain and all submitted data sets are considered as open data. However a user registration using the Marine-ID service is required for data providers and data centres for using the Submission service with its range of functions. A distinction is made between 2 phases in the life cycle of a data submission:

- **Phase I:** from submission to publishing of the submitted datasets package ‘as is’
- **Phase II:** further elaboration of the data sets and integration (of subsets) in national, European and EMODnet thematic portals.

This split will allow to publish already in an early stage the original data package with high quality metadata.



The planned pathways follow a common workflow: data are 1) submitted by data holding organisations and published '*as is*' at the Ingestion portal with support of assigned data centres; 2) validated, processed and stored in dedicated national data centres; 3) populated in the appropriate European infrastructure (such as SeaDataNet, EurOBIS and others depending of the theme), and 4) made part of EMODnet data portals.

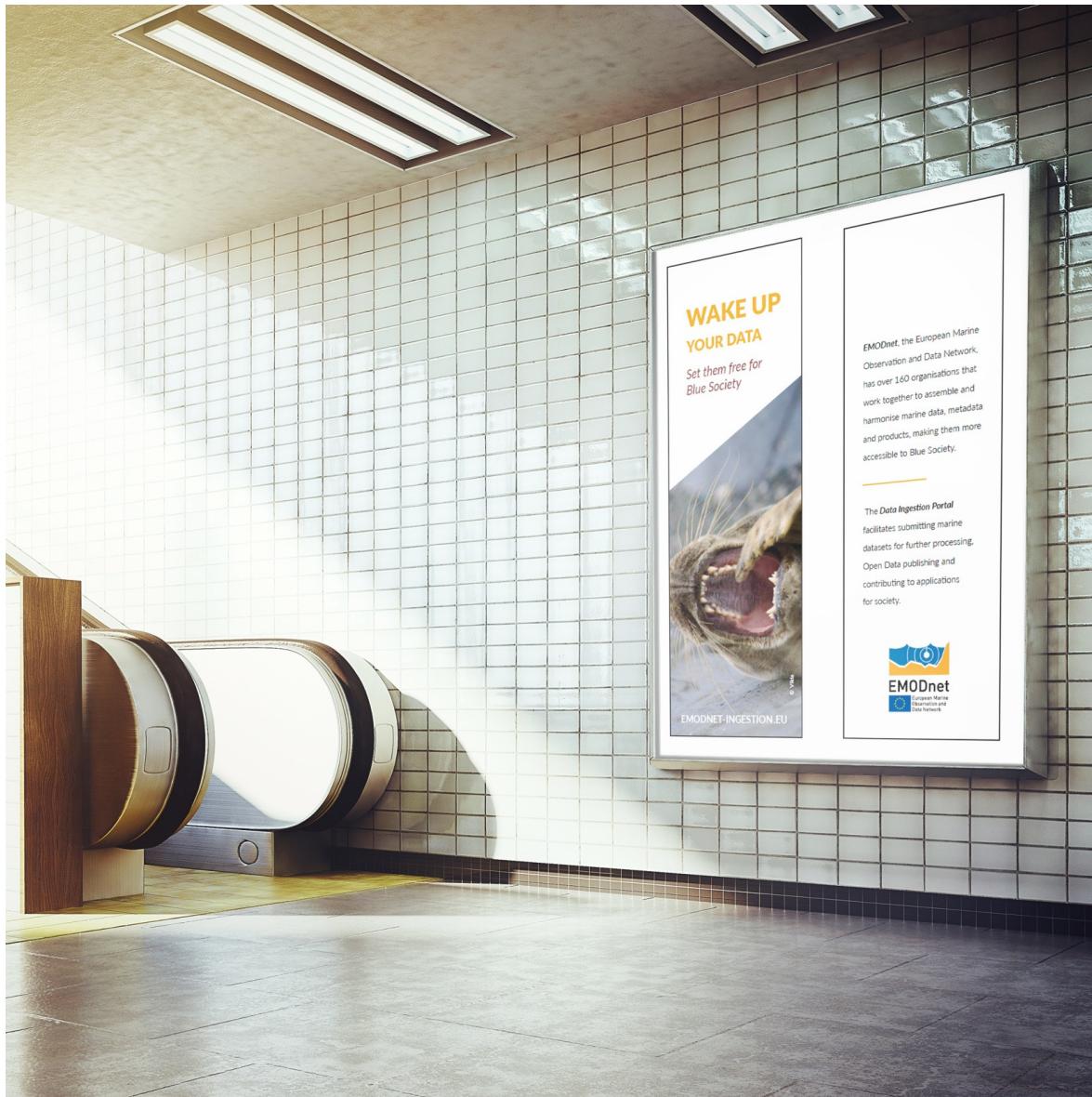
Submission forms with data packages will be assigned to qualified data centres depending on the country of the data provider and the type of EMODnet theme. With support of the Thematic coordinators the plan is pursued to engage not only the Ingestion consortium but also the groups of data centres which are involved in each of the EMODnet Thematic portals.

For operational oceanography a close cooperation takes place with EMODnet Physics. This aims at identifying and arranging inclusion of additional stations for Near Real Time (NRT) data exchange. The Data Ingestion portal explains how the NRT exchange is organised with EuroGOOS – Copernicus and guidance how to connect in practice. Furthermore good progress has been made with developing a Sensor Web Enablement (SWE) pilot for Real Time data exchange. A client service to locate stations and to retrieve data streams in a timeseries viewer will be hosted at the EMODnet Physics portal end October 2017 and 'advertised' at the EMODnet Data Ingestion portal.

Promotion and outreach activities are equally important as technical developments. In the first year it has focused on establishing cooperation and synergy within the EMODnet community. Preparatory work has been undertaken to be ready for wider outreach and marketing to potential data providers. This has been done by drafting a promotion and dissemination plan, producing promotion media, and progressing with use cases for monitoring data from offshore renewable energy projects.

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Together with all consortium members a first inventory of potential data providers per country has been compiled. This inventory covering 26 countries reporting 466 potential data sources will be followed-up in the coming years by EMODnet Ingestion members approaching and convincing those identified organisations to make use of the EMODnet Ingestion service for submitting data sets.

## 2. Highlights of the reporting period

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- The project had a kick-off meeting with participation of all consortium members at 26th – 27th May 2016 in Amsterdam – The Netherlands.
  - A Consortium Agreement has been established between the Coordinator (MARIS) and all 31 full partners of the consortium. In additional bilateral Subcontracts have been established between the Coordinator and each of the 12 Subcontractors of the consortium.
  - The submission process and related metadata form have been analysed; the completion of the submission metadata form has been split in 2 parts to offer a low threshold for data submitters:
    - **Part 1 submission form:** a number of key fields to be completed by the data submitter, including uploading of a zip file with the data sets and related documentation;
    - **Part 2 submission form:** review of the received part 1 and consecutive completion of the additional metadata fields by an assigned data centre.
- and a distinction is made between 2 phases in the life cycle of a data submission:
- **Phase I:** from submission to publishing of the submitted datasets package '*as is*'
  - **Phase II:** further elaboration of the data sets and integration (of subsets) in national, European and EMODnet thematic portals.
- The **EMODnet Data Ingestion portal** including several services has been officially launched, 7<sup>th</sup> February 2017, at [www.emodnet-ingestion.eu](http://www.emodnet-ingestion.eu). The portal gives access to:
    - General introduction and background information
    - Data Management Guidance and related documents
    - Data Submission service for Phase I, including:
      - Submission Forms service
      - User Management service
      - Process Tracking service
      - Key Indicators service
      - Functions for managing the process from submission till publishing, including assigning data centres
    - Help desk service
    - Operational oceanography exchange guidance
    - News
    - Use cases
    - Promotional material
    - Extranet for project members

- A **test version** of the Data Submission service has been set up for instructing and practicing by the data centres that are engaged in the pathways for reviewing and completing submissions.
- A **Summary Records** service has been developed for publishing the submission forms and retrieving data packages '*as is*'; it is coupled to the Data Submission service. The Summary Records service for the time being is available as Beta service and coupled to the test Data Submission service output for beta testing. The Summary Records service goes public at the Data Ingestion portal once a first set of data submissions have been completed for phase I.
- The pathways for going from submission at the EMODnet Data Ingestion portal to publishing in the EMODnet thematic portals have been analysed further. Data submitters will be coupled to qualified data centres depending on the country of the data provider and the type of EMODnet theme of the data. With support of the Thematic coordinators the plan is pursued to engage not only the Ingestion consortium but also the groups of data centres which are involved in each of the EMODnet Thematic portals. This proposal has been presented at the EMODnet Steering Committee and at kick-off meetings for EMODnet phase 3 of each of the thematic portals and further follow-up is planned to give guidance and register those additional data centres as actors in the pathways.
- The Sensor Web Enablement (SWE) pilot concerns real time oceanographic monitoring systems, allowing direct standardised access to selected data types from selected monitoring instruments. Very good progress has been made with formulating SWE profiles for selected platforms and sensors and final versions are expected end June 2017. This builds on work on-going in related EU projects to define SensorML and O&M templates such as 'AtlantOS', 'BRIDGES', 'ODIP' and "the Marine SWE profiles wiki" as well as in USA for IOOS. The ongoing work is also shared with the SWE marine community through the Marine SWE profiles wiki.
- A plan for promotion and outreach activities in the coming years involving all consortium members and supported by several promotion media has been discussed at the 2<sup>nd</sup> plenary project meeting 10th – 12th April 2017. Moreover at the meeting a first inventory of 466 potential data sources from 26 countries has been discussed. This inventory provides a basis for the outreach activities.

## 3. Challenges encountered

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The following challenges have been encountered during the project so far. These have been discussed between partners and (largely) solved as can be seen in the table below.

<b>Partner</b>	<b>Challenges encountered</b>	<b>Short description</b>	<b>Measures to address challenges</b>
Technical Working Group	Analysis and design of submission process workflow	The challenge for EMODnet Ingestion is to offer a low threshold for potential data providers for providing data input while aiming for high quality output.	Submission form has been split in 2 parts: the first part is completed by the data submitter while a qualified data centre is assigned to review part 1 and the data package and then to complete part 2 of the submission form in communication with the data submitter.
Technical Working Group	Analysis and design of pathways from submission to publishing	The challenge for EMODnet Ingestion is to offer a relatively fast throughput of ingested data towards publishing while ingested data sets might give complications.	The workflow of the pathways has been divided over 2 phases. Phase I concerns the publishing of the ingested data package ' <i>as is</i> ' together with the completed and quality controlled submission form. Phase II concerns the further elaboration of (subsets) of the data package for integration into national database systems, European data infrastructures and EMODNet thematic portals which might much more efforts and time.
Technical Working Group	Providing technical means for engaging qualified data centres in the pathways and implementing tracking .	Ingested submissions must be checked and processed by qualified data centres while data submitters are kept informed about progress.	The submission service works with 3 actors - data submitters, data centres and master – which have different roles and authorisation levels. Data centres are maintained by master in an internal DC Catalogue and from there assigned to submissions. Data submitters are informed by tracking info in their submission forms of the data centre assignment and further logs that are kept by the data centre when processing.

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<b>Partner</b>	<b>Challenges encountered</b>	<b>Short description</b>	<b>Measures to address challenges</b>
All partners	How to identify and approach potential data providers	How to identify and approach potential data providers	A guidance note was prepared by the coordinating team. It includes priority data subjects as established in discussion with the Thematic coordinators. Moreover it includes tips for the consortium members how to identify and locate potential data holders. Based upon this guidance document and template all consortium members have compiled national inventories which were discussed together at the recent 2nd plenary meeting. This has resulted in a shopping list which will be deployed. Moreover a promotion and outreach plan has been drafted and discussed at the plenary meeting for ways to approach potential data providers and give the necessary follow-up.
MARIS - HCMR	Organising engagement of all EMODnet Data Centres	Data will be submitted for various countries and data themes. The aim is that the pathways involve qualified national data centres for all themes.	Engagement of all data centres as involved in the EMODnet thematic networks is pursued. This plan has been agreed at the Steering Committee and is promoted at the kick-off meetings of each of the EMODnet thematic lots. Further follow-up for registration and instructions will take place between coordinators and individual data centres. In addition a test submission service has been set up to facilitate training by all engaged data centres in the submission service functioning.

<b>Partner</b>	<b>Challenges encountered</b>	<b>Short description</b>	<b>Measures to address challenges</b>
All data centres	Handling and elaborating ingested data sets at phase II	Data sets will be ingested by various organisations that are not used to prevailing standards and this will most likely complicate elaboration.	Data submitters are coupled to qualified data centres that already have experience and various internal tools for processing and digesting a range of formats. The data centres will be in dialogue with data submitters. The portal gives guidance information about common standards and practices. It is aimed for that data providers become more educated over time in order to streamline the pathway process.

## 4. Allocation of project resources

The following tables give the expenditure per partner per task and per work package over the first year. From the tables it appears that the coordinating team of MARIS and HCMR have spent already a substantial part and almost 50% of their budgets for the 3 year project, while other consortium members have spent well below 33% of their budgets. This is in line with the activity plan which requires proportionally extra efforts from the coordinators in the first year for developing the portal and related services, while major activities for most other members such as marketing and operating the pathways for incoming data sets are planned for the next 2 years.

	WP0			WP1				WP2		WP3	WP4	TOTAL EXP	TOTAL BUDGET
	Task 7. Tuning with EMODnet community	Task 10. Service continuity	Task 11. Project Management	Task 1. Web-portal	Task 5. Data Submission and Tracking service	Task 6. Data Wanted service	Task 8. Summary Record service	Task 2. Pathways for delivering data to final repositories	Task 4. Help-service	Task 3. Machine-to-machine transfers	Task 9. Outreach activities		
<b>MARIS</b>	0.26	0.00	0.50	0.75	0.50	0.00	0.20	0.15	0.00	0.25	0.15	<b>2.76</b>	<b>6.19</b>
<b>HCMR</b>	0.12	0.00	0.25	0.10	1.80	0.00	0.05	0.15	0.00	0.00	0.15	<b>2.62</b>	<b>6.19</b>
<b>IFREMER</b>					0.12	0.00	0.00	0.10	0.35	0.10	0.10	<b>0.77</b>	<b>4.34</b>
<b>NERC-BODC</b>					0.12			0.20		0.50	0.25	<b>1.07</b>	<b>2.97</b>
<b>NERC-BGS</b>					0.12			0.10			0.10	<b>0.32</b>	<b>3.09</b>
<b>BSH</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.97</b>
<b>SMHI</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.47</b>
<b>IEO</b>					0.12			0.05		0.05	0.10	<b>0.32</b>	<b>2.47</b>
<b>OGS - NODC</b>					0.12			0.05		0.05	0.10	<b>0.32</b>	<b>3.09</b>
<b>OGS-IRI</b>								0.05			0.10	<b>0.15</b>	<b>1.24</b>
<b>RIHMI-WDC</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>ENEA</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>INGV</b>					0.12			0.05			0.10	<b>0.27</b>	<b>1.48</b>
<b>METU-IMS</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>AWI</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.47</b>
<b>ULG</b>					0.12			0.05			0.10	<b>0.27</b>	<b>1.48</b>
<b>IMR</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.47</b>
<b>AU-DCE</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.47</b>
<b>ICES</b>					0.12			0.05			0.10	<b>0.27</b>	<b>2.97</b>
<b>MI</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>IHPPT</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>NIOZ</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>
<b>RBINS</b>					0.12			0.05			0.80	<b>0.97</b>	<b>3.22</b>
<b>VLIZ</b>					0.12			0.10			0.10	<b>0.32</b>	<b>3.09</b>
<b>MRI</b>								0.05			0.10	<b>0.15</b>	<b>1.48</b>

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FMI							0.05			0.10	0.15	1.48	
MSI							0.05			0.10	0.15	1.24	
LHEI							0.05			0.10	0.15	1.24	
SIO-RAS							0.05			0.10	0.15	1.24	
IO-BAS							0.05			0.10	0.15	1.48	
NIMRD							0.05			0.10	0.15	1.48	
TSU-DNA							0.05			0.10	0.15	1.24	
IOF							0.05			0.10	0.15	1.48	
NIB							0.05		0.00	0.10	0.15	1.48	
IOI-MOC							0.05			0.10	0.15	1.24	
ORION							0.05			0.10	0.15	1.48	
IOLR							0.05			0.10	0.15	1.48	
CNR							0.05		0.05	0.10	0.20	1.48	
CSIC							0.05		0.05	0.10	0.20	1.48	
SHOM			0.12				0.10			0.10	0.32	3.09	
Deltares			0.12				0.20			0.25	0.57	1.98	
COGEA			0.12				0.10			0.10	0.32	3.09	
ETT			0.12				0.10		0.40	0.10	0.72	3.09	
GTK							0.10			0.10	0.20	1.48	
GEUS							0.05			0.10	0.15	1.48	
RWS							0.05			0.10	0.15	1.24	
<b>TOTALS</b>	<b>0.38</b>	<b>0.00</b>	<b>0.75</b>	<b>0.85</b>	<b>4.58</b>	<b>0.00</b>	<b>0.25</b>	<b>3.15</b>	<b>0.35</b>	<b>1.45</b>	<b>5.70</b>	<b>17.46</b>	<b>100.00</b>
	<b>WP0</b>				<b>WP1</b>			<b>WP2</b>		<b>WP3</b>	<b>WP4</b>	<b>TOTAL EXP</b>	<b>TOTAL BUDGET</b>
	1.13				5.68			3.50		1.45	5.70	17.46	100.00

The next table gives the overall expenditure per Work Package.

	<b>Exp</b>	<b>Budget</b>
WP0: Project Management	1.13	3.14
WP1: Construct and operate central Data Ingestion portal with services	5.68	14.81
WP2: Implement pathways to forward submitted data to the appropriate repository	3.50	54.33
WP3: Facilitate machine-to-machine transfers	1.45	6.49
WP4: Marketing and outreach activities	5.70	21.23
<b>TOTALS</b>	<b>17.46</b>	<b>100</b>

## 5. Progress in work packages and related tasks

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### ***Introduction:***

The EU Tender specifications requested the following Tasks:

Task 1	Construct a web-portal
Task 2	Implement pathways for delivering data to final repositories
Task 3	Facilitate machine-to-machine transfers
Task 4	Operate a help-service for users to provide their data in the most appropriate format
Task 5	Allow providers of data to track the progress of their data from submission through to their storage in a repository
Task 6	Include a 'data wanted' function that allows users seeking certain types of information to specify their needs
Task 7	Participate in discussions with EMODnet partners in order to improve the efficiency of the whole collection, assembly and dissemination process
Task 8	Maintain a summary record of data delivered
Task 9	Engage in outreach activities towards significant holders of marine data whose data are not yet already available
Task 10	Service continuity
Task 11	Project Management

The EMODnet Ingestion consortium proposed a Work Plan that groups specific tasks, comparable in nature, under the same Work Packages (WP), also to make the execution with the large consortium easier and more effective.

Work Package No.	Work Package title	Covering tasks	WP leader
WPO	Project Management	Task 7 – EMODnet tuning Task 10 – service continuity Task 11 – Project Management	MARIS

WP1	Construct and operate central Data Ingestion portal with services	Task 1 - web-portal Task 5 – tracking service Task 6 – data wanted service Task 8 – summary service	HCMR
WP2	Implement and operate pathways	Task 2 – pathways Task 4 – help service	IFREMER
WP3	Facilitate machine-to-machine transfers	Task 3 – machine-to-machine	ETT
WP4	Marketing and outreach	Task 9 - outreach	RBINS

Progress on the Work packages and related tasks are described in the following pages.

***WPO – Project Management:***

The EMODnet Ingestion tender proposal was submitted September 2015 to the Call ‘EASME/EMFF/2015/011: Ingestion and safe-keeping of marine data’ and a positive evaluation was received from the EU early March 2016. Thereafter time was spent on collecting evidence documents. The EU has officially countersigned the contract 19<sup>th</sup> May 2016 and it has a 3 year duration. The EMODNet Data Ingestion project is undertaken by a European network of 44 organisations (governmental departments, marine research institutes and SME’s) from 29 coastal countries, comprising 32 full partners and 12 sub-contractors, including 1 international organisation (ICES). Geographically the network has nodes in the countries around all European marine basins and it covers also all EMODnet data themes. Most partners are data centres and can be qualified as National Oceanographic Data Centres (NODC) or as National Geological Surveys or as National Hydrographic Agencies. Moreover the consortium includes the coordinators of the EMODnet thematic data portal projects for Bathymetry, Geology, Biology, Physics, Chemistry and Human Activities.

WPO aims at managing and coordinating all project activities, ensuring timely delivery and high quality of results and products, and at maintaining collaboration and tuning with the overall EMODnet project organization. It also aims at providing tools and documentation to ensure service continuity; however this latter task is planned for the second project year.

An extranet has been set up to manage all project documents concerning contractual affairs, project activities and minutes and presentations of project meetings. The extranet can be reached through the EMODnet Ingestion portal (<http://www.emodnet-ingestion.eu>) and all consortium members have received logon details for their account.

Furthermore mailing lists have been activated to support internal communication:

- [cg@emodnet-ingestion.eu](mailto:cg@emodnet-ingestion.eu) for all consortium members
- [twg@emodnet-ingestion.eu](mailto:twg@emodnet-ingestion.eu) for TWG members

The EMODnet Ingestion project was launched 26th – 27th May 2016 with the kick-off meeting in Amsterdam – The Netherlands, hosted by the Coordinator and with participation of all partners and subcontractors. Leaders of Work Packages presented the aims and planned activities, and in the following discussions a number of actions were formulated for the first part of the project. All presentations of the meeting as well as extensive minutes and list of actions have been made available at the extranet.

The Coordinator had a meeting with EASME and DG-MARE on 10th June 2016 to discuss contractual procedures between EU and the consortium. Minutes of the meeting have been prepared by the Coordinator and have been accepted by EASME.

Drafts were prepared by the Coordinator for a Consortium Agreement between all partners and a series of bilateral Subcontracts between the Coordinator and each subcontractor. Reviews by legal departments of participants have resulted in fine tuning of the agreements and overall acceptance. The Consortium Agreement version of 2 September 2016 has been fully signed by all 32 partners with the latest signature at 4<sup>th</sup> October 2016, while the latest of the series of 12 Subcontracts has been signed at 22<sup>nd</sup> December 2016. Copies of the Consortium Agreement and Subcontracts have been included in the extranet.

A progress meeting took place between MARIS, HCMR and RBINS as representatives of the EMODnet Ingestion consortium with EASME, DG-MARE and EMODnet Secretariat, 8th December 2016, Brussels – Belgium. This meeting was dedicated to the progress made with the development of the portal annex submission service and the plans for the launch of the portal and marketing activities.

MARIS and HCMR participated in the EMODnet Steering Committee meeting, 15th-16th February 2017, Brussels – Belgium, where a presentation was given of the project progress and discussion took place about tuning with the EMODnet Thematic portals. At this meeting it was agreed that all thematic lots and the EMODnet Secretariat would advertise the EMODnet Ingestion portal at the thematic and central portals. And that synergy with the thematic networks would be sought for handling ingested data sets. This also applies for the Seabed Habitat Mapping lot that is not officially represented in the EMODnet Ingestion consortium.

The 2<sup>nd</sup> plenary meeting of the full consortium of the EMODnet Ingestion project took place 10th – 12th April 2017 in Limassol – Cyprus, co-organised with the local host, ORION. The meeting was dedicated to monitoring the progress of the project since its start 19 May 2016, discussing the coming activities, and

providing input for preparing the 1<sup>st</sup> annual progress report to the EU. All presentations of the meeting as well as extensive minutes and list of actions have been made available at the extranet.

As part of the contract there are several reporting obligations, which are fulfilled by MARIS. So far the following reports have been submitted and accepted by the EU (EASME and DG MARE) and the EMODnet Secretariat:

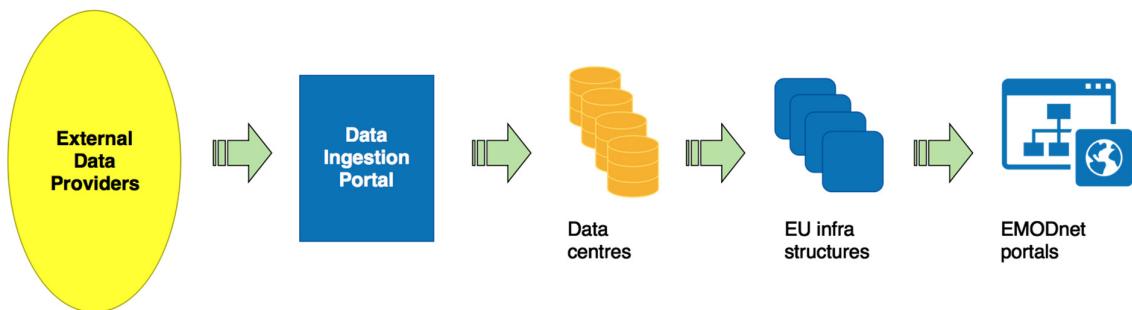
- Minutes of the contractual meeting of the Coordinator with EASME and DG-MARE on 10th June 2016;
- Quarterly progress reports for the following time periods:
  - Report 1: 19/05/2016 – 31/08/2016
  - Report 2: 1/09/2016 – 30/11/2016
  - Report 3: 1/12/2016 – 31/03/2017

Note: the period for the 3<sup>rd</sup> report was adjusted in order to sync with other EMODnet Phase 3 project reporting.

#### **WP1 – Construct and operate central Data Ingestion portal with services:**

WP1 aims at developing and operating the EMODnet Data Ingestion portal with services that facilitate data holders from public and private sectors to submit marine data sets and provide data management guidance, generating indicators about the performance, and upgrading the portal and services gradually on the basis of user feedback.

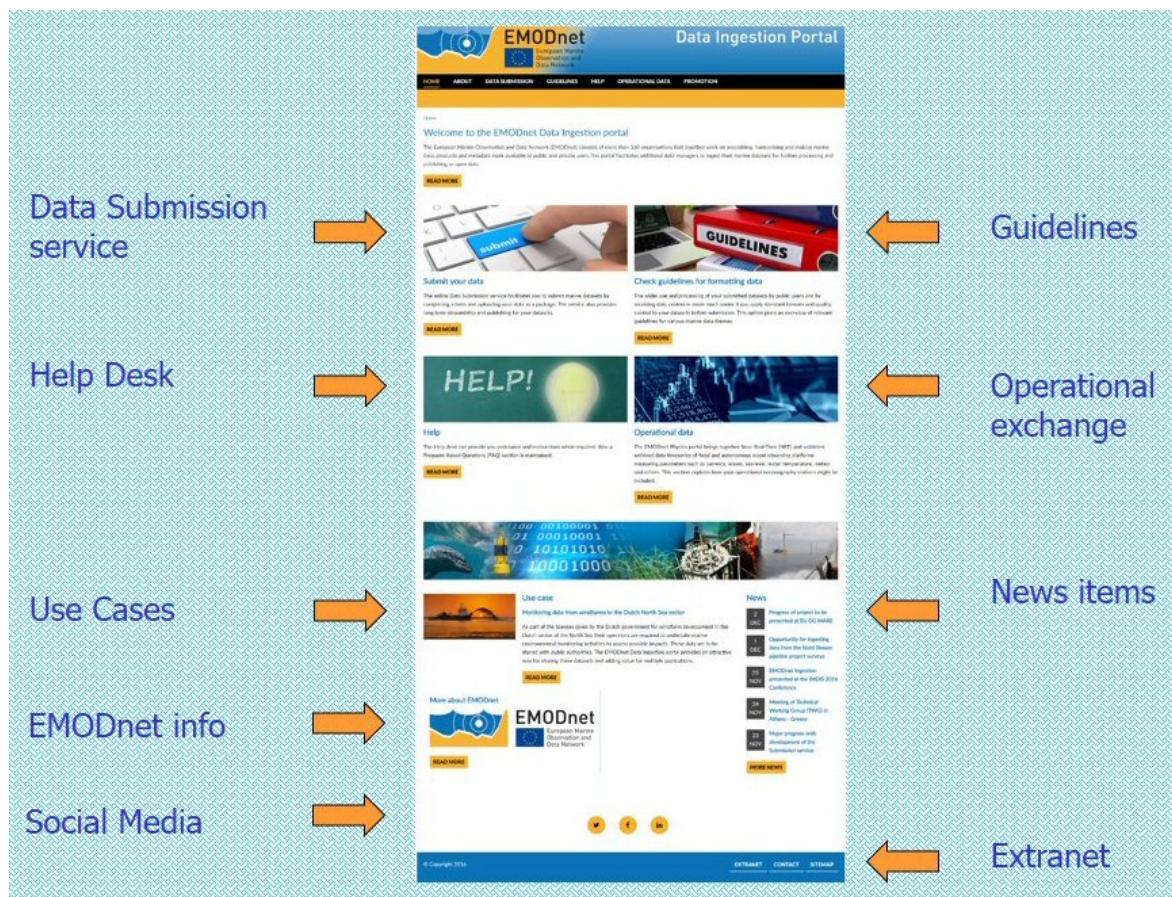
The brainstorming about the portal and its services started at the project kick-off meeting (26<sup>th</sup> – 27<sup>th</sup> May 2016) and major progress with the specifications and developments was achieved at the Technical Working Group (TWG) meeting which took place 7<sup>th</sup> – 8<sup>th</sup> November 2016 in Athens – Greece, hosted by HCMR.



*Image: overall workflow from external data providers to EMODnet portals*

The EMODnet Data Ingestion portal should become a component of the present marine data management infrastructure and existing pathways towards the EMODnet data portals. The planned pathways follow a common workflow: data are 1) submitted by data holding organisations and published ‘as is’ at the Ingestion portal with support of assigned data centres; 2) validated, processed and stored in dedicated national data centres; 3) populated in the appropriate European infrastructure (such as SeaDataNet, EurOBIS and others depending of the theme), and 4) made part of EMODnet data portals.

In the first year of the project major progress has been made with developing and launching the EMODnet Data Ingestion portal and most of its planned services. The portal domain has been registered as <https://www.emodnet-ingestion.eu>. A sitemap has been prepared by the Coordinator that has been agreed with the consortium and following the sitemap several partners have contributed texts for the portal. Moreover a design layout was drafted and adopted for the portal implementation by MARIS. The EMODnet Ingestion portal was launched at 7<sup>th</sup> February 2017. The portal is managed through an online Content Management System and it has been implemented with responsive design so that it can be used at multiple platforms (PC, tabs and smart phones). The website already includes several services as is illustrated below.



*Image: overview of the EMODnet Ingestion portal and its active services and sections*

#### **Submission Service:**

Considerable efforts were dedicated to specifying and developing the online **Submission Service**. This was done by HCMR and MARIS together with a subcontractor GET from Greece and in tuning with the Technical Working Group. The EMODnet Data Ingestion portal focuses on data providers and their data sets that are not yet handled and part of the mainstream arrangements and data handling processes of the EMODnet Data Centres. Potential data providers are marine data holders that are not yet routinely submitting data sets to national data centres and not (yet) used to practices and standards as used by the international marine data management community. Therefore they must be supported to submit their data packages for open access and use in national data centres and EMODnet.

The submission should concern **datasets** for observations and/or analysed samples together with documentation and not just **stand-alone reports**. Furthermore data providers are encouraged to submit data packages which rather concern **collections of datasets**, for example resulting from a project, cruise, monitoring programme etc., and not individual datasets. They are urged to include relevant documentation too in the zip package that they submit. Furthermore data providers are advised not to upload too large data collections per data package because of upload performances, but also to restrict having too many different data sets in a data package. Therefore they are encouraged to divide data packages at least by theme and possibly by observation methods in order to get smaller and more harmonised data packages. Building series of data packages for specific projects will be beneficial for the further processing and uptake in data repositories.

#### **User registration:**

The EMODnet Data Ingestion portal is public domain and all submitted data sets are considered as open data. However, a **user registration** is required for data providers to act as a data submitter for using the Data Submission service with its range of functions. The user registration is required to ensure that data submitters have a unique logon which will be instrumental for managing their submissions and for tracking the further processing of their submissions. Data submitters must register once with **Marine-ID** in order to get a personal logon name and password. This is done by filling a web form and confirming that the user accepts the terms of use. The user will then receive a logon per email. Marine-ID is operated by IFREMER and also used by SeaDataNet and several other EMODnet portals for user registration, authentication and authorisation.

#### **Submission form:**

Potential data providers can submit marine dataset packages. Each package should consist of a collection of datasets and relevant documentation, accompanied by completing a **submission form** with a limited set of metadata to describe the datasets collection. For the submission form the ISO 19115-2 standard

has been adopted and the form has been defined by HCMR, MARIS and GET also considering compliance with INSPIRE and practices at other ingestion systems, such as NOAA's Send2NCEI service. It is supported by SeaDataNet vocabularies and directories, while also free text are allowed when required terms cannot be found in the existing vocabularies and directories. These free text entries are called 'orphans'. The submission form and service have been developed to be user friendly and to capture easily and efficiently the information related to the data submissions. To make the threshold for submission relatively low the completion of the submission form has been split in 2 parts:

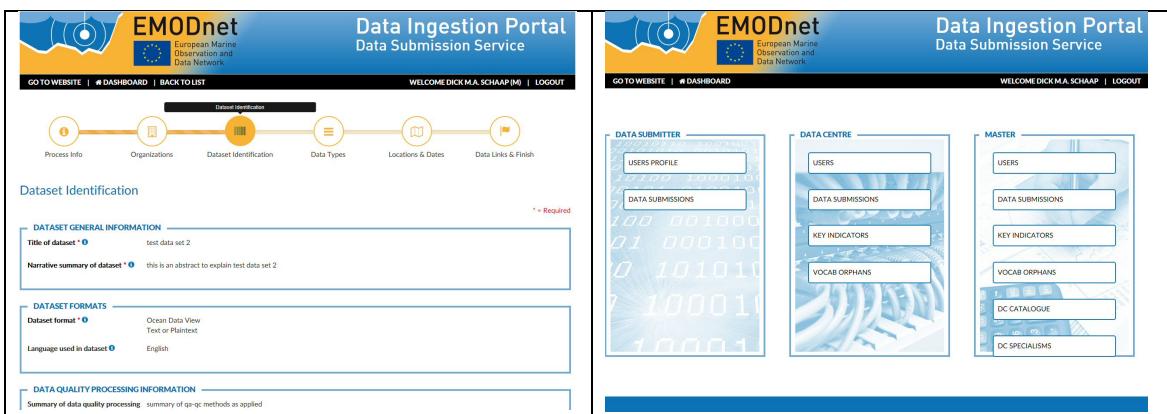
- **Part 1 submission form:** a number of key fields to be completed by the Data Submitter, including uploading of a zip file with the datasets and related documentation;
- **Part 2 submission form:** review of the received datasets package and part I metadata, and consecutive completion of the additional metadata fields of the submission form by the appointed Data Centre.

A detailed description of the Submission Form can be found in **Annex 1**.

### Submission Service:

The submission service has been implemented by HCMR with technical support of GET and content support of MARIS. It provides mechanisms for effective documentation of data packages to be ingested. The images below give some screens from the Submission Service.

The submission service also includes additional services such as for data tracking, key indicators, and entering and assigning Data Centres. The submission service works with roles for Data Submitter (DS), Data Centre (DC) and Master (M). There is a Dashboard (see image below) where the functions for each of the roles are displayed. The roles are maintained by the Master (MARIS and HCMR) and the Dashboard is dynamically displayed depending on the role(s) of the person that logs on.



*Image: Data Submission Service with Submission Form in tabs and Dashboard with functions for Data Submitters, Data Centres and Masters.*

**Data Centres Catalogue:**

The Masters can register specific data centres in the internal **Data Centres Catalogue** from which Data Centres can be selected and assigned by the Masters for handling specific data submissions. This way Data Centres are coupled to specific Data Submitters, depending on country and data theme. The Data Centres can oversee in their Dashboard all data submissions in their account and undertake action for reviewing part 1 of submissions and completing part 2. This can be supported by direct communication between the Data Centre and the Data Submitter in order to get a better understanding of the submission and to allow for completing the submission form part 2.

**Tracking Service:**

The Data Centre also will maintain internally a log of major actions which will be available as Process Info for both the Data Submitter and the Data Centre as well as the Master. This is administered as part of the **Tracking Service**. This is integrated in the Submission service to allow data providers to stay informed about the progress from data submission to publishing.

**Orphans:**

The Dashboard includes a function for Data Centres and Master to oversee possible ‘orphans’ in the submissions and to see if they can solve these by controlled terms from the SeaDataNet vocabularies and directories. If missing, they might have to take action for expanding and updating those with new terms, following the existing SeaDataNet governance procedures. Once updated, it is possible to edit the free text in the submission forms to controlled terms. It also might occur that the terms are already present but that the Data Submitter did not find them. Also in those cases the DC and M can edit the submission forms using the ‘orphans’ function. Moreover the Dashboard of DC and M contains a Key Indicators function as an additional way to give overviews of systems performance. This allows to set filters on the received collection of submission forms and to extract and oversee in graphics and tables the range of the received submission forms.

**Extra vocabulary terms included:**

The Submission service makes use of SeaDataNet controlled vocabularies where possible. These are managed and operated by BODC. This includes use of Measured phenomena: P08 > P03 > P02. However some terms required by the theme ‘Human Activities’ are not collections of measurement phenomena, but human activity keywords at broad and narrow granularity. Therefore BODC established a new vocabulary ‘HA2’. It consists of (fine granularity) human activity keywords in parallel to P02. It is mapped to P03 as well as P02 to form a common ontology. In the vocabulary interface and in the submission

form it is solved by providing a concatenation of P02 and HA2: P08>P03>P02/HA2. This now provides the extra terms needed for describing human activity items.

**Processing and publishing in Phases:**

The ingestion service is targeting data owners that are not used to data management standards and procedures. Therefore there must be a low threshold for the data submission service. This is achieved by making a distinction between 2 phases in the life cycle of a data submission

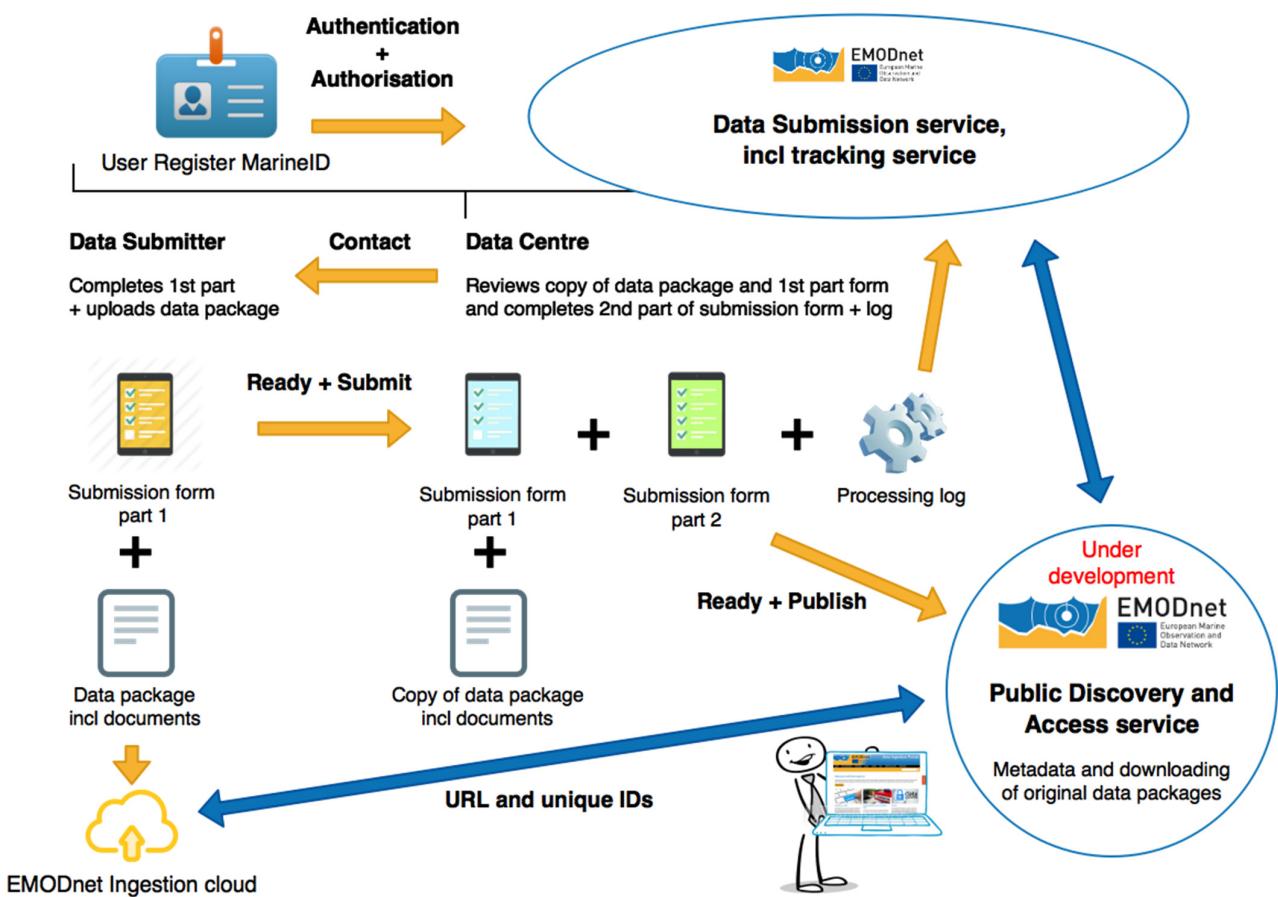
- **Phase I:** from data submission to publishing of the submitted datasets package '*as is*'
- **Phase II:** further elaboration of the datasets package and integration (of subsets) in national, European and EMODnet thematic portals.

This split will give a low threshold for data submitters and moreover will allow to publish already in an early stage the original data package with high quality metadata. This is attractive as it will give more momentum to the EMODnet Data Ingestion service as it will prevent that a data submitter has to wait till the moment that the data package has been fully analysed and validated. Moreover it will give more results as the original data package will be published next to possible validated datasets extracted from the data package. The processing of phase I can be relatively short so that the received data package can be published '*as is*' pretty soon after its submission.

The workflow process for **Phase I** from data submission to publishing of the submitted data package '*as is*' is illustrated below.

In **Phase II** the published datasets package will be further processed and curated by the assigned data centre, most probably again in dialogue with the data submitter, in order to make these or subsets fit for long term storage and stewardship in their data management system and to share it with the appropriate European infrastructure and EMODnet thematic portal(s).

The validation and processing of data submissions will be made easier for data centres if data submitters already apply standard data formats for their datasets collections and also provide relevant documentation as part of their submissions. That will greatly optimise the efforts and time needed for Phases I and II.



*Image: Data Submission workflow for Phase I going from ingestion till publishing 'as is'*

#### Test Submission service:

Next to the operational submission service which is included in the Ingestion Portal also a TEST Submission service has been developed as a complete copy in order to facilitate training by the Data Centres in the operation of the system and to get used to the roles of Data Submitter and Data Centre. The test system is available at: [submission-test.emodnet-ingestion.eu](http://submission-test.emodnet-ingestion.eu). The test system has been configured with the same Data Centre Catalogue as the production service, so all consortium members can logon and undertake training. This prevents also that members are testing in the production system giving unwanted test entries.

#### Summary Records service:

The resulting metadata forms and associated data packages of phase I will be made publicly available by means of the **Summary Records service**. MARIS has already developed the Summary Records service, starting with Phase I. For that purpose the HCMR operated Submission service has been equipped with a web service to provide all submission forms with status = 80 as XML. This XML web service is IP – IP

protected to allow only MARIS to harvest ready submission forms and load these in a local database at MARIS. The Summary Records service has been developed as a facet service with discovery possible on what, when, where, who, how fields from the submission forms (ISO19115-2). The Summary Records service for now is coupled to the output of the test submission service and can be tested at:

[https://www.emodnet-ingestion.eu/datasets/browse\\_step.php](https://www.emodnet-ingestion.eu/datasets/browse_step.php)

It will be added and launched at the public portal as soon as the Submission Service has achieved a critical mass of completed Phase I submission forms.

### Summary service of submitted datasets

This service allows users to search and download the datasets that have been submitted via the Submission service and that have been reviewed and completed in metadata by assigned data centers. These datasets are published "as-is" and will be further inspected and elaborated, where possible, for uptake in the national and European infrastructures supporting EMODnet.

Search by

Free search

Date [dd/mm/yyyy]

Geobox

North

West
East

South

**Results (6)**

**Test MARIS - tide gauge station**  
Period: 2000-05-01- 2017-05-31  
Observation type: Field geophysics,Hydrocarbons,Underwater photography



**Fish data - Testset MARIS**  
Period: 2015-05-22- 2016-05-22  
Observation type: Fish,Fisheries



**CSP2-5 Project CDT daya**  
Period: 1991-01-01- 1992-12-31  
Observation type: Administration and dimensions,Nutrients,Water column temperature and s



**test bathymetric survey - PT**  
Period: 2010-05-01- 2017-05-01  
Observation type: Amino acids,Aquaculture



**CINCS Cruise "Hydrological" Data**  
Period: 1990-01-04- 1995-08-15  
Observation type: Administration and dimensions,Other physical oceanographic m,Water column temperature and s



*Image: Summary Records service with facet search interface – temporarily only in test*

The further elaboration of the received data packages as part of Phase II to standard formats might take more efforts depending on the complexity of the received data sets and related formats. Also there might be cases that only a subset can be elaborated or that the effort is too much to pursue considering the possible results. However in the Submission Service a number of extra tags will be included for maintain the phase II log as part of the Tracking service and extra URLs at which the elaborated metadata and data sets will be available. These extra information and links will also be included in the Summary Records service.

### Data Wanted service:

The tender includes a requirement for developing a Data Wanted service. This service will allow users seeking certain types of data to specify their needs. It will be matched with the Summary Records service to alert users of any possible match. It will also have a user interface to check data wanted requests. Originally it was planned that IFREMER would develop the service. However considering the direct relation with the Summary Records service, it was decided that MARIS will develop it. The format for the Data Wanted service will be extracted from the format of the Summary Records service in order to allow matching. A draft design has been made for the service as a ‘wall of post-its’. The test launch is planned for early July 2017.

**Key Indicators:**

The Submission Service includes a Key Indicators function for Data Centres and Masters. This facilitates generating and screening indicators for progress of the EMODnet Ingestion workflow. This can be done by filtering on a number of search criteria and by generating summary reports. Using the filters the user can make selections of the total content, e.g. over a period of time, and the results can then be either visualised graphically (in pie-charts) or exported as CSV file. More information about this functionality will be given in chapter 11.

**Marine Data Management guidance:**

The assigned data centres will review and curate data submission in order to make these fit for long term storage and stewardship in their data management system and to share it with the appropriate EMODnet Data portal. However there is a great variety of data types and formats around and as demonstrated in the regular practice of the data centres, it can take significant human efforts and time for processing, validating, converting and documenting of incoming data sets with the aim to make these part of their data management systems. To ease and accelerate this process data submitters are encouraged to adopt common formats for metadata and data for the submitted datasets. For this purpose a section on marine data management guidance has been included in the EMODnet Data Ingestion portal. Its gathering has been coordinated by HCMR and it includes guidance documents for preferred data and metadata formats next to relevant software.

Marine data include a very wide range of measurements and variables derived from a broad spectrum of multidisciplinary research projects and monitoring programmes. The data are collected by different institutes, governmental organizations or private companies using heterogeneous instruments and sensors installed in various observing platform. Depending on the data type, the acquisition systems, the delivery time frame or operations of the archiving centre, there is not a unique used data model and structure and the original measurement format may not be the same with the format that the archiving centre can accept. Alongside the data, additional information (metadata) is needed not only for quality control and archiving, but also for exchanging data or integration of them into regional or global data sets.

A summary of the basic data management guidelines used by the marine community is given at the portal with references to:

- International Oceanographic Data and Information Exchange
- ICES Marine Data
- SeaDataNet marine and oceanographic data standards
- European Ocean Biogeographic Information System (EurOBIS)
- Marine Environmental Data and Information Network (MEDIN)
- International Hydrographic Organization (IHO)

There is a vast range of software tools, both open and commercial licenses that can be applied for formatting and quality checking of marine data types. The following software references have been included:

- Ices Marine Data Tools
- SeaDataNet Tools
- Integrated Publishing Toolkit (IPT) for biodiversity data

## ***WP2 – Implement pathways to forward submitted data to the appropriate repository:***

WP2 aims at specifying and implementing pathways for delivering data using the Data Ingestion portal to safe repositories, making use of and streamlining existing pathways where possible, and developing and operating a help service.

As explained in WP1 a distinction is made between 2 phases in the life cycle of a data submission:

- **Phase I:** from data submission to publishing of the submitted datasets package ‘as is’
- **Phase II:** further elaboration of the datasets package and integration (of subsets) in national, European and EMODnet thematic portals.

The related processing steps to go from submission to publishing in EMODnet portals are considered ‘pathways’. Part 1 submission forms with data packages as received through the Central Data Ingestion portal will be assigned to one of the members of the EMODnet Ingestion network of qualified data centres depending on the country of the data provider and the type of EMODnet theme of the data. For the pathways the principle is applied, where possible, that data from originators should be managed by data centres in their own country. This contributes to a greater acceptance, increased opportunity of success and encourages a longer term perspective for the ingestion service. Assigned data centres will first of all give a follow-up, in dialogue with the data providers, for reviewing part 1 and completing part 2 of the submission form in order to achieve phase I publishing in the Summary Service. Where possible this will be followed by validating and processing the received data packages to common standards for

uptake and long term storage in their data centres. From there the elaborated data sets will also be populated in relevant European infrastructures that are feeding into the EMODnet Data portals.

Oceanographic and marine data include a very wide range of measurements and variables covering a broad, multidisciplinary spectrum of projects and programs. Oceanographic and marine data are collected by several thousands of research institutes, governmental organizations and private companies in the European countries and non-European countries bordering the European seas. In the present European landscape a leading role in marine data management is performed by dedicated data centres of marine research institutes - often acting as NODC -, national geological surveys, and hydrographic agencies. These data centres have the essential capabilities and facilities for data quality control, long term stewardship, retrieval and distribution. These centres are actively involved in national research and monitoring activities and have established arrangements for managing resulting data on a national and thematic basis. Moreover these data centres work together on a pan-European and international scales in organisations such as IODE, ICES, EuroGeoSurveys, EuroGOOS, and IHO, and in EU data management infrastructures such as e.g. SeaDataNet and EurOBIS.

The EMODnet Ingestion consortium involves many NODCs and also several national geological surveys and hydrographic agencies. They are actively involved in the project with dedicated roles and associated budgets for undertaking elaboration of incoming data sets. A section has been included in the EMODnet Ingestion portal with Marine Data Management guidelines and software and data submitters are encouraged to learn from this and to adopt common standards. However in practice it might be that data providers submit data packages in less common formats data sets. The elaboration by data centres then might take significant human efforts and time.

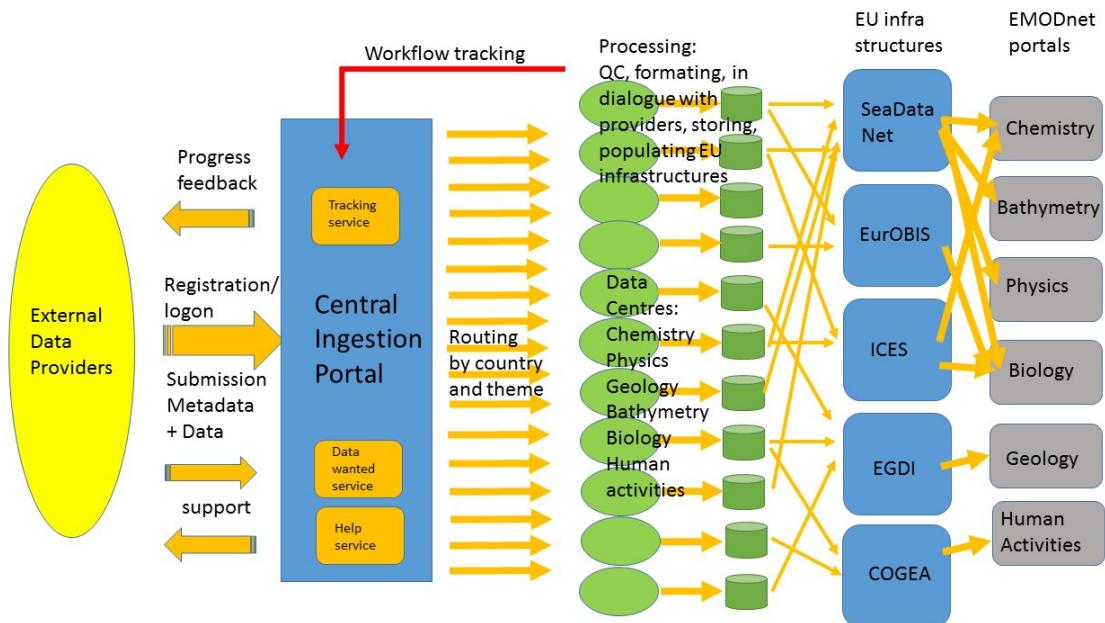
The existing pathways for the EMODnet thematic portals can be summarized as follows:

- a. **EMODnet Chemistry:** marine chemistry data are routinely gathered by data centres (in particular NODCs) from data providers in their country (both from research and monitoring activities) and after QA-QC and processing stored in their databases. This is followed by populating metadata and data into the European **SeaDataNet** infrastructure, which is managed by the NODCs in Europe, and which then provides the basis for making chemistry data available for the EMODnet Chemistry portal and its products generation
- b. **EMODnet Bathymetry:** marine bathymetry data are routinely gathered by data centres (national hydrographic services and marine research institutes) from data providers in their country (both from research and monitoring activities) and after QA-QC and processing stored in their databases. This is followed by populating metadata and data into the European **SeaDataNet** infrastructure, which is managed by the NODCs in Europe, and which then provides the basis for making bathymetry data available for the EMODnet Bathymetry portal and its products generation.

- c. **EMODnet Physics:** this portal is built upon 2 data streams, Near Real Time (NRT) data from operational monitoring stations and archived data. The NRT data stream will be dealt with in WP3. The archived physical data sets are routinely gathered by data centres (in particular NODCs) from data providers in their country (both from research and monitoring activities) and after QA-QC and processing stored in their databases. This is followed by populating metadata and data into the European **SeaDataNet** infrastructure, which is managed by the NODCs in Europe, and which then provides the basis for making archived physical data available for the EMODnet Physics portal and its services.
- d. **EMODnet Biology:** this portal is built upon a number of data streams from European infrastructures such as EurOBIS, SeaDataNet, ICES, depending on their type. Marine biological data sets are routinely gathered by data centres (NODCs and marine biological research institutes) from data providers in their country (both from research and monitoring activities) and after QA-QC and processing stored in their databases. Biodiversity data are populated with metadata and data into the European **EurOBIS** infrastructure, which is managed by VLIZ in Belgium; fisheries data are populated with metadata and data into the international **ICES** infrastructure, which is managed by ICES based in Denmark; biochemistry and other types of biological data are increasingly populated with metadata and data into the European **SeaDataNet** infrastructure. These 3 major streams from EurOBIS, ICES and SeaDataNet are then made available for the EMODnet Biology portal and its products generation, using interoperability solutions, because the formats of metadata and data are not the same.
- e. **EMODnet Geology:** this portal so far has focused more on generating and publishing data products and less on discovery and access of geology data itself. However there is a strategic implementation plan from the National Geological Survey Organisations (NGSO) for developing and implementing the European Geological Data Infrastructure (EGDI) under the umbrella of EuroGeoSurveys (EGS), based on the successes of earlier joint projects including OneGeology Europe. EGDI will gather and provide pan-European, harmonised and interoperable datasets and information services about geology. At present, the more than 30 NGSO partners that are members of EGS (mostly national geological surveys) are working jointly together in the frame of the EGDI-bridge project in order to pave the road for the successful implementation of the EGDI. EGDI will thus also make marine geology data available in the near future for the EMODnet Geology portal and its services. Moreover at the recent EMODnet Geology kick-off meeting it was decided also to refer by means of OGC web services to SeaDataNet geology entries that have been populated by national geology surveys and marine research institutes in the frame of the EU Geo-Seas project.
- f. **EMODnet Human Activities:** Marine data on human activities are a peculiar case, compared with other marine data domains. It concerns a heterogeneous array of spatial datasets. More importantly, there is no community of reference at EU level for human activities at sea. Neither are there – generally speaking – agencies, institutes or governmental bodies at Member State

level that are specifically mandated to collect marine data on human activities as a whole. There are a few EU sources, but data may be sourced from a multitude of sources at national level. A wide range of sources is currently feeding EMODnet Human Activities and its team carries out a series of controls, in terms of data quality, lineage, integrity, and completeness. The data ingestion service will bring in new data that have to be forwarded for processing and publishing through existing infrastructure. In the case of Human Activities, ingested data sets will be elaborated by the consortium led by COGEA, that is developing the EMODnet Human Activities portal.

This gives the following schematic view on how the EMODnet Data Ingestion portal and services can be embedded and how the various actors and components might be structured for an integrated workflow from data providers towards EMODnet.



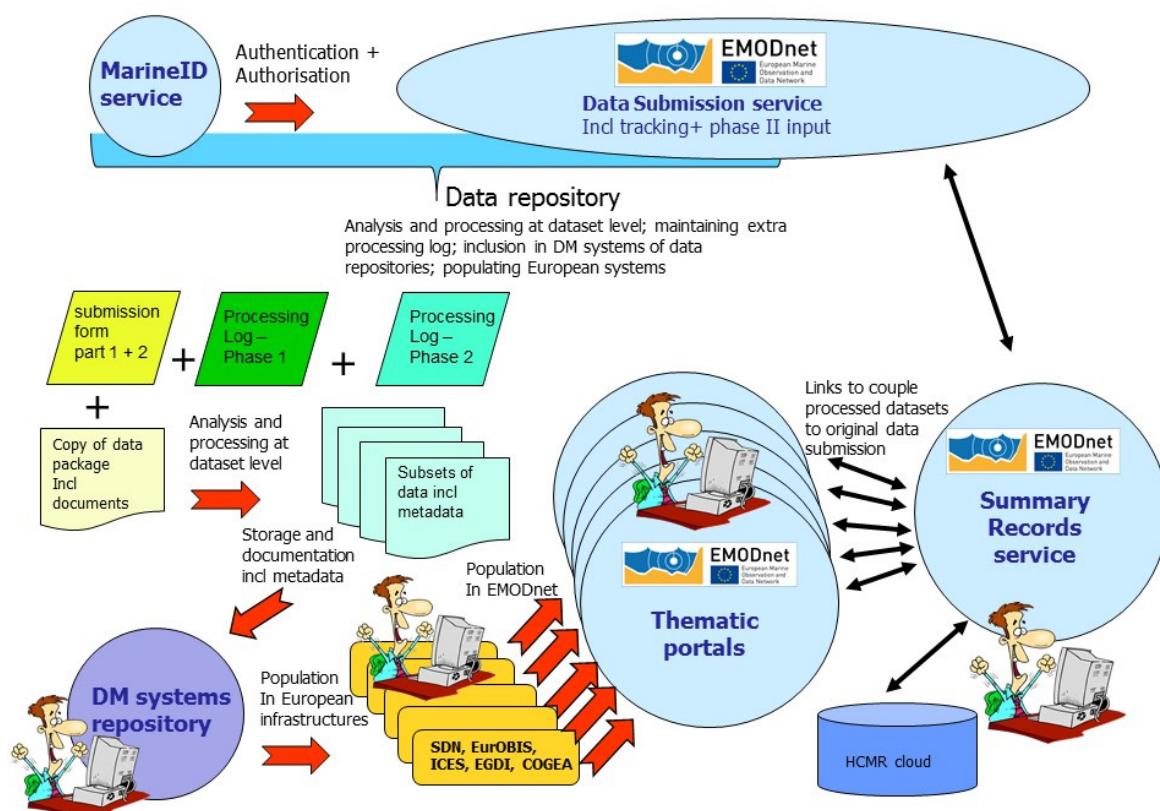
*Image: planned schematic flow (pathways) of data from data originators to EMODnet data portals*

As part of the operation for phase II the data centres will undertake the following steps:

- Retrieve a copy of the new submitted data package with its package metadata from the ingestion service
- First evaluation of type of data, data provider, status of package
- Inclusion in local workflow for validating and processing the data package
- Maintaining status information about workflow in the central Data Tracking service
- Contacting data providers by email or phone in case of questions

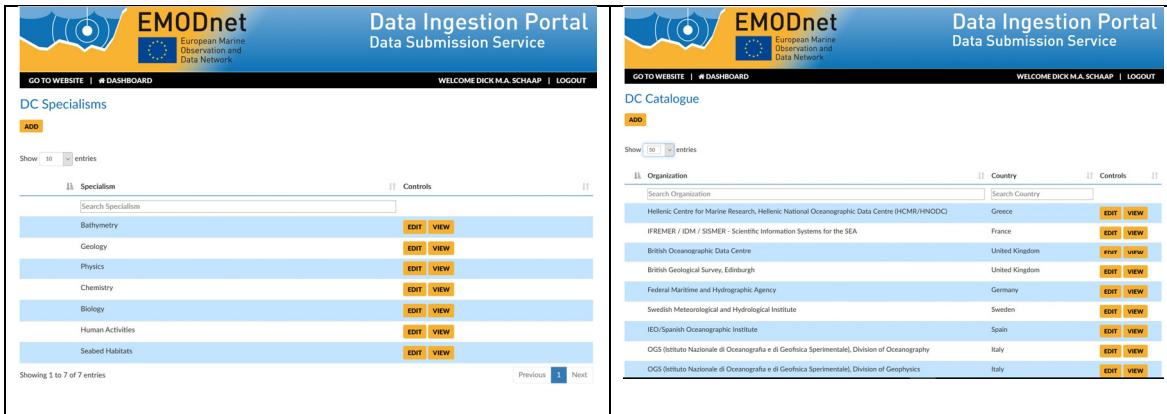
- Including the data sets if ok in the local database system
- Making the metadata and data part of their local data discovery and access system, possibly registering a Data Object Identifier (DOI) to a data set or to a group of data sets from the same data provider in case of a scientific data collection as extra encouragement to researchers
- Preparing the metadata and data sets for population into the appropriate European infrastructure such as SeaDataNet, EurOBIS or others
- Undertake final actions for publishing through the appropriate European infrastructure and feeding the related EMODnet portals
- Include the phase II publishing URLs in the submission forms in the Submission Service and the Summary Records service.

The following image gives a schematic overview of the workflow for phase II.



*Image: pathways for phase I and phase II for elaborating ingested data from data originators by data centres to national data management systems and from there by means of European infrastructures to EMODnet data portals*

The Submission Service in the Master dashboard contains a DC Specialisms table and a DC Catalogue table (see also WP1) which are maintained by the service Master (MARIS).



The left screenshot shows the 'DC Specialisms' table with 7 entries: Bathymetry, Geology, Physics, Chemistry, Biology, Human Activities, and Seabed Habitats. Each entry has 'EDIT' and 'VIEW' buttons.

Specialism	Controls
Bathymetry	<a href="#">EDIT</a> <a href="#">VIEW</a>
Geology	<a href="#">EDIT</a> <a href="#">VIEW</a>
Physics	<a href="#">EDIT</a> <a href="#">VIEW</a>
Chemistry	<a href="#">EDIT</a> <a href="#">VIEW</a>
Biology	<a href="#">EDIT</a> <a href="#">VIEW</a>
Human Activities	<a href="#">EDIT</a> <a href="#">VIEW</a>
Seabed Habitats	<a href="#">EDIT</a> <a href="#">VIEW</a>

The right screenshot shows the 'DC Catalogue' table with 10 entries, each representing a Data Centre with its name, country, and 'EDIT' and 'VIEW' buttons.

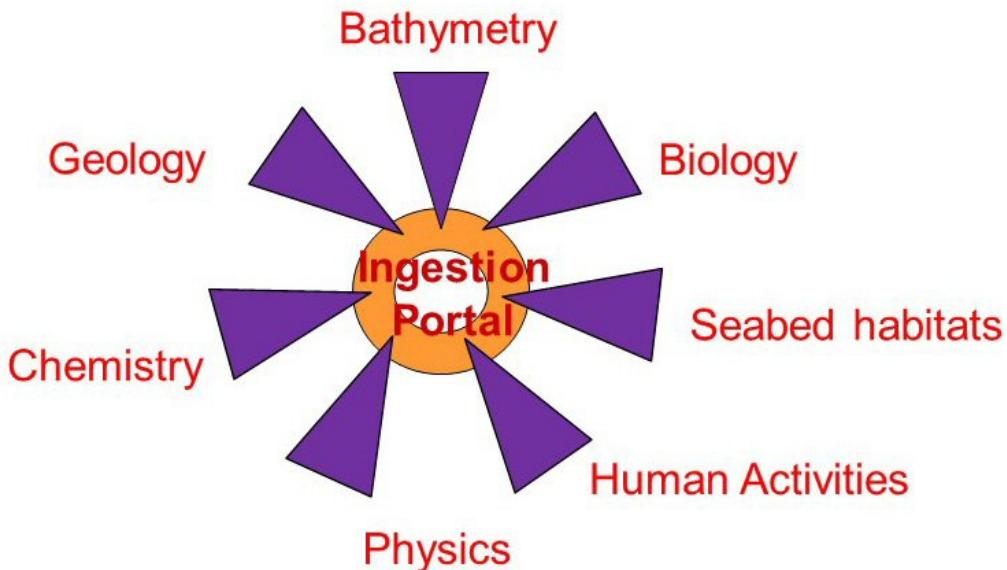
Organization	Country	Controls
Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre (HCMR/HNODC)	Greece	<a href="#">EDIT</a> <a href="#">VIEW</a>
IFREMER / IDM / ISMER - Scientific Information Systems for the SEA	France	<a href="#">EDIT</a> <a href="#">VIEW</a>
British Oceanographic Data Centre	United Kingdom	<a href="#">EDIT</a> <a href="#">VIEW</a>
British Geological Survey, Edinburgh	United Kingdom	<a href="#">EDIT</a> <a href="#">VIEW</a>
Federal Maritime and Hydrographic Agency	Germany	<a href="#">EDIT</a> <a href="#">VIEW</a>
Swedish Meteorological and Hydrological Institute	Sweden	<a href="#">EDIT</a> <a href="#">VIEW</a>
IEO/Spanish Oceanographic Institute	Spain	<a href="#">EDIT</a> <a href="#">VIEW</a>
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Division of Oceanography	Italy	<a href="#">EDIT</a> <a href="#">VIEW</a>
OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale), Division of Geophysics	Italy	<a href="#">EDIT</a> <a href="#">VIEW</a>

*Image: screens of DC Specialisms and DC Catalogue in Submission Service, only for Masters*

The DC Specialisms contains 7 entries, conforming to the 7 EMODnet data themes. The DC Catalogue at present contains the Data Centres from the EMODnet Ingestion consortium with their responsibilities (themes and countries) and their contacts (via Marine-ID user names). In practice HCMR and MARIS use this DC Catalogue to select a data centre and to assign it to an incoming submission form (part 1) for completion of forms within phase I and further processing as part of phase II.

Involving only the EMODnet Ingestion consortium is not sufficient to cover most countries and EMODnet themes. Therefore the idea has been raised to engage not only the Data Centres as present in the EMODnet consortium, but also the group of Data Centres which are involved in each of the EMODnet Thematic portals. This way the network of capable data centres can be expanded to cover all themes and a majority of European countries.

Each of the EMODnet thematic groups has recently signed their new contracts with EASME for EMODnet phase 3 and for all themes there is a continuation with almost the same consortia. Moreover each of the EMODnet Thematic portals (except Seabed Habitats) is represented in the EMODnet Ingestion consortium with the aim to establish synergy between the ingestion activities and each of the thematic portals. In fact all EMODnet thematic portals are interested in additional data sets that can complement their present input.



*Image: involving all EMODnet thematic networks in the Ingestion pathways*

As a follow-up MARIS has asked all thematic coordinators to engage their networks in the pathways for EMODnet Ingestion and to bring this forward to their consortium members at their kick-off meetings. The issue was raised by MARIS at the EMODnet Steering Committee meeting of 15<sup>th</sup> – 16<sup>th</sup> February 2017 and at the 2nd EMODnet Ingestion Projectgroup meeting of 10<sup>th</sup> – 12<sup>th</sup> April 2017. The idea received a positive response and it was agreed that each of the EMODnet Thematic lots would include an EMODnet Ingestion presentation at its kick-off meeting to inform their network members and to request cooperation for the pathway tasks. So far such a presentation and proposal has been given to:

- EMODnet HRSM – 20 March 2017 – by MARIS
- EMODnet Physics 3 – 19 April 2017 – by MARIS
- EMODnet Chemistry 3 – 17 May 2017 – by MARIS

Again a positive feedback was received. This now needs to be converted into approaching individual data centres for making them aware of the Submission Service procedures and for registering them in the DC Catalogue. For Human Activities and Physics 3 it is already arranged by registering relevant parties.

The presentation for EMODnet Geology is planned for 30 May 2017, by BGS. Note: Seabed Habitats is not a member of the Ingestion consortium but they have indicated at the Steering Committee meeting to be interested in collaborating.

**Potential improvements pathways for Phase II:**

The challenge is to optimise the process of going from data sets, naming and formats as supplied by Data Submitters to common formats for metadata and data and use of controlled vocabularies as managed by the Ingestion Data Centres. For this purpose it is considered to compile a number of conversion tools that can be made available as online services, **first to Data Centres** and later possibly **also to Data Submitters**. The online services might be provided as cloud services. IFREMER as taskleader will together with MARIS and HCMR analyse the feasibility of planning and compiling a pool of online services for streamlining processing of ingested data sets.

**Help desk service:**

The aim was to establish and operate a Service-desk at the Ingestion portal, which is accessible by: a) telephone, b) email, and c) online chat. The telephone and online chat service shall operate during EU working hours and e-mails shall be answered within 2 working days. All queries shall be tracked and a record shall be kept of all queries. Recorded queries will be analysed to elaborate a Frequently Asked Questions (FAQ) section at the portal and to provide indicators such as response time of the service-desk. Good progress has been made and the email service is operational since the launch of the portal. This required some engineering as the main domain **emodnet-ingestion.eu** is running at MARIS while the service desk runs at IFREMER. The email address [support@emodnet-ingestion.eu](mailto:support@emodnet-ingestion.eu) has been plugged to the ticket system that IFREMER uses for IT and telecommunication support. An EMODnet sub-desk has been configured. In practice every incoming email is registered and forwarded to the right person for responding while keeping track. This email ticket system also allows to generate indicators. Answers to emails are sent to users again with [support@emodnet-ingestion.eu](mailto:support@emodnet-ingestion.eu) as sender. The implementation of a direct telephone service gave some implications such as 1) cost of the phone call for a user, 2) not all people in IFREMER are fluent in English, 3) answers might take more time as it might require further analyses, 4) there is not always somebody available, 5) manual inputs of the calls in the database will be needed for the statistics. Considering these implications and also taking into account the relatively low traffic of the service, it was decided to implement an alternative solution: a user can ask by email to be called back, indicating the telephone number and the question. This way the question can be given to the right person for study and the emails are registered in the ticket system with tracking of follow-up. This is also operational at the portal since the launch in February 2017. There remains the development and implementation of the chat service.

***WP3 – Facilitate machine-to-machine transfers:***

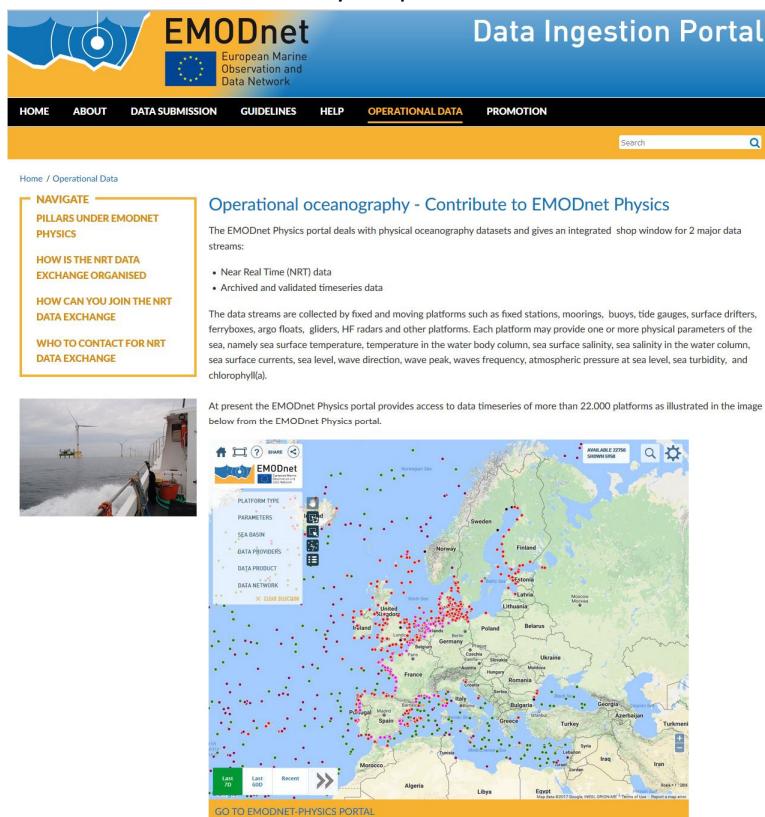
WP3 aims at facilitating faster availability of data by establishing direct connections between monitoring stations and repositories and towards EMODnet by machine-to-machine transfers and at working out a scenario whereby monitoring data remain at the source repository and are available to EMODnet by services.

The EMODnet Ingestion consortium has proposed to focus this at developments for operational oceanography and for the EMODnet Physics portal. It concerns two separate tasks:

- Establishing new connections to the existing EuroGOOS – Copernicus INSTAC Near Real Time (NRT) exchange progress
- Pilot for Real Time (RT) exchange using Sensor Web Enablement (SWE).

#### **NRT data exchange:**

The NRT machine-to-machine ingestion aims at identifying and arranging additional NRT data stations. These will originate from additional operators that are willing to get connected and share their NRT data freely in EMODnet Physics. At the launch of the Ingestion portal already standards and procedure for NRT data and a list of receiving repositories for NRT data have been published at the portal. The portal explains how the NRT exchange is organised between operators of observing stations and EuroGOOS – Copernicus and it gives a link to the EMODnet Physics portal to show how NRT stations can be displayed and used. Moreover a set of stepwise instructions is included in the Ingestion portal explaining how to connect in practice and also a list of EuroGOOS – Copernicus contact persons who to contact depending on region. The image below gives the introduction page where operators of operational oceanography stations are encouraged to join the NRT data exchange with EuroGOOS and CMEMS in order to become visible on the EMODnet Physics portal.



The screenshot shows the EMODnet Data Ingestion Portal. The top navigation bar includes links for HOME, ABOUT, DATA SUBMISSION, GUIDELINES, HELP, OPERATIONAL DATA (which is highlighted), and PROMOTION. A search bar is also present. The main content area is titled "Operational oceanography - Contribute to EMODnet Physics". It contains a brief description of the portal's purpose, a list of NRT data types, and a detailed explanation of the data streams collected by various platforms. Below this, there is a photograph of a research vessel at sea and a large map of Europe showing the locations of data collection platforms. A sidebar on the left provides links for navigating the portal.

*Image: NRT data exchange introduction page at the EMODnet Ingestion portal*

**SWE pilot:**

The Sensor Web Enablement (SWE) pilot concerns real time oceanographic monitoring systems, allowing direct standardised access to selected data types from selected monitoring instruments. This activity is led by BODC. The pilot is set up with four consortium members BODC, IFREMER, ETT and OGS which already had SOS implementations in place.

Partner	SOS url	Datastream
BODC	<a href="http://l1.linkedsystems.uk/52n-sos-webapp/service?service=SOS&amp;request=GetCapabilities">http://l1.linkedsystems.uk/52n-sos-webapp/service?service=SOS&amp;request=GetCapabilities</a>	Gliders from MARS (Marine Autonomous and Robotic Systems) NOC
OGS	<a href="http://nodc.ogs.trieste.it/sos/service?service=SOS&amp;request=GetCapabilities">http://nodc.ogs.trieste.it/sos/service?service=SOS&amp;request=GetCapabilities</a>	Two stations in the Adriatic Sea
IFREMER	<a href="http://oceanostrondemo.ifremer.fr/oceanotron/SOS/default?request=getCapabilities&amp;service=SOS">http://oceanostrondemo.ifremer.fr/oceanotron/SOS/default?request=getCapabilities&amp;service=SOS</a>	EuroGOOS ROOS's water column observations and SeaDataNet's aggregated TS collections
ETT	<a href="http://www.emodnet-physics.eu/map/SOS/HandlerDescribeSensor.ashx?PlatformID=18681/">http://www.emodnet-physics.eu/map/SOS/HandlerDescribeSensor.ashx?PlatformID=18681/</a>  <a href="http://dataportal.schema-ocean.eu/GetCapabilites.aspx">http://dataportal.schema-ocean.eu/GetCapabilites.aspx</a>	EMODnet Physics platforms per platformID  FP7 OOT SCHeMA project – all data produced by the project (CTD, metals, pH, ...)

*Table: SWE pilot partners and existing services*

**Platform and sensor profiles:**

Good progress is being made with formulating SWE profiles for the related platforms and sensors. This builds on work on-going in related EU projects to define SensorML and O&M templates such as ‘AtlantOS’, ‘BRIDGES’, ‘ODIP’ and “the Marine SWE profiles wiki” as well as in USA for IOOS. The ongoing work is also shared with the SWE marine community using the Marine SWE profiles wiki. Four types of profiles are currently being built for Version 2.0. Distinction is made in platforms and sensors. Additional distinction is made on models and instances of platforms and sensors. A sensor/platform model has a unique design and is usually produced by manufacturers in series. The physical characteristics and capabilities are the same for all products in that series. A sensor/platform instance is one of those products, usually identified by a unique serial number. The draft profiles can be found at:

- Platform instances:  
[https://docs.google.com/document/d/1p\\_rt8r9TPODhyCR\\_4iw-LKK\\_1Hllyb1PoYEjT9smWDE/edit?usp=sharing](https://docs.google.com/document/d/1p_rt8r9TPODhyCR_4iw-LKK_1Hllyb1PoYEjT9smWDE/edit?usp=sharing)
- Platform models:  
<https://docs.google.com/document/d/1A4y01eYUXIfB2qBnsyltaXQsYwGOp1S3QoJ9s19bWGU/edit?usp=sharing>
- Sensor Models:  
<https://docs.google.com/document/d/1kFokz2lupLARSGx8WIRITKKWQ9RsnNVSkSbyxYTlaK8/edit?usp=sharing>
- Sensor Instances (Not fully finished yet):  
<https://docs.google.com/document/d/1d1-p51NhcrgejEYbuUmqywmDzDgL4oRcufl2INme8jo/edit?usp=sharing>

It is planned that there will be agreement between EMODnet partners on the selected platform and sensor profiles in the coming month. Thereafter the profiles will also be proposed for acceptance by the Marine SWE profiles community.

#### Pilot SOS service and demonstrator:

The four SWE pilot partners have existing SOS implementations, providing access to oceanographic data streams. The following table summarizes the software behind each SOS implementation and SOS version:

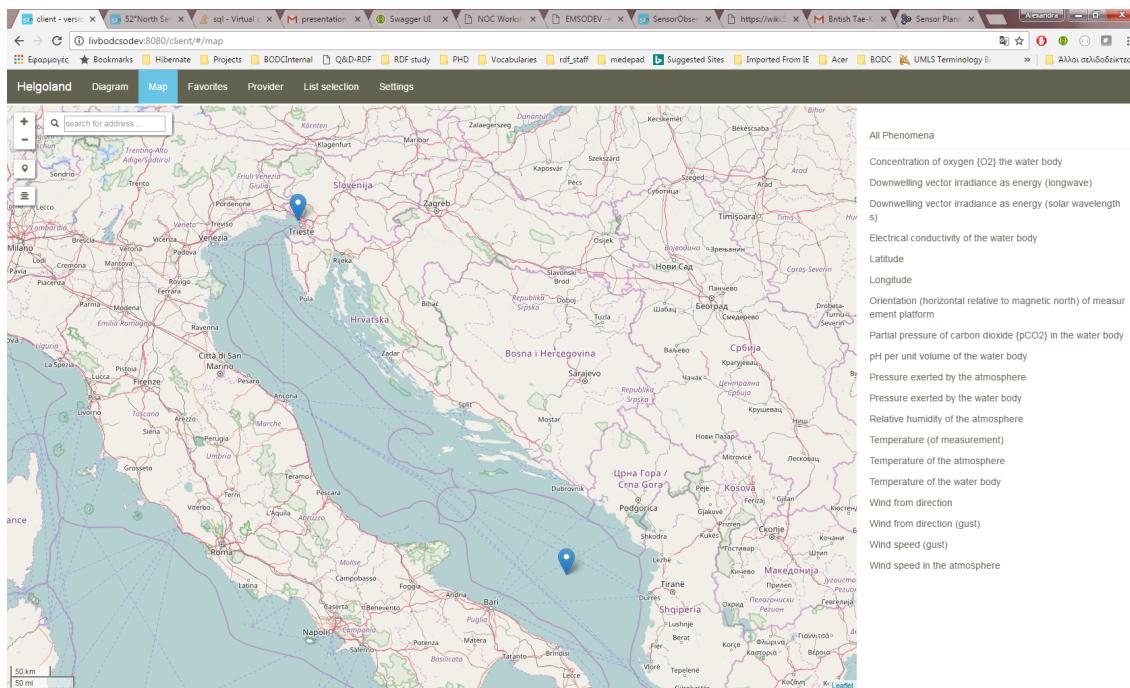
Partner	Software	Version
<b>BODC</b>	52 North	2.0
<b>OGS</b>	52 North	2.0
<b>IFREMER</b>	Oceanotron	2.0
<b>ETT</b>	Custom implementation	1.0

*Table: SWE pilot partners and existing software and SWE version*

Good progress is also being made with setting up the pilot SOS service for the four partners and to turn this into a SWE demonstrator that will be hosted at the EMODnet Physics portal and ‘advertised’ at the EMODnet Data Ingestion portal.

52 North has provided EMODnet with a SOS client: **Helgoland**. This client will bring together the different SOS implementations and provide functionality for visual exploration and analysis of the SOS data. It allows users to explore stations or mobile sensor platforms in a map, select time series by a list selection, visualize time series data or create favourites of selected time series. So far the 52 North SOS implementations of BODC and OGS were seamlessly integrated without issues. IFREMER needs to apply some changes on how SOS is published for its Oceanotron service, so that it can be properly integrated in the client. The service by ETT is not compatible, also because it is Version 1.0, and will thus not be included in the final demonstrator.

The image below gives a screenshot from the Helgoland SOS client. The map depicts the locations of the two stations provided by OGS. A list of the observed parameters of all stations is shown on the right panel. The observed properties are based on the SeaDataNet vocabularies. By selecting one of the offered parameters, the user can view the real time data for this parameter in a graph. The data stream’s metadata are incorporated on the right panel, revealing the name of the station, the observed property and the feature of interest. This metadata is derived from the SWE profiles.



*Image: Screenshot from the Helgoland SOS client displaying the OGS platforms*

Following the finalisation of the SWE profiles and the adaption of Oceanotron by IFREMER, the demonstrator will be completed for BODC, OGS and IFREMER and then integrated in the EMODnet Physics portal as well as advertised at EMODnet Ingestion portal. Detailed documentation and instructions will be prepared and made available at both portals for adoption by other operators of comparable monitoring stations who wish to join the demonstrator service. These activities will be finalised end October 2017. Thereafter the demonstrator is open for inserting additional platforms and sensors from other operators.

### ***WP4 – Marketing and outreach activities:***

The aim of WP4 is to market and promote the Data Ingestion service and its function in the overall EMODnet scheme, to identify and reach out to potential data sources and data providers, and to motivate data providers to participate with their data submissions.

So far most project action has focused on the technical development of the portal and its ingestion services and involving only a few core partners. However the promotion and outreach activities as planned in WP4 are equally important and require involvement of all consortium members, in particular in the coming 2 years of the project.

In the first year promotion and dissemination has focused more on establishing cooperation and synergy with the EMODnet community, in particular tuning with the EMODnet Secretariate which undertakes central promotion for EMODnet as a whole and the various EMODnet Thematic networks which are instrumental for the operation of the pathways as indicated in WP3.

However also preparatory work has been undertaken for WP4 to be ready for wider outreach and promotion to potential data providers. This has been done by drafting a promotion and dissemination plan and by initiating several promotion media. Moreover together with all consortium members a first inventory of potential data providers per country has been compiled. This inventory will be followed-up in the second and third year by EMODnet Ingestion members approaching and convincing those identified potential data submitters to make use of the EMODnet Ingestion service for ingesting their data sets

#### **Dissemination and promotion plan:**

The dissemination and promotion plan has been prepared by partner RBINS as WP4 leader. This plan provides a framework to leverage the aims of the EMODnet Data Ingestion project. The consortium will use this initial plan as a baseline that will be further reviewed, revised and updated during implementation, in line with stakeholders' perceptions and lessons learned. Specific channels will be evaluated for their reach, effectiveness in targeting particular groups. This plan will be revised in light of experience and necessary actions will be taken to ensure the effectiveness of communication and

dissemination actions. The purpose of the plan is to determine all planned communication and dissemination actions during the contract lifetime.

Many data collected by public authorities, researchers and private operators of coastal or offshore facilities still do not arrive to the national or regional repositories and are thus unavailable to scientists and engineers for further purposes. This creates additional costs for those working on marine issues who will have the choice of accepting lower confidence in their analysis than would otherwise be the case, or being compelled to needlessly repeat observations.

There is therefore the need to streamline the data ingestion process so that data holders from public and private sectors can easily release their data for safekeeping and subsequent distribution through EMODnet (or other means).

The previous EMODnet dissemination activities have been done mainly by spreading information to the established partners. However, EMODnet Data Ingestion asks for a change in the concept of dissemination in order to involve different communities and hopefully receive a positive feedback from them. We need to engage in outreach activities towards significant holders of marine data whose data are not already available. In practice EMODnet Ingestion members must actively identify potential data sources and data providers and undertake marketing and support activities to motivate and convince data providers to make use of the EMODnet Data Ingestion portal.

The dissemination and promotion activities will aim at targeting a wide ranging audience, from research, government and industry. The general goal is to make them aware of the EMODnet Data Ingestion service, and conscious about the need and the benefits of sharing and giving open access to marine data. Functionally, stakeholders can be classified into the following categories:

- **Industry:** This includes leadership companies and organizations from the diverse Ocean Business Community: shipping, oil and gas, fisheries, aquaculture, seabed mining, tourism, renewable energy, ports, dredging, mining, submarine cables, marine science, engineering and technology, the maritime legal, financial and insurance communities.
- **Navy:** The branch of the armed services of a state which conducts military operations at sea.
- **Academia/research institutions:** This includes organizations whose primary focus is higher education and research, such as universities and other academic institutes.
- **NGO:** This includes non-governmental organizations. They are not-for-profit organization that are independent from states and international governmental organizations.

- **Government:** This includes representatives from different levels of governmental organizations such as the European Commission, inter-governmental organizations or local governments. This category includes policy makers, regulatory, legislative, administrative or public authorities.

The table below summarises the different groups and sub-groups, and reasons for communicating with them.

Stakeholder affiliation & group	Why we want to reach these stakeholders
Industry	<ul style="list-style-type: none"> <li>• Engage them in a dialogue about unlocking, mobilizing and safe-keeping of marine data, its use and re-use and potential value for innovation</li> <li>• Support discussion on usability and standards</li> <li>• Raise awareness amongst the private sector of guidelines and standards developed by initiatives for marine information</li> </ul>
Navy	<ul style="list-style-type: none"> <li>• Engage them in a dialogue about unlocking, mobilizing and safe-keeping of marine data, its use and re-use and potential value for innovation</li> <li>• Support discussion on usability and standards</li> <li>• Raise awareness amongst the private sector of guidelines and standards developed by initiatives for marine information</li> </ul>
Research funding agencies	<ul style="list-style-type: none"> <li>• Engage in dialogue about how research funding policies can be adapted to include a data management strategy in their grants and calls for proposals</li> <li>• Encourage universities and data repositories to adopt a data management strategy</li> </ul>
Academia -Universities -Research institutes -Discipline specific networks	<ul style="list-style-type: none"> <li>• Enable researchers to participate in dialogue around marine data management and safe-keeping</li> <li>• Implement guidelines and standards developed by initiatives for marine information</li> </ul>

	<ul style="list-style-type: none"> <li>• Encourage academic organizations and researchers to conduct further research</li> </ul>
NGO	<ul style="list-style-type: none"> <li>• Engage them in a dialogue about unlocking, mobilizing and safe-keeping of marine data, its use and re-use and potential value for innovation</li> <li>• Support discussion on usability and standards</li> <li>• Raise awareness amongst the not-for-profit sector of guidelines and standards developed by initiatives for marine information</li> </ul>
Policy makers	<ul style="list-style-type: none"> <li>• Inform them about progress by the consortium</li> <li>• Engage them in a dialogue about unlocking, mobilizing and safe-keeping of marine data, its use and re-use and potential value for innovation</li> <li>• Encourage academic organisations and researchers to make use of the Data Ingestion service for safe-keeping their marine data</li> </ul>

*Table: Stakeholders and reasons for communicating with them.*

An understanding of stakeholder interest, motivations and drivers is essential for effective dissemination and prioritisation. Understanding stakeholder motivations will enable the consortium to effectively engage, communicate with and promote future dialogue between different stakeholders. The combination of the stakeholders' relevance to EMODnet Data Ingestion and motivations will help the consortium define targeted communication strategies for different groups of stakeholders. Stakeholders are often varied and heterogeneous, with different levels of interest or power.

#### **Dissemination tools:**

The dissemination of the results of EMODnet Data Ingestion will take several forms and use a variety of media. The first year of the project has focused mostly on analysing and developing the technical services for supporting the data ingestion process and pathways. The second and third year will focus much more on the promotion and outreach activities and will be supported by various media.

- **Project Presentations**

The project summary presentations consist of approx. 15 slides that are shared through the portal, so that anyone can download it. It describes the objectives and project activities with the

purpose of explaining the whole data ingestion and safe-keeping of marine data process from data originators to EMODnet thematic portals. Updated versions are made following project progress and published also at the portal. So far 5 versions have been released at the portal as presented at different events.

- **Film**

Video is an effective means of dissemination. A short (max. 3 min.) film/documentary will be produced and disseminated. Aspects of the short film which are important with respect to EMODnet Data Ingestion:

- Make 'low threshold' technical animations of the Data Ingestion concept
- Show 'EMODnet Ambassadors' and footage of their activity and background if relevant

EMODnet Data Ingestion will present one scenario in a short video film that will be publicly accessible on the project website and distributed via social networks. Recently the story book has been drafted and the movie is planned for release end October 2017.

- **Leaflet**

The leaflet is an A4 (two sided) paper containing information on the project as a whole but also will contain success stories (one on each side). This success story will have a data description, an analysis of the problems/obstacles and a solution. It will make clear what the added values are after the data ingestion process was finalized. The leaflets are to be distributed through all partners to any dissemination event they participate in. Different leaflets might be produced during the course of the project and will be made available on the portal. The first leaflet is in preparation.

- **Presentations at external events & conferences**

Conferences are a means of developing national and international connections with governmental, non-governmental, industry or academic leaders, and engaging in a direct, face-to-face communications and discourse. EMODnet partners will present the EMODnet Data Ingestion service at relevant events and selected conferences targeting the marine scientific community at large and specific industrial sectors, and annual meetings of working groups and international committees, such as the EMODnet Conferences, European Geosciences Union (EGU), Joint IHO-IOC Guiding Committee for GEBCO (General Bathymetry Charts of the Oceans), and others. Presentations might also be possible in relevant committees like WG-DIKE (Marine Strategy Framework Directive WG on Data and Information Knowledge Exchange) and the MSP Member States Expert Group. Participation in events will be coordinated between the coordinators MARIS and HCMR and the WP4 leader RBINS. Existing presentations will be updated following project status and targets of the events.

So far EMODnet Ingestion has been presented at the following events:

- IMDIS 2016 Conference, 11 October 2016, Gdansk - Poland
- EMODnet Steering Committee meeting, 15-16 February 2017, Brussels – Belgium
- EMODnet HRSM Kick-off meeting, 20 March 2017, Venice – Italy
- EMODnet Physics 3 kick-off meeting, 19 April 2017, Milan – Italy
- SeaDataCloud TTG meeting, 4 May 2017, Bologna – Italy
- European Maritime Day 2017, 10 May 2017, Poole – United Kingdom
- EMODnet Chemistry 3 kick-off meeting, 17 May 2017, Trieste – Italy

Most of these events are inward directed and used for further developing of the technical facilities of the EMODnet Data Ingestion portal and services. In the coming years more events will be visited for promoting the uptake of the Ingestion portal by data providers.

- **Bookmarks**

A set of 4 different bookmarks has been designed and printed (two sided) on paper containing a short motto, colourful illustration and the portal address. All project members have received a set of these bookmarks which can be used as hand-outs when visiting potential data providers.



*Image: EMODnet Data Ingestion bookmarks*

- **EMODnet Ingestion portal**

The portal at <https://www.emodnet-ingestion.eu> is one of the main sources of information available to most stakeholders. It is designed to be informative with clear language to ensure wide communication with diverse categories of stakeholders and external audience. The portal will contain deliverables produced as part of the EMODnet Data Ingestion project as well as other dissemination and communication items aimed at stakeholders, such as news articles,

conference presentations, and promotional items. The website will be continually updated throughout the course of the project, and thus will act as a dynamic and up-to-date source of information for stakeholders interested in open access to research data.



Home

#### Welcome to the EMODnet Data Ingestion portal

The European Marine Observation and Data Network (EMODnet) consists of more than 160 organisations that together work on assembling, harmonising and making marine data, products and metadata more available to public and private users. This Data Ingestion portal facilitates additional data managers to ingest their marine datasets for further processing, publishing as open data and contributing to applications for society.

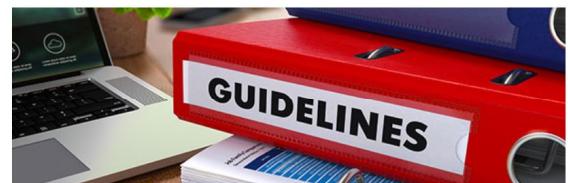
[READ MORE](#)



#### Submit your data

The online Data Submission service facilitates you to submit marine datasets by completing a form and uploading your data as a package. The service also provides long term stewardship and publishing for your datasets.

[READ MORE](#)



#### Check guidelines for formatting data

The wider use and processing of your submitted datasets by public users and by receiving data centres is made much easier if you apply standard formats and quality control to your datasets before submission. This option gives an overview of relevant guidelines for various marine data themes.

[READ MORE](#)

*Image: EMODnet Data Ingestion portal*

- **Poster & Banner**

A poster in the similar style as the leaflet, but with less text and strong visuals instead, has been designed. This is to be used at communication boards or entrances of event venues for example, to be able to attract audience to a stand. The poster is approx. 50x70cm in size. Initially an amount of 10 copies will be printed at RBINS. Furthermore a roll-out banner (2 meters high by 70 centimetres wide) will be designed according to the style of the poster. It can be utilised for press conferences, workshops and other similar events. The image below gives an artist impression of a poster at an underground station.



*Image: artist impression of poster*

- **Social Networks**

Online social networks are another potentially useful dissemination tool and channel. Use will be made of the central Twitter, Facebook and LinkedIn accounts as set up for EMODnet by the EMODnet secretariat. The access to these social media has been incorporated in the EMODnet Data Ingestion portal. Twitter is a particularly useful way at engaging participants at events and in increasing the impact and visibility of such events.

- **Personal communications – networking**

One of the primary means of stakeholder outreach will be by personal contacts between EMODnet Ingestion members and potential data submitters through networking at events, visiting, webconferences, e-mail and phoning. The communication should be aimed at promoting EMODnet and EMODnet Ingestion in particular, identifying potential for the data submitter, and giving guidance and support for getting on board.

- **Workshops**

EMODnet partners can use workshops to discuss, present and help a target audience with the EMODnet Data Ingestion Portal. Workshops can be set up at the national level to engage multiple stakeholders, to demonstrate EMODnet thematic portals and the EMODnet Ingestion portal and

solicit feedback with regards to the objectives of the project, to discuss the potential benefits for the different target audiences and to formulate follow-up activities. Crucially, workshops will also enable opportunities of interaction with stakeholders among the EMODnet network, as well as by providing different stakeholders with an opportunity to get together.

- **Promotion at EMODnet portals**

It has been agreed at the EMODnet Steering Committee meeting of February 2017 with the EMODnet Secretariat and the coordinators of the EMODnet Thematic portals that each will include a promotion text and a link to the Data Ingestion portal in their portals. This is making good progress and already promotion can be found at:

- EMODnet Central portal
- EMODnet Physics portal
- EMODnet Seabed Habitats portal
- EMODnet Bathymetry portal
- EMODnet Biology portal
- EMODnet Human Activities

EMODnet Geology and Chemistry are upgrading their portals and will also include promotion to EMODnet Ingestion in due time.

- **Use cases**

Part of the promotion and marketing will be done by developing use cases that can serve as demonstrators to specific thematic groups and also as a way for gaining experiences and feedback for finetuning the EMODnet Ingestion services and guidance material. A number of use cases are already underway. To maximize its impact, these use cases focus in particular on data sources for which the national government has a form of leverage. It concerns monitoring data which is acquired by third parties in the framework of a license procedure and in support of impact assessment analyses, in these cases for renewable energy projects. The progress of these use cases will be described below.

### **Identification of potential data sources**

In the workplan a coordinated action of the data centers, which are partners in the EMODnet Ingestion consortium, has been planned to analyse their national situation and to identify potential data sources of possible interest to EMODnet and their providers. These national overviews will then be analyzed together as a second step in order to identify the best candidates for a successful and useful ingestion. These candidates will be approached in outreach activities to collect more details and to discuss and support actual data submissions.

For implementation all consortium members have been requested to prepare a national inventory of potential data providers and data sources to prepare for the 2nd Plenary Group meeting (10-12 April 2017). For that purpose MARIS had prepared and distributed to all a guidance document. This guideline gives an overview of the data types that have priority for the EMODnet thematic portals and it gives general guidance and hints how the EMODnet Ingestion members might compile their national overviews. Finally it gives a template for reporting identified potential data providers and possible sources. The following section gives an extract of the guideline.

#### **Thematic data priorities:**

The following overview has been prepared based upon input received from EMODnet Thematic portal coordinators in various forms and at various occasions.

<b>Bathymetry portal</b>	
<u>Data sets</u>	<b>Bathymetric survey data sets:</b> plummets, single beam, multibeam, LIDAR, and other survey data, preferably high resolution surveys, for all coastal waters and coastal zones along the European sea regions. Also demand for high resolution survey data sets for offshore waters in European sea regions.
<u>Possible providers</u>	Industry (e.g. oil & gas industry, renewable energy, survey companies, ..), local and regional authorities, harbours and ports as well as hydrographic offices and marine research institutes which are not yet in the EMODnet Bathymetry (HRSM) consortium.
<b>Chemistry portal</b>	
<u>Data sets</u>	<b>Chemistry data sets:</b> relevant for determining eutrophication such as nutrients, chlorophyll, and oxygen, and determining pollution such as contaminants in water, seabed and biota <b>Marine litter data sets:</b> marine litter, collected on beaches, in fishermen's nets, or in specific surveys, both macro-objects (nets, bottles etc.) as well as fragments and microparticles in the water column, sediments and on beaches..
<u>Possible data providers</u>	Industry, local and regional authorities, as well as marine research institutes and monitoring agencies which are not yet reporting through data centres in the EMODnet Chemistry consortium. Moreover NGOs and voluntary groups that are active in the monitoring of marine litter.
<b>Physics portal</b>	
<u>Data sets</u>	<b>Near real time physical oceanography data sets from operational monitoring stations:</b> for which their operators might want to join the European NRT data exchange as organised through EuroGOOS and CMEMS InSTAC. <b>Historical time series of physical oceanography data collection campaigns and stations</b>

<u>Possible data providers</u>	Industry, local and regional authorities, as well as marine research institutes and monitoring agencies operating physical oceanography stations which are not yet connected to EuroGOOS or CMEMS for inclusion in EMODnet Physics; or that have historical physical oceanography time series that are not yet included in EMODnet Physics through SeaDataNet.
<b>Biology portal</b>	
<u>Data sets by taxonomic / functional groups</u>	<p><b>Angiospermae and macroalgae:</b> Data are almost lacking in EurOBIS.</p> <p><b>Fish:</b> There is basically no fish data for the Black Sea and very few fish for Northern Baltic Sea, Mid and East Mediterranean Sea and the Arctic Ocean. Requested are data from fisheries surveys.</p> <p><b>Zooplankton and phytoplankton:</b> Currently few data in the regions not covered by the CPR surveys: most of the Mediterranean, the Black Sea, Baltic Sea, the Arctic Ocean, Sea of Jan Mayen and the Northern parts of the Iceland Sea.</p>
<u>Parameters</u>	Data on <b>species traits</b> is also a priority, more specifically taxonomy, geography body size, environment, habitat, depth, reproduction, mobility, skeleton and diet.
<u>Possible data providers</u>	Industry (fisheries sector, ..) , local and regional authorities, as well as marine research institutes and monitoring agencies which are not yet reporting to EurOBIS or through data centres in the EMODnet Biology consortium.
<b>Geology portal</b>	
<u>Data sets</u>	<b>Geotechnical sites data; Marine gravimeter/ gravity data; Magnetometer/ magnetic gradiometer data; Single Channel Seismic Data; Multi Channel Seismic Data; Species and benthos data by grab or core; Sampling sediment and rock characteristics; Sidescan sonar data; Backscatter; and Geological maps.</b>
<u>Possible data providers</u>	Industry (e.g. oil & gas industry, renewable energy, survey companies, geotechnical consultants, ..), local and regional authorities, harbours and ports as well as marine research institutes which are not yet contributing to EMODnet
<b>Human activities portal</b>	
<u>Data sets</u>	<b>Locations and metadata for: Aqua culture data sets:</b> sea water, brackish and freshwater aquaculture farms; <b>Military purpose areas;</b> <b>Cables:</b> power and telecommunication cables; <b>Nuclear energy plants;</b> <b>Pipelines:</b> gas, oil and water pipelines; <b>Transport:</b> shipping accidents, density, emissions and real-time traffic
<u>Possible data providers</u>	Industry (maritime, aquaculture, energy, cables, ..), harbours, ports, local and regional authorities, as well as marine research institutes and governmental organisations which are not yet contributing to the EMODnet Human Activities portal.

<b>Seabed habitats portal</b>	
<b>Data sets</b>	<b>Habitat maps from surveys; Habitat maps produced by research groups.</b>
Possible data providers	Industry (ecology consultants, energy sites developers, ..), local and regional authorities, as well as marine research institutes and governmental organisations which are not yet contributing to the EMODnet Seabed Habitats portal.

Note: the possible data providers are suggestions; the EMODnet Ingestion members are asked to review and refine this.

**Guidance and hints:**

The consortium members should identify potential data providers as organisations that are not yet involved in regular data exchanges with the EMODnet data centres. The overview of thematic data priorities should be taken as a checklist for the searches and identification of potential providers. The consortium members should try to cover input for each theme; however the quality of the inventory of potential data providers is more important than the quantity i.e. number of identified data providers. Quality is depending on judgement of the consortium members concerning the data resources that might be managed, the willingness to cooperate, the possible leverage that might be exercised, the existing contacts through joint projects and networks, and any other relevant criteria.

Concerning industry it is not easy to achieve cooperation in releasing data; therefore it is advised to focus and identify for this group data providers and related projects in which the national government might have a form of leverage. For instance various industrial activities at sea require licenses which obligate parties to perform environmental monitoring and to make these data available for public release. Also governmental and controlling bodies often have rights on all or most of the data collected in the frame of the preparation of licensed activities (e.g. geotechnical investigations). However these monitoring and preparatory investigation data might not be published by the related authorities or at their own websites without exchange to your data centres. Concerning research communities there might be research programmes with data acquisition which are funded by the government and for which data management is not yet arranged, but again some form of leverage might be exercised for releasing the data. Or again the data might be published at their websites but not yet shared with your data centres. Concerning government there might be several regional and local bodies that are collecting and managing marine and coastal data sets which are public but not yet exchanged with the data centres.

To gather entries and prepare the national lists it is suggested to brainstorm with colleagues in the organisation as there might be various projects, programmes and networks in which the organisation is involved with potential data providers and through which already established contacts exist. Also colleagues might give suggestions which can be followed up with google searches to get more insight in

the potential. Therefore Ingestion members are strongly encouraged to involve colleagues from their wider organisation and not only from their data centre division in the brainstorming and identification process.

Also Ingestion members are requested to check the Lists of Data sets that have been collated by the EMODnet Regional Checkpoint studies and which are available at their websites, which can be found via the central EMODnet portal ([www.emodnet.eu](http://www.emodnet.eu)). These Checkpoint lists might contain relevant entries for specific countries.

#### **Reporting template:**

The following items are to be gathered and described in the reporting template using excel:

- **Record number:** number each individual entry starting with 1
- **Country:** indicating your country by ISO 3166 code
- **Reporting consortium member:** indicate your centre by its EDMO code
- **EMODnet Theme:** indicating Bathymetry, Geology, Chemistry, Physics, Biology, Human Activities, or Seabed Habitats
- **Potential data provider:** indicating name organisation, website and possible contacts with name, email and position
- **Potential data sets:** indicating data types and possibly further descriptive information on geographical and temporal coverage
- **Context info:** indicating in which context such as project, programme, task, activity, .. the data provider might have relevant data sets
- **Opportunity:** indicating your initial judgement how the data provider might be motivated to cooperate and release its data sets for EMODnet.

#### **Result of initial inventory and tuning activities:**

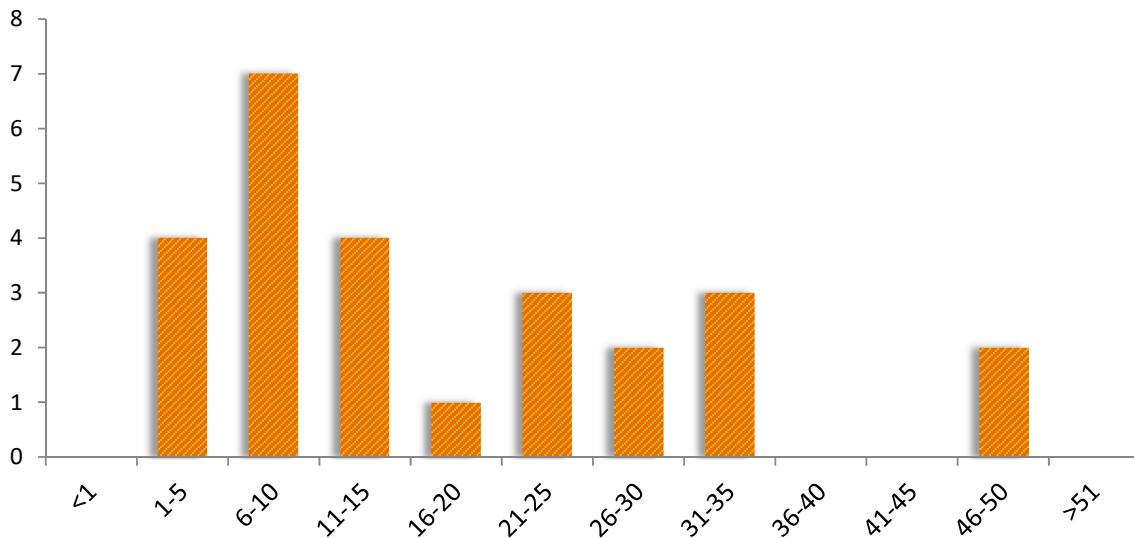
Almost all Ingestion data centre members responded and submitted their national inventories in time before the meeting, while a few missing partners brought their inventories to the meeting. Anyway RBINS made a first analysis to prepare the total overview for discussion and refinement at the plenary meeting. At the 2nd Plenary Meeting itself a major activity has been dedicated to going through the total inventory by EMODnet theme to analyse the results in order to identify the best candidates for which follow-up activities will be undertaken by the national members. The thematic sessions were coordinated by each relevant thematic coordinator who asked for further details and considered whether provided data options are priority or not. This way a number of thematic sessions took place to filter and mark-up the total inventory:

- Bathymetry – MARIS
- Geology – GTK

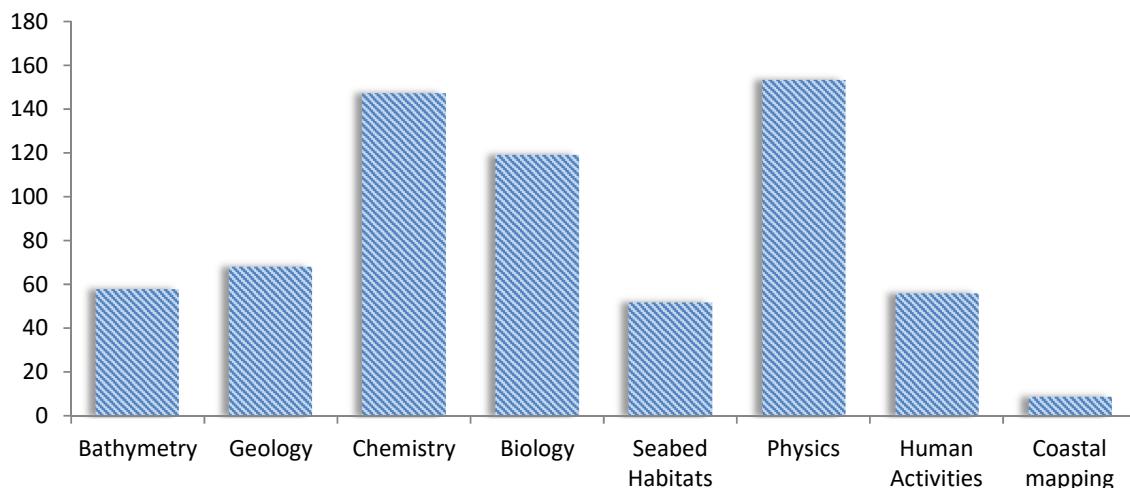
- Chemistry – OGS
- Human Activities – COGEA
- Biology – VLIZ
- Physics - ETT

This activity resulted in a filtered total inventory which required some further elaboration and cleaning, also incorporating some late entries. This final editing has been done by RBINS.

It has delivered an overall inventory of EMODnet Ingestion members, comprising **in total 26 countries reporting 466 potential new data sources**. There is quite a spreading in the number of entries per country. Some countries only have provided a few entries (5 – 9) while there are also countries with > 50 entries. Partly maybe due to the size of a country, but also maybe due to differences in aggregation and dedication. Over the whole, all data themes are well represented. This can be illustrated by the following 2 graphs.



*Image: Total number of data sources per numbers of country*



*Image: number of entries per EMODnet themes*

The resulting inventory is included in **Annex 2** and can be considered as a ‘shopping list’.

#### **Follow-up activities towards mobilising data sources**

It is planned that each data centre consortium member will use the resulting shopping list to undertake actions towards the identified data providers. The ultimate goal is to achieve willingness and cooperation with the identified potential data providers for submitting selected data sets to the EMODnet Ingestion portal.

This requires that the consortium members first of all prepare themselves well for representing EMODnet and EMODnet Ingestion. The members will function as EMODnet ambassadors. Therefore each member must become well aware of the EMODnet background, learn how to operate and demonstrate the EMODnet Thematic portals, and become very knowledgeable in the procedures and used formats for the EMODnet Ingestion portal and well experienced in using the Submission service. The latter requires serious practicing with the test submission service. Once well trained, it is planned that consortium members will approach potential data providers in order to learn more about their potential data sources and to explore possibilities for setting up a meeting to present EMODnet and to discuss their possible cooperation with EMODnet Ingestion.

If positive, the consortium member should offer support to the data provider for the actual data submissions. Thereby the consortium member might also help to organise the local data collection in a series of data packages of data sets including relevant documentation that can be submitted and more easily handled by the assigned data centres.

Also it might be considered to organise some local workshops, involving multiple potential data providers, to promote EMODnet and cooperating with EMODnet Ingestion in a more effective way. Thereby it is advised to involve also some data providers for which it is already known that they are positive towards the Ingestion process. They can then promote cooperation during the local workshops.

These follow-up activities will be supported by the central promotion campaign and the set of promotion materials which will be made available by RBINS.

All data centre consortium members will maintain a progress report of their activities and achievements, both negative and positive, that will be regularly shared with RBINS, MARIS and HCMR for inclusion in progress reports and to learn best practices which can be shared also with the whole consortium.

**Progress with use case ‘renewable energy development data in the UK’**

The Crown Estate (TCE) in the UK is an independent commercial business, created by Act of Parliament. Its role is to ensure that the land and property invested in and managed are sustainably worked, developed and enjoyed to deliver the best value over the long term. It owns the sea bed out to the 12nm limit, which in practice means 850,000 km<sup>2</sup> – 3 times the size of the UK. Since 2004 it provide operators rights to license the generation of renewable energy within EEZ (200nm).

All marine environmental data collected by the offshore wind industry in the UK is provided to The Crown Estate. A data clause within the lease agreement with The Crown Estate stipulates this. Offshore renewable energy developers provide data to The Crown Estate through the ‘Marine Data Exchange’ programme and this information is freely available. The MDE was developed in 2012 and it provides a platform to store, manage and share the data collected during the planning, building and operation of offshore renewable energy projects. It offers anyone with an interest in the marine environment free access to information, helping to de-risk further investment offshore and open up value.

The MDE is highly successful and already more than 100 terabytes of data are managed at the MDE Cloud. So far >5500 submissions have been achieved including data sets and reports. The MDE uses a metadata format based upon the MEDIN format which is based upon ISO 19115 and supported by BODC vocabularies. In 2016 > 7700 data sets have been downloaded by a growing audience of consultants, developers and academics, as well as visitors from NGOs and government.

The UK also has the MEDIN network (Marine Environmental Data and Information Network) which has sponsors from government, research and private sector. It manages a hub for UK marine data, standards and expertise for marine data management. MEDIN has Data Archive Centres for the various themes such as BODC, BGS, UKHO, MetOffice and others.

MEDIN is interested to elaborate selections of the MDE data resources for inclusion in its DACs as this would make these MDE data sets better fit for various applications. This conforms to the approach as applied in EMODnet Ingestion for Phase II and pathways. This elaboration can require serious efforts which need funding.

The use case for EMODnet Ingestion comprises 2 elements with the following actions:

- BODC will make a selection of MDE datasets that will be manually submitted to the EMODnet Data Ingestion portal for further processing and inclusion in the national UK data centres (BODC and BGS), that are partners in EMODnet Ingestion, and for consecutive population in SeaDataNet and EGDI for feeding EMODnet portals as part of Phase II
- BODC together with MARIS will explore establishing a potential metadata exchange from the MDE towards EMODnet Ingestion by machine-to-machine service as part of Phase I. The target deadline is end 2017.

In the latter case large numbers of metadata records might be exchanged from the MDE directly towards the Ingestion Summary Records service by means of an XML web service. These MDE records should concern relevant data sets and not study reports. In discussion it is recommended to focus on datasets for:

- Metocean measurements
- Biological monitoring

The actual data packages should stay managed at the MDE cloud and retrievable for EMODnet through direct links. This approach might later also be followed for other major marine data ingestion portals, whereby EMODnet Ingestion can be considered as the European hub. Note: this direct exchange solution can be considered as optimising pathways.

#### **Progress use case ‘offshore wind park data in the Netherlands’**

In the Netherlands sector of the North Sea already a number of offshore wind farms is operational and new developments for additional wind farms are well underway. Establishing and operating an offshore windfarm requires licenses from the Dutch government. This includes that windfarm operators are required to undertake marine environmental monitoring activities for gathering long timeseries and samples of relevant parameters for physical oceanography and marine biology. These ecology dataset collections are collected as part of the license and can serve studying possible effects of the construction and exploitation of the windfarms on their environment. The license includes also that these data are to be shared with public authorities for possible re-use and analyses. However in practice these monitoring datasets were falling somewhat outside of the normal pathways and as effect did not reach the national marine data management infrastructure. Therefore Rijkswaterstaat (Public Works Department) and

Deltares, both partners in EMODnet Data Ingestion, made an arrangement for safeguarding the datasets. This is organised in the ‘Wind at Sea Ecological Monitoring Program (Wozep).

In June 2016 a Political Declaration on energy cooperation has been signed between the North Seas Countries. This includes increasing the availability and interoperability of marine data for planning, impact assessment, licensing and operations. The support group on Maritime Spatial Planning recommends to use EMODnet standards and portal for sharing marine data. The Wozep programme and EMODnet Ingestion use case can demonstrate this.

In practice, Deltares undertakes activities for processing and documenting the monitoring data from the offshore windfarms in the Netherlands sector using its OpenEarth tools and prepares the datasets for long term stewardship and availability. The collected data concern distributions of species (mammals, birds (ship and airplane counts), fish (+ larvae and eggs), and benthos) and other datasets such as flight-patterns of birds and bats, effect studies of noise, and collision model results. Data originators are: institutes, consultants, companies, and universities.

The incoming data and metadata are converted to national standards following the AQUO standard and from there it is planned to work up the data sets up for population of EurOBIS and SeaDataNet. Therefore activities are now underway for developing exchange mechanisms from OpenEarth towards EurOBIS and towards SeaDataNet CDI service. This also requires mapping of AQUO vocabularies towards SeaDataNet vocabularies which partly already has been done in earlier years. The target deadline is end 2017.

## 6. Meetings held since last report

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The following project meetings took place to initiate the project and to monitor progress. Also meetings took place with the EU, EMODnet Steering Committee and other EMODnet lots for tuning developments. More information about the meetings is given in chapter 5 about the work packages.

Date	Location	Topic	Short Description
26 – 27 May 2016	Amsterdam – The Netherlands	EMODnet Ingestion Project kick-off meeting	To start the project, meet the partners, and to communicate the overall approach
10 June 2016	Brussels - Belgium	Contractual kick-off with EASME and DG MARE	To discuss contractual procedures between EU and the consortium.
11 – 13 October 2016	Gdansk - Poland	IMDIS 2016 Conference	To present EMODnet Ingestion to an international audience of marine data managers
7 – 8 November 2016	Athens - Greece	Technical Working Group meeting	To discuss progress and further planning of the portal, associated services, pathways and promotion.
8 December 2016	Brussels - Belgium	Progress meeting with EASME, DG MARE and EMODnet Secretariate	To discuss progress in particular for the portal, submission service and outreach
15 – 16 February 2017	Brussels - Belgium	EMODnet Steering Committee meeting	To present set-up, progress and tuning with other lots
23 February 2017	The Hague - Netherlands	Use case meeting with RWS and Deltares	To discuss approach for NL use case with wind farms monitoring data
20 March 2017	Venice - Italy	EMODnet HRSM Kick-off meeting	To introduce EMODnet Ingestion and its planned cooperation with HRSM project and network

## **EMODnet Ingestion and safe-keeping of marine data**

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<b>Date</b>	<b>Location</b>	<b>Topic</b>	<b>Short Description</b>
10 – 12 April 2017	Limassol - Cyprus	2nd EMODnet Ingestion Projectgroup meeting	To present and discuss progress with the portal and services; to discuss inventory of potential data sources and the plan for outreach
19 April 2017	Milan - Italy	EMODnet Physics 3 kick-off meeting	To introduce EMODnet Ingestion and its planned cooperation with Physics 3 project and network
4 May 2017	Bologna - Italy	SeaDataCloud TTG meeting	To introduce EMODnet Ingestion and its planned cooperation with SeaDataCloud
10 May 2017	Poole – United Kingdom	European Maritime Day 2017	To present EMODnet Ingestion
17 May 2017	Trieste - Italy	EMODnet Chemistry 3 kick-off meeting	To introduce EMODnet Ingestion and its Chemistry 3 project and network

## 7. Outreach and communication activities

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The outreach and communication activities are undertaken as WP4 and have been reported in Chapter 5 in the section concerning WP4.

## 8. Updates on performance indicators

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As indicated earlier most project action in the first year has focused on the technical development and testing of the portal and its ingestion services as well as on setting up the organisation of the pathways and instructing involved data centres for processing incoming data packages and submission forms. The system and organisation first had to be well ready before undertaking intensive marketing and outreach activities.

The EMODnet Data Ingestion portal is operational since February 2017 and promotion activities have been taken up in the following months, in particular by references to EMODnet Ingestion through the EMODnet Central portal and EMODnet thematic portals, next to a recent presentation at the European Maritime Day for a target community.

### Web Statistics

The visitor statistics for the first months are given below.

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Feb-17	703	1,092	15,816	38,669	1.55 GB
Mar-17	668	1,035	4,388	13,698	870.03 MB
Apr-17	5,617	6,128	9,846	19,068	946.18 MB
May-17	5,935	6,424	15,824	25,282	661.99 MB

Table: web statistics for [www.emodnet-ingestion.eu](http://www.emodnet-ingestion.eu)

### Submission

### statistics

So far only a few entries have been received for the Submission Service. This concerns the following submissions:

- Timeseries of tidal data from stations operated by ISPRA-Institute for Environmental Protection and Research – Italy
- Extensive data set of oceanographic data obtained from instrumented marine mammals through the Marine Mammals Exploring the Oceans Pole to Pole (MEOP) programme from Stockholm University, Department of Meteorology - Sweden

These forms will be elaborated by the assigned data centres.

In addition a first success can be reported for an organisation that wants to join the Near Real Time data exchange for which access is given through the EMODnet Physics portal:

- HF radar data by Shom – France

This will be elaborated by the EMODnet Physics consortium.

As part of WP4 activities will be undertaken in the coming months by all Ingestion data centre members to reach out to the identified potential data sources and data providers. Together with the parallel activities for the renewable energy use cases in the United Kingdom and Netherlands this should function as a catalyst to initiate submissions and give momentum to the Submission Service.

In that case there will be multiple submission forms in various stages of completion in the submission service, while completed submissions will be published through the Summary Records service at the portal.

#### **Generating Key Indicators in the near future:**

Extra functionality has been developed and integrated in the dashboard for Data Centres and Masters for generating key indicators. The indicators for progress and availability of datasets can be generated and accessed in two ways:

- Filtering the datasets
- Generating summary reports

These will be explained below and illustrated with screens from the **test version** of the submission service, which contains multiple submission forms, albeit with test content.

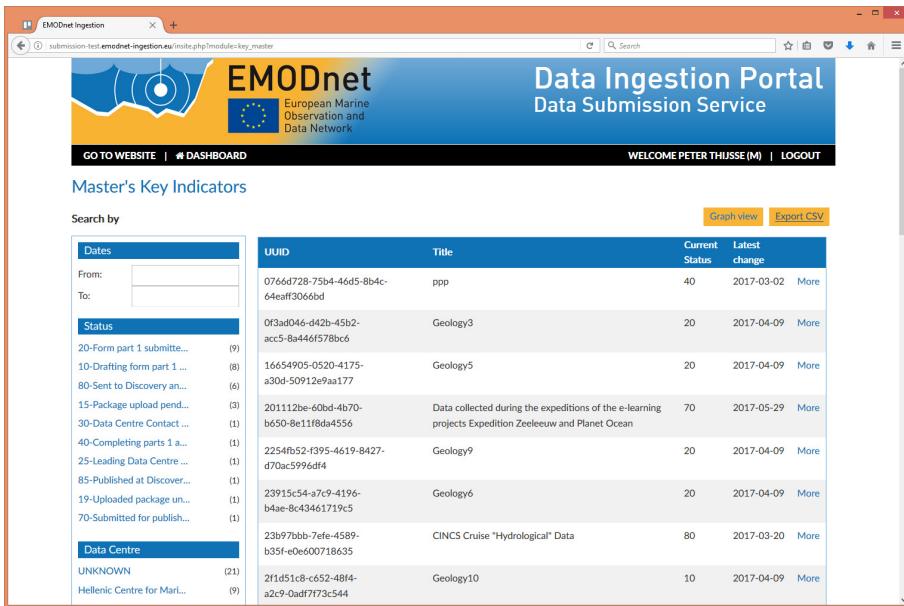
#### **Filter the list of datasets in the system via several search criteria**

Use is made of a facet search on the following criteria:

- Date from – to: to define a time window which takes into account earliest date of submission entry and date of publication
- Status
- Assigned data centre
- Data submitter organisation
- Country of data submitter
- Specialism (of assigned data centre)
- Processing period (days): How long is the submitted dataset already in the system
- Sea area (indicated as coverage of the dataset)

In the result list the names and status of submission forms are shown, with links to full details. By using these filters the Data Centre and Master users can get very detailed overviews of which datasets are in

a specific status, which datasets are being processed per data center etc. Which will support monitoring progress.



	UUID	Title	Current Status	Latest change	
0766d728-75b4-46d5-8b4c-64eaff3066bd	ppp		40	2017-03-02	<a href="#">More</a>
0f3ad046-d42b-45b2-ac5c-8a446f5780c6	Geology3		20	2017-04-09	<a href="#">More</a>
16654905-0520-4175-a30d-50912e9aa177	Geology5		20	2017-04-09	<a href="#">More</a>
20112be-60bd-4b70-b650-8e118da4556	Data collected during the expeditions of the e-learning projects Expedition Zeeleeuw and Planet Ocean	70	2017-05-29	<a href="#">More</a>	
2254fb52-f395-4619-8427-d70ac5996d4f	Geology9	20	2017-04-09	<a href="#">More</a>	
23915c54-a7c9-4196-b4ae-8c43461719c5	Geology6	20	2017-04-09	<a href="#">More</a>	
b35f-e0e600718635	CINCS Cruise "Hydrological" Data	80	2017-03-20	<a href="#">More</a>	
2f1d51c8-c652-48f4-a2c9-0ad7f7173c54	Geology10	10	2017-04-09	<a href="#">More</a>	

*Image: Overview of the key indicator function with facet filters on the left and on the right the list of submissions matching the filters*

### Generating summary reports

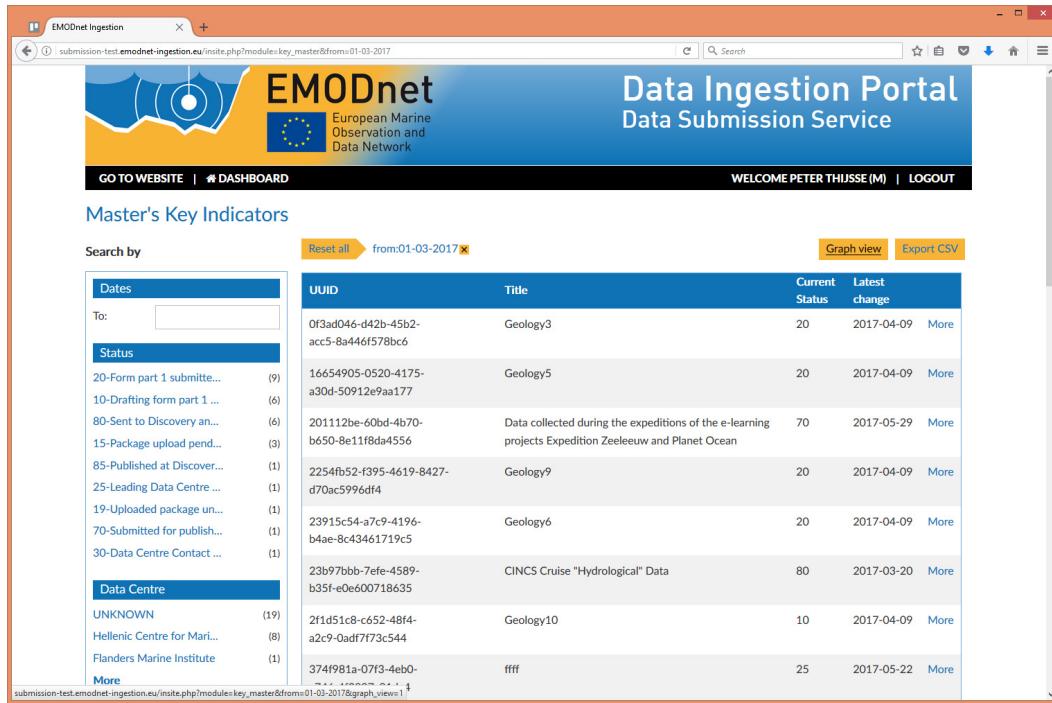
By using the filters mentioned above the user can – if needed - make selections of the total content, e.g. over a period of time. For reporting, the results can then be either visualised graphically (in pie-charts) or exported as a CSV file. The reports provide insight in:

- Number of submission forms per status
- List of assigned data centres and number of submission forms per assigned data centre
- List of data submitter organisations and number of submission forms per data submitter organisation
- List of countries (of data submitter) and number of submission forms per country
- List of specialisms and number of submission forms per specialism
- List of processing periods, defined as days between earliest date of submission entry and date of publication, and the number of submission forms per processing period
- List of sea areas covered by the submissions, and the number of submissions per sea area.

The pie charts can be downloaded as PNG files for inclusion in reports, and on each “slice” the user can click to drill down further and get more detailed insight.

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UUID	Title	Current Status	Latest change
0f3ad046-d42b-45b2-ac5c-8a446f578bc6	Geology3	20	2017-04-09 More
16654905-0520-4175-a30d-50912e9aa177	Geology5	20	2017-04-09 More
201112be-60bd-4b70-b650-8e11fbda4556	Data collected during the expeditions of the e-learning projects Expedition Zeeleeuw and Planet Ocean	70	2017-05-29 More
2254fb52-f395-4619-8427-d70ac5996df4	Geology9	20	2017-04-09 More
23915c54-a7c9-4196-bd4e-8c43461719c5	Geology6	20	2017-04-09 More
23b97bbb-7fe-4589-b35f-e0e600718635	CINCS Cruise "Hydrological" Data	80	2017-03-20 More
2f1d51c8-c652-48f4-a2c9-0adff7f3c544	Geology10	10	2017-04-09 More
374f981a-07f3-4eb0-ffff-ffff	ffff	25	2017-05-22 More

Image: Set filter to date from 1 March 2017

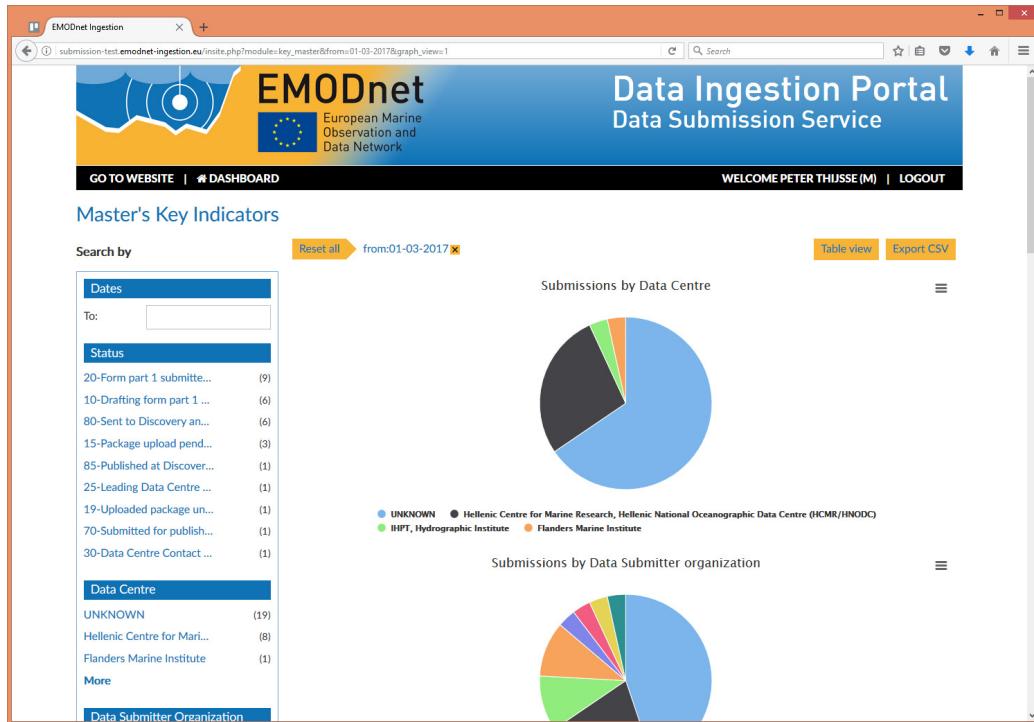
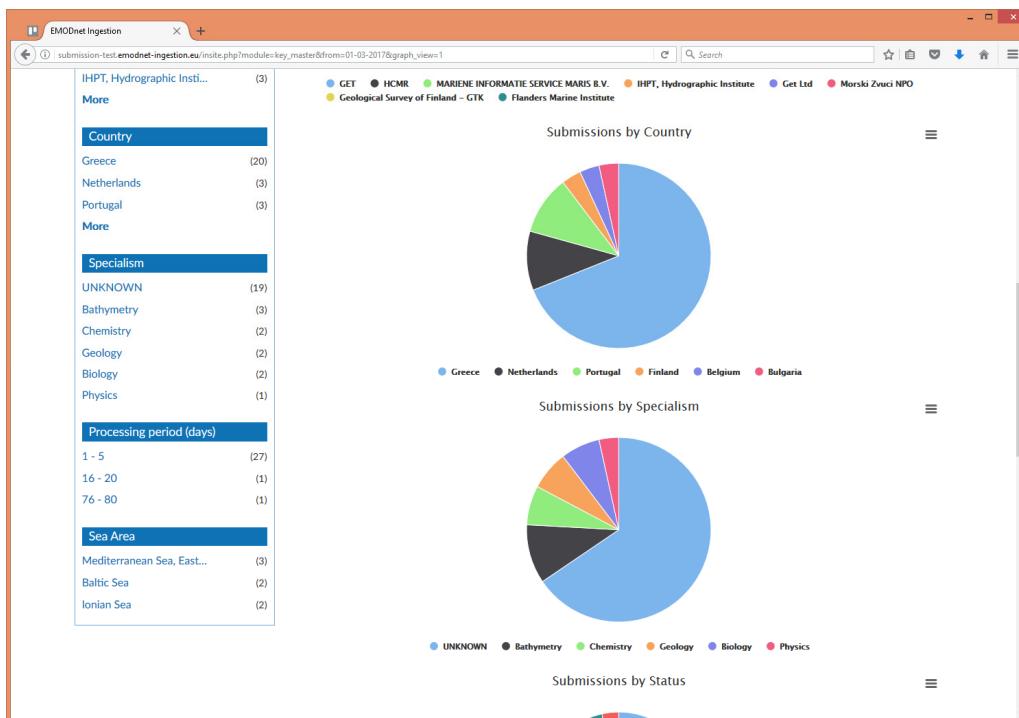


Image: Get a graphical view of all indicators, starting at the top with number of submissions per data center since 1 March 2017. Via filters on the left AND by clicking the slice the user can drill down further.

## EMODnet Ingestion and safe-keeping of marine data

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*Image: Scrolling down for the other indicators*

There is also a function to export to CSV files all indicator totals as visualised in the pie-charts.

These reports will be instrumental for preparing the key indicators for the quarterly progress reports in the coming years.

## 9. Feedback from users

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The feedback is arranged through the Help desk which is promoted at the home page of the EMODnet Data Ingestion portal and this provides means to give feedback by email and/or to ask to be called back by telephone.

So far only one feedback from users has been received. This is most probably due to the fact that the EMODnet portal has only been launched in February 2017 and that users are more looking around at the portal (see user statistics in chapter 8) than getting into action. As explained in Chapter 5 under WP4 it is planned to undertake promotion and outreach activities in the coming months by all consortium members approaching potential data providers as well as central promotion activities through events and otherwise. This should lead to more user engagement and feedback.

Date	Name	Organization	Type of user feedback ( <i>e.g. technical, case study etc</i> )	Response time to address user request
2017-03-22	BMM	BMM	Researcher wants to share several months of current meter data as used for his PhD. He wants to know whether he will be acknowledged in the portal for the data set.	One day later

## 10. Lessons learned

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There are no lessons learned yet as most activities have been focusing on the development of the portal, its services and preparatory activities for the coming promotion and outreach to potential data providers. This implicates that so far contacts with data providers and other users has been limited.

## 11. Objectives for next reporting period

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The following objectives will be followed-up in the next reporting period:

- **Submission service phase II**

Making the existing submission service technically ready for carrying the extra steps and fields needed for supporting phase II of the workflow from only publishing ‘as is’ to publishing as data resources integrated in national data centre systems, European infrastructures such as SeaDataNet and others, and EMODnet thematic portals. This is planned for end August 2017.

- **Optimisation submission service in practice**

The Submission service has been taken into operation and data centres are encouraged to practice with the test version in order to be ready and experienced before the expected wave of submissions is coming. This practicing will bring issues to light which can be improved in the Submission service for improved efficiency and streamlining. Reported issues will be considered by the Technical Working Group for optimisation. This process with data centres feedback will concentrate on the coming months; however later on also feedback from data submitters might be envisaged.

- **Launching Summary Service**

The Summary service for publishing completed phase I submissions and data packages ‘as is’ is ready in Beta version for testing. The service will be publicly launched at the EMODnet Ingestion portal once there is an initial number of fully completed submission forms. This is planned for end August 2017.

- **Developing and launching Data Wanted service**

The Data Wanted service will allow users seeking certain types of data to specify their needs. It will be matched with the Summary Records service to alert users of any possible match. It will also have a user interface to check data wanted requests. The format for the Data Wanted service will be extracted from the format of the Summary Records service in order to allow matching. A test version is planned for July 2017. However public launch will be synchronised with the lauch of the Summary Records service.

- **Implementing wider engagement of EMODnet data centres in practice**

All data centres from the EMODnet Thematic lots have been requested by their thematic coordinators to engage in the pathways for EMODnet Ingestion. This will facilitate assigning qualified data centres to submissions from all European countries and EMODnet themes. In the

coming period further implementation will be given by contacting individual data centres for discussing activities, registering in the DC Catalogue and giving instructions for practicing. So far this has already been done for the data centres within the EMODnet Ingestion consortium. This full network engagement will provide an important foundation for the EMODnet Ingestion service and all EMODnet Thematic networks will benefit from new incoming data sets which are relevant for their activities.

- **Optimising pathways by software tools**

One of the challenges will be to optimise the process of going from data sets with naming and formats as supplied by Data Submitters to common formats for metadata and data and use of controlled vocabularies as managed by the Ingestion Data Centres. For this purpose it is considered to compile a number of conversion tools that can be made available as online services, first to Data Centres and later possibly also to Data Submitters. The online services might be provided as cloud services. The feasibility of planning and compiling a pool of online services for streamlining processing of ingested data sets will be analysed till end 2017.

- **Launching Sensor Web Enablement (SWE) demonstrator**

The SWE profiles for platforms and sensors will be finalised end June 2017, while the SWE demonstrator of SOS client service will be completed and launched for SOS instances as operated by BODC, OGS and IFREMER and then integrated in the EMODnet Physics portal as well as advertised at EMODnet Ingestion portal. This is planned for end October 2017. Thereafter the demonstrator is open for inserting additional platforms and sensors from other operators.

- **Outreach following inventory of potential data sources and providers**

Each data centre consortium member will use the inventory to undertake actions towards the identified data providers. The ultimate goal is to achieve willingness and cooperation with the identified potential data providers for submitting selected data sets to the EMODnet Ingestion portal. Consortium members will prepare themselves well for representing EMODnet and EMODnet Ingestion as they will function as EMODnet ambassadors. Once well trained, consortium members will approach potential data providers and explore options for achieving the Ingestion goals. Data centres will maintain a progress report of their activities and achievements, both negative and positive, that will be regularly shared within the consortium. This is an ongoing activity for the coming 2 years.

- **Progressing use cases, leading to data submissions and possible ‘pipelines’**

The use case ‘renewable energy development data in the UK’ will be followed up by elaborating manually by BODC and BGS a selection of Marine Data Exchange (MDE) datasets through their EMODnet pathways. Furthermore BODC together with MARIS will explore establishing a

potential metadata exchange from the MDE towards EMODnet Ingestion by machine-to-machine service as part of Phase I. The target deadline for both activities is end 2017.

The use case ‘offshore wind park data in the Netherlands’ will be followed up by further populating of monitoring data in the OpenEarth system of Deltares and developing exchange mechanisms from OpenEarth towards EurOBIS and SeaDataNet CDI services. This will also require mapping of AQUO vocabularies towards SeaDataNet vocabularies. The target deadline is end 2017.

- **Finalising additional and updating existing promotion media**

Promotion and outreach activities are supported by a variety of promotion media. Project presentations will be kept up-to-date. A short video is planned for end October 2017. A first leaflet is planned for mid July 2017. EMODnet Ingestion will be presented at several external events & conferences. The portal and social networks will be kept up-to-date. Consortium members will undertake personal contacts with potential data providers and might organise local workshops with multiple stakeholders from their countries. The number of EMODnet portals carrying promotional information about EMODnet Ingestion will be expanded with EMODnet Geology and Chemistry.

- **Scoring results in data submissions via Key Indicators**

The ultimate goal of all activities is to score results by realising and completing a multitude of data submissions. These results as well as the duration of the processing cycles will be reported through the key indicators as part of the quarterly progress reports and the next 2nd Annual Interim Report.

## **Annex 1: Submission form documentation**

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# EMODnet Data Ingestion and safe-keeping of marine data

## Submission Form - Workflow procedure and Metadata Elements

Version: V1.1.0

Date: 5 February 2017

Prepared by: HCMR, MARIS and GET (subcontractor of HCMR) with input of consortium partners

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## 1 Introduction

This document sets out the approach followed during the design of the Data Submission service as part of the EMODnet Data Ingestion portal and it documents the set of metadata elements that has been selected for the data submission form.

## 2 Considerations

### 2.1 Target user group(s)

The primary focus of the EMODnet Data Submission service is on **data providers and their datasets that are not yet handled and part of the mainstream processes** of the data repositories (NODCs, Hydrographic Offices, Geological Services, Biological institutes, etc) that are maintaining the European infrastructures (SeaDataNet, EurOBIS, EGDI, ICES, COGEA) and from there driving the EMODnet Thematic portals (Chemistry, Geology, Bathymetry, Biology, Physical Oceanography and Human Activities).

Potential data providers are marine data holders that are not yet routinely submitting data sets to national data repositories and they must be encouraged and supported to submit their data packages for open access and use in national repositories and EMODnet. It implicates that these providers are not (yet) used to practices and standards as used by the international marine data management community.

### 2.2 Target datasets

The focus is on **datasets** that are relevant for the EMODnet Thematic portals. In any case the focus is on **datasets** including associated documentation, if available, and not **on stand-alone reports**. These datasets should concern observations and/or analysed samples for chemistry/ geology/ bathymetry/ biology/ physics/ human activities.

### 2.3 Data packages vs datasets

Identified data providers will be encouraged to submit data packages which rather are **collections of datasets**, for example resulting from a project, cruise, monitoring programme etc., and not individual datasets.

## 3 Requirements

A key to success is to identify the right balance between metadata quality, completeness and the effort required by all stakeholders to gather and publish all the information needed. The following requirements were identified:

### 1. Minimize the effort required from the data provider

It is required that the threshold for submission must be **relatively low** in order to be **successful**, especially taking into account that data providers will act on a voluntary basis. It should be made easy for potential data providers to understand and to provide input for the data submission metadata. A commonly agreed principle is that a lot of metadata elements needed, might lead to user frustration and low metadata quality.

### 2. Utilize data centres' know - how

Data centres are responsible for data curation and carry a lot of experience and expertise. Data curation involves and implies examination and evaluation of the datasets submitted. In this context, metadata elements, otherwise difficult for the target user group to identify, are easier to be documented by the data centre, since it will be actually part of the data curation procedure.

### 3. Quality and Automation

It can actually take significant human efforts and time for (post) documenting of incoming data sets with the aim to make these part of data repositories and subsequent sharing with the EMODnet Data portals.

Therefore, metadata elements which can be automatically generated by the system or than can be offered with default values or in pre-completed form were identified.

#### 4. Structured Information

Adoption of controlled vocabularies and limitation of the free text fields to the maximum extent possible is required in order to capture structured information at its source. For that purpose the controlled vocabularies and European directories, both developed and maintained as part of SeaDataNet ([www.seadatanet.org](http://www.seadatanet.org)) have been adopted.

#### 5. Standards compliancy

A modern system should take into account and benefit from standardization practices. In this context, the ISO 19115-2 standards and INSPIRE Metadata Regulation where adopted as basis for the submission metadatabase, also including elements for the tracking service.

#### 6. Existing good practices

Other ingestion services such as **NCEI S2N** (<https://www.nodc.noaa.gov/submit/>) and the **Marine Data Exchange** of Crowne Estate (UK) (<http://www.marinedataexchange.co.uk/>) provide good examples and both also make use of the ISO 19115-2 schema.

The Crowne Estate ingestion system conforms to the MEDIN discovery metadata standard v2.3.7 which to a large extent makes use of SeaDataNet Controlled Vocabularies.

The NCEI S2N ingestion makes use of NOAA Controlled Vocabularies and lists (e.g. for organisations, roles, projects, ship/platform, sea area/region, parameter/variable, units, observation category, sampling instrument). The NCEI S2N form gives a nice solution how to make use of controlled lists in combination with free entries and moreover how to enter and save multiple entries.

However, the context for both example services is somewhat different than in the case of EMODnet Ingestion. NCEI S2N is set up for researchers that contractually have to report and submit their data sets to NCEI, while the Marine Data Exchange is set up for consultants and researchers that also somehow are obliged by contract to submit their data sets to Crowne Estate. This implicates that both NCEI and Crowne Estate can set higher requirements for completing the metadata submission forms as well as for the included data packages.

## 4 Approach

Taking all requirements and considerations into account, the following approach has been adopted for the EMODnet Data Submission service:

1. Make use of ISO 19115-2 and supported by SeaDataNet controlled vocabularies, EDMO, CSR and EDMERP where possible and relevant;
2. Adopt the approach of NCEI S2N for choosing from the controlled lists, adding new terms and entering multiple terms;
3. Make a set-up that the submission form is completed in two steps:
  - a. **data submitters** are asked to complete and submit a subset of the form, including uploading the actual data package consisting of datasets and documentation
  - b. the **data centre** put in charge for further processing will analyze the submission and will get into contact with the data provider for further details. Thereafter the data repository in charge must be able to complete the submission form, using the further insights gathered, and where possible, to work up the received data sets.
  - c. The terms used in the submission form must be user friendly and not the technical terms as used in ISO and INSPIRE documentation. Moreover, simple but effective help texts must be added so that submitters can understand easily what to do.

- d. Data submitters should learn not to upload too large data collections per data package because of upload performances, but also to restrict having too many different data sets in a data package. Submitters are advised to divide data packages at least by theme and possibly by observation methods in order to get smaller and more harmonised data packages. This implicates that submitters can build series of data packages for specific projects which will be beneficial for the further processing and uptake in data repositories.

## 5 Submission Workflow

The need for a simple submission mechanism with a rather straightforward online form for specifying relevant metadata to describe the data package, is identified as a success factor for the adoption of the system services to be developed. A typical workflow consists of continuous steps, as described below:

**Step1 - Authentication:** The data submitter MUST be authenticated via the MarinID service in order to be able to use the Submission service. In this context, the data submitter will be asked if he/she already owns a valid MarinID. In case he/she owns one, he/she will be prompted to enter his/her credentials, gaining access to the Submission service. In case he/she does not own a valid MarinID, he/she will be redirected accordingly to obtain one. The process is automated and the data submitter will get his/her credentials immediately 24/24 and 7/7. The usage of MarinID is very important, in order to have “globally” identified users and server interoperability between the marine systems.

**Step 2 - Authorization:** After successfully authenticating into the system, user permissions will be checked in order to check the allowed and/or mandatory action the data submitter may perform against the system. Note: the MarinID system is also used for giving access to the EMODnet data centres that will be in charge of processing submitted data packages and completing the submission forms.

**Step 3 - Metadata entry:** A metadata form will appear for data submitters selecting new submission or edit previous submissions<sup>1</sup>. The data submitter will have its account to oversee all his/her data submission forms with their status. The metadata form can be seen as an envelope around the actual data package, allowing the documentation of the data package. The selected metadata elements are described in detail in Section 6. Three (3) categories are distinguished, namely: (a) mandatory/conditional, (b) optional, (c) system generated.

Metadata elements are grouped in conceptually similar units, organized in tabs/sections etc. Each metadata unit contains both mandatory/conditional and optional elements which fall under the same conceptual category. Visual highlights allow the distinction between mandatory and optional fields. Validation against the corresponding rules established per field is performed. The User Interface has been designed with usability, providing hints about the validation rules and useful error messages for every field completed by the user.

The data submitter will only have to complete a subset of the submission form, part 1, while the assigned data centre will later complete the form part 2, probably in communication with the data submitter.

A general validation against all the rules established will also take place upon the form finalization. Temporary saving of the information entered will be allowed, allowing the user to return at a later stage for completing information missing etc. Furthermore, the “back-end” of the form submission mechanism will check the submitted information, once more, to protect the system from being compromised (sql injection etc.)

**Step 4 – Data submission:** After successfully filling the required metadata fields, the data submitter will be able to upload data packages as compressed zip file.

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<sup>1</sup>Re-submission is not allowed. Data submitters are able to perform a temporary save, in order to complete or review the submission form at a later stage. When sure, data submitters will perform a final submission and, after an automatic validation check, data packages and forms will be stored with another status, ready for further processing by the data repository that will be put in charge per specific data package.

Finalizing the data submitter part of the submission form will not take place:

- until the corresponding data package is also uploaded
- unless user agrees with open data policy mandated by the project guidelines<sup>2</sup>

**Step 5 – Confirmation:** Data packages will be uploaded at the EMODnet Data Ingestion cloud infrastructure, where it will be stored as secure digital archive. To safeguard security of the ingestion system, proper automated anti-virus and when necessary, manual review workflow has been implemented. The manual review might avoid improper or malevolent data submission not detectable otherwise. A unique ticket number (UUID) for each submission is generated by the system allowing further monitoring and managing of the submission.

**Following steps by data centre in communication with the data submitter:**

**Step 6 – Check by EMODnet Ingestion portal managers:** The portal managers will be alerted by email of the new submission and will check its content to decide which data centre is the best suited for further processing. This decision is made using the country origin of the data submitter and data discipline. In case of multiple disciplines a leading data centre will be selected. The portal managers also might decide to reject the submission which will be underpinned with a motivation. In that case the data submitter is alerted by email and is invited to amend the submission form and related dataset package for a new confirmation (see step 5). This loop can be repeated. Once all is ok then the data centre assignment process of step 6 is continued.

**Step 7 – Assignment of data centre:** The received data submission form and data package will be routed to a data centre, assigned by the EMODnet Ingestion portal managers. An email alert will be send to all contactpersons that are registered in the Submission service for the given data centre. One of the contacts then will assign the specific data centre contactperson that will manage the further processing. The assigned data centre contactperson will be in charge for analysing and processing the data package. This will happen in 2 phases:

- Phase I: from data submission to publishing of the submitted datasets package ‘as is’;
- Phase II: further elaboration of the datasets package and integration (of subsets) in national, European and EMODnet thematic portals.

**Step 8 – Phase I processing by data centre:** The data centre contactperson will download and check the datasets package (datasets collection and associated documentation) and use this to review the submission form part 1 and to complete the submission form part 2. The data centre will contact the data submitter in case of questions. Information about processing actions will be maintained by the data centre in a phase I log in the submission form, so that all is logged and that the data submitter can follow it as well. The data centre will also undertake efforts to replace free texts (‘orphans’), entered by the data submitter, with controlled terms from the SeaDataNet vocabularies and directories. In case these are not yet available, data centre will propose new entries as appropriate. The data centre also might decide to reject the submission which will be underpinned with a motivation. In that case the data submitter is alerted by email and is invited to amend the submission form and related dataset package for a new confirmation (see step 5). This loop can be repeated. Once all is ok then the processing by the data centre as part of step 8 is continued.

**Step 9 – Phase I requesting approval for publishing:** The data centre will validate the submission form checking completeness of obligatory fields for both part 1 and part 2 and will follow-up any issues. The data centre will then request approval of the data submitter for publishing the complete submission form (part 1 and 2) and the original data package. The data submitter will be alerted by email and has 2 weeks for response; otherwise approval is given automatically. The data submitter can request the data centre for an amendment which is entered in the submission log for the data centre to undertake action. The data centre is alerted by email, can

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<sup>2</sup>Open Data Policy is adopted. E.g. licensing schemas, commonly used Open Data licenses (Creative commons, Open Data Commons, Directive 96/9/EC on the ‘legal protection of databases’ (Eurlex))

apply the amendment in the submission form and resubmit the request for approval of publishing. This loop can be repeated. Both the data submitter and data centre can retrieve the original part 1 in case of discussion. Once the agreement is there, the submission form and dataset package are released for publishing.

**Step 10 – Phase I final check for publishing:** The portal managers will be alerted by email of the release for publishing and will undertake a final review. If ok, a confirmation will be entered, that will trigger the exchange of submission form information by means of XML from the Ingestion Submission service to the Ingestion Discovery & Access Service.

**Step 11 – Phase I publishing and completion:** After successful ingestion of the XML information into the Discovery and Access service, then the submission form and associated datasets package (datasets collection and documentation) ‘as is’ will be publicly available for searching and downloading in the online Discovery & Access Service. Once the submission is public, the portal managers will complete the tracking info in the Submission service with an optional DOI (via DataCite) in case of academic publishing and the publication link

**Following steps by data centre in communication with the data submitter for completing Phase II:**

Phase II deals with further elaboration by the assigned data centre of the datasets package and integration (of subsets) in national, European and EMODnet thematic portals. This will be done possibly in further contact with Data Submitter.

**Step 12 – Phase II data centre processing of datasets:** The assigned data centre will further process and curate the submission at dataset level and will work up (subsets of) the received datasets to the level of inclusion in the data management system of the data centre, including detailed metadata. For this purpose the data centre might have extra communication with the data submitter and will maintain also an extra log in the Submission service, documenting processing steps. The log will again be accessible for data submitter, data centre, and Ingestion portal managers from the start of processing. Finalised datasets (possibly parts of original data package) will be included in the data management system of the data centre and also published at the data centre portals and taken up for long term stewardship.

**Step 13 – Phase II European and EMODnet publishing:** The data centre will populate the finalised curated datasets and related metadata into the appropriate European infrastructures (SeaDataNet, EurOBIS, EGDI, , ICES, COGEA). The finalized datasets and related metadata will be pushed forward from the European infrastructures towards inclusion and publishing in EMODnet thematic portals. Once done, the data centre will complement the data submission form with details of the national, European and EMODnet URLs. The Ingestion porrtal managers will be alerted and include these links also in the Public Discovery and Access service.

Note: Phase II is under development in the Submission service.

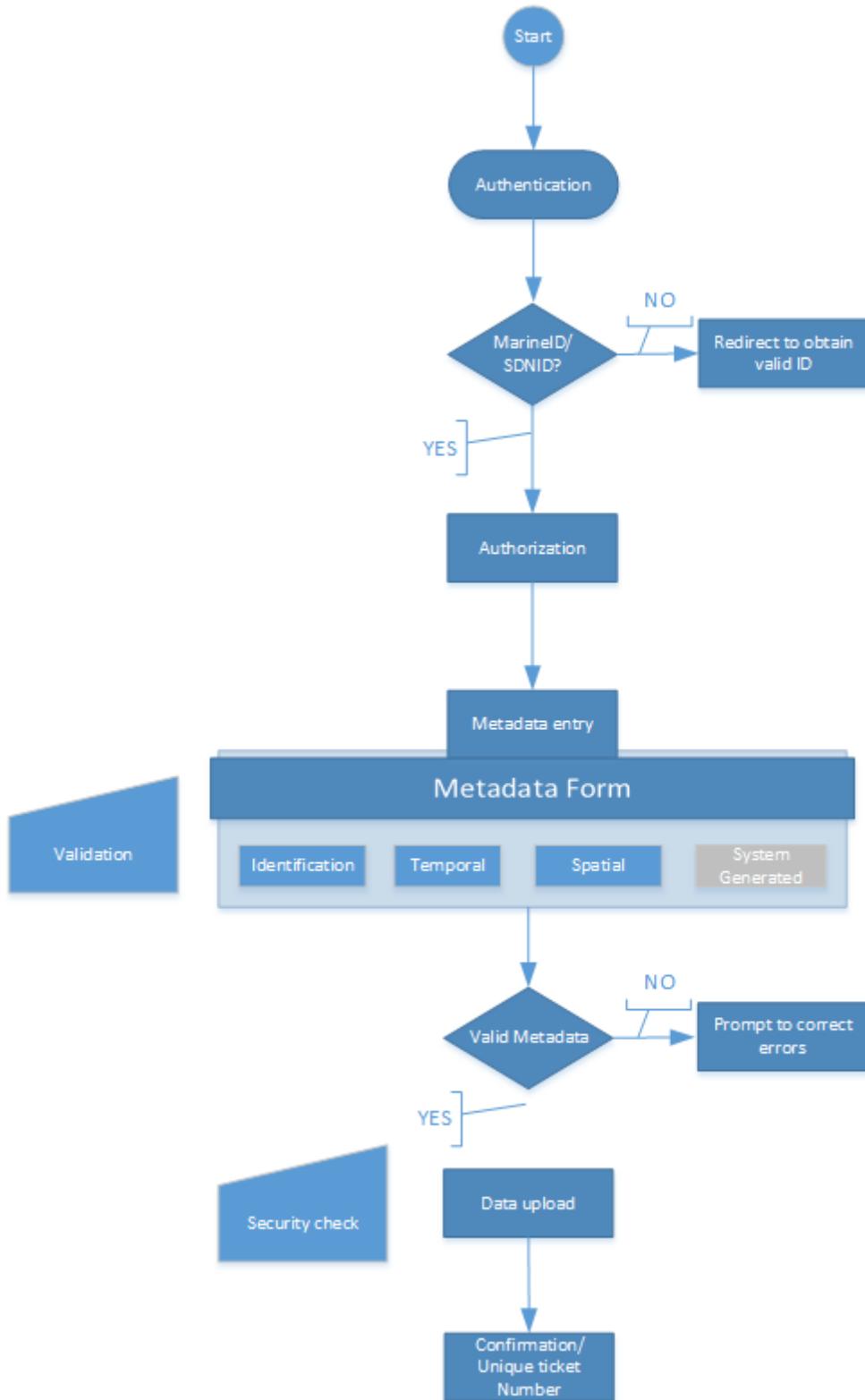


Figure 1: Simplified Submission Workflow for the part 1 of the submission form that is completed by the data submitter

## 6 Metadata Elements

The metadata table detailed below is the result of an intensive revision process between project partners.

1. Metadata elements are grouped in conceptual units
2. Some metadata elements are ‘merged’ in the table in order to appear similar to the way they will appear in the submission form
3. Metadata elements are **split over actors** based on how they are completed:
  - a. Data Submitter (DS), these elements together are part 1 of the submission form (excl AUTO and AUTO Default elements)
  - b. Data Centre (DC), these elements together are part 2 of the submission form (excl AUTO and AUTO Default elements)
  - c. Automatic (AUTO),
  - d. Default values (AUTO Default)
4. The naming schema is **distinguished** on:
  - a. ISO/INSPIRE used for database
  - b. Public naming as seen on Submission Form
5. Some metadata elements were **added** in order to facilitate the publication workflow:
  - a. Date of metadata latest revision
  - b. URL where the dataset can be downloaded
  - c. Instrument type
  - d. Instrument name
  - e. Publication Url
  - f. Publication Date
  - g. DOI
6. Missing are some extra metadata elements which will be added because of Phase II which is under development.

Metadata Element ISO/INSPIRE	ISO/TS 19139 path	Metadata Element Submission Form	Description	Hint	Filled in by	Mandatory	Multiplicity	Domain
<b>Organizations</b>								
Metadata point of contact	contact	Contact person for this dataset submission form <ul style="list-style-type: none"><li>• Name</li><li>• Surname</li><li>• Email</li><li>• Country</li><li>• Organization</li></ul>	Organization/person responsible for the creation and maintenance of the metadata. This refers to the metadata record created during submission and not to the responsible party for the resource, since they will not necessarily be the same  It will be automatically filled, using the user's credentials used for authentication.	Information shown is based on your MarineID profile. In case some information is outdated and/or incomplete, please use the "Edit Profile" function on the top right of the screen	DS	M	1	<ul style="list-style-type: none"><li>• Name: Free text</li><li>• Surname: Free text</li><li>• Email: Free text</li><li>• Country: ISO 3166</li><li>• Organization: EDMO or free text</li></ul>
Responsible party and Role	identificationInfo[1]/*/pointOfContact	Organizations responsible for the dataset <ul style="list-style-type: none"><li>• Country</li><li>• Organization</li><li>• Email of organization</li><li>• Role of organization</li></ul>	Description of the organization responsible for the establishment, management, maintenance or distribution of the resource. Provide identification of, and means of communication with, person(s) and organization(s) associated with the resource(s)  Role of the responsible party.  For each role related to the provided, an organization should be also be provided. The user will be prompted to use the most applicable role	Provide the organisations that are responsible for the collection and the management of the dataset. Fill in one organisation & corresponding role at the time.	DS	M	1..*	<ul style="list-style-type: none"><li>• Country: ISO 3166</li><li>• Organization: EDMO or free text</li><li>• Email of organization: free text</li><li>• Role of organization:<ul style="list-style-type: none"><li>- Dataset Holding Organisation</li><li>- Originator of Dataset</li></ul></li></ul>
Metadata language	language	Language used for completing form	Language used for completing form  Is shown on the DS submission screen so that the DS is made aware	AUTO Default: English	M	1	Codelist (See ISO/TS 19139) based on alpha-3 codes of ISO 639-2	
<b>Dataset Identification</b>								
Resource title	identificationInfo[1]/*/citation/*/title	Title of dataset	A characteristic, and often unique, name by which the resource is known. The Resource Title has to be concise and to the point. It should not contain unexplained acronyms or abbreviations. It is recommended a maximum length of 250 characters	Enter a concise title which characterises well the subject of the dataset.  A maximum of length of 250 characters is recommended	DS	M	1	Free text

			and keeping the similarity with the original title of the resource, in the sense of the 'official naming'  Encourage submitters to provide a meaningful title					
Resource abstract	identificationInfo[1]/*/abstract	<b>Narrative summary of dataset</b>	A brief narrative summary of the content of the resource. The abstract provides a clear and concise statement that enables the reader to understand the content of the data.  The resource abstract is a succinct description that can include: <ul style="list-style-type: none"><li>- A brief summary with the most important details that summarise the dataset submitted</li><li>- Objectives of data collection</li><li>- Coverage: linguistic transcriptions of the extent or location in addition to the bounding box</li><li>- Main attributes</li><li>- Data sources</li><li>- Legal references</li><li>- Importance of the work</li></ul> It is advised to summarize the most important details in the first sentence or first 100 characters.  Encourage submitters to provide a meaningful summary.	Provide a summary of the content of the data package. The summary may include: <ul style="list-style-type: none"><li>- The most important details that summarise the dataset submitted</li><li>- Objectives of data collection</li><li>- Area of data collection</li><li>- Main attributes</li><li>- Data sources</li><li>- Legal references</li><li>- Importance of the work</li></ul>	DS	M	1	Free text
Resource Format	/distributionInfo/MD_Distribution/*/distributionFormat	<b>Dataset format</b>	Listing of (suggested) common and interoperable formats  Use mechanism of S2N to search and include L24 terms or free text	Choose one or more formats and/or enter new one(s) if the applicable format is not listed.	DS	M	1..*	UK MEDIN formats (M01) Or Free text
Resource language	identificationInfo[1]/*/language	<b>Language used in dataset</b>	ISO 19115 mandates the dataset language, even if the resource does not include any textual information. The ISO 19115 Dataset language is defaulted to the Metadata language (see below)	Element <b>not shown</b> on Submission Form  Shown on data centre and publication form	DC Default: English	M	1	<b>Default to English, also use English even if language not applicable</b>  Codelist (See ISO/TS 19139) based on alpha-3 codes of ISO 639-2
Lineage	dataQualityInfo/*/lineage/*/statement	<b>Summary of data quality processing</b>	General explanation of the data producer's knowledge about the lineage of a dataset. A statement on process history and/or overall quality of the spatial data set. Where appropriate it may include a statement whether the data set has been validated or quality assured, whether it is the official version (if multiple versions exist), and whether it has legal validity.  Mandatory for INSPIRE.	Provide information regarding the processing history and an overall quality statement of the dataset. In the latter case, please be sure to provide accompanying documentation below	DS	M	1	Free text
Documentation	/distributionInfo/MD_Distribution/*/distributionFormat/formatSpecificationCitation/*	<b>Relevant supporting documentation -Document</b>	Supporting documentation. In cases that no common (suggested) data formats are adopted, data providers will be asked to include also documentation about their formats and coding in the data packages  Data submitter must be informed well what might be included and must be requested to include the documents in the Data Package that will be submitted!	Fill in the supporting documentation and do not forget to include the documents in the submission package. The documents will be very helpful for the further handling of your dataset by the data repository in charge.	DS	O	1..*	Free text
Limitations on public access	identificationInfo[1]/*/resourceConstraints/*/accessConstraints  identificationInfo[1]/*/resourceConstraints/*/otherConstraints	<b>Public access</b>	Information on the limitations and the reasons for them.  If there are no limitations on public access, use the free text available in other Constraints to enter "No Limitations" in the language used for the metadata. For EMODnet Ingestion this is a prerequisite.	All datasets submitted to the EMODnet Ingestion portal will be made publicly available	AUTO Default: No limitations	M	1	B.5.24 of ISO19115
Conditions applying to access and use	identificationInfo[1]/*/resourceConstraints/*/useLimitation	<b>License for use</b>	Conditions for access and use.	Choose an Open License or enter a License which should be compatible with open data definition	DS	M	1	An identifiable collection of open data licenses: <ul style="list-style-type: none"><li>-Attribution License (ODC-BY)</li><li>-CCO 1.0 Universal – public domain dedication (CCO 1.0)</li><li>-Creative Commons Attribution 4.0 International (CC-BY 4.0)</li></ul>

								- Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) -Open Database License (ODC-ODbL) -- Public Domain Dedication and License (PDDL)
<b>Resource Type</b>	hierarchyLevel	Type	Classification of the resource based on its scope - dataset: is an identifiable data that can be accessed separately. A dataset can be a part of a whole (series) or a segregate resource - series: is a collection of resources or related datasets that share the same product specification  Shown on screen so that submitters are reminded	The submitted data package should comprise an identifiable dataset	AUTO Default: Dataset	M	1	CodeList (Annex B.5.25 of ISO 19115)  Default: Dataset
<b>Resource locator</b>	distributionInfo/*/ transferOptions/*/ /onLine/*/linkage	<b>Dataset URL</b>	Points users to the location (URL) where the data can be downloaded, or to where additional information about the resource may be provided	URL pointing at submission service cloud storage	DC	M	1	URL (IETF RFC1738 and IETF RFC 2056) Automatically created by renaming the submitted data package with UUID of the submission
<b>Resource code</b>	identificationInfo[ 1]/*/citation/*/id entifier	<b>Dataset identifiers</b>	Value uniquely identifying the resource. Code used for external references, product code for users  Not mentioned on data submitter form, only on data repository form and later on public pages	Element <b>not shown</b> on Submission Form for DS  Shown on data centre and publication form	DC AUTO: UUID of submission form	M	1..*	B.2.7.3 of ISO 19115
<b>Metadata date</b>	dateStamp	<b>Date of metadata creation</b>	The date which specifies when the metadata record was created or updated	The field is automatically populated with the date of submission	AUTO Default: date of final form submission	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)
<b>Metadata date</b>	dateStamp	<b>Date of metadata latest revision</b>	The date which specifies when the metadata record was updated by the data centre	The field is automatically populated with the date of last revision by the data centre	DC AUTO: date of form edit by DC	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)

## Data Types

<b>Mission</b>	MI_Metadata/*/ MI_AcquisitionInf ormation/*/MI_O peration/descripti on	<b>Project / Programme</b>	Identifiable activity which provided the data  Use mechanism of S2N to search and include EDMERP title (and code)  Inform data submitter to submit one or more Data Package(s) for data from one project or programme and not for multiple project in one go	Please provide the name of the project / programme in which the dataset was collected  Choose <b>one</b> title from the list or enter a new one if the applicable project/programme is not listed.	DS	O	1	EDMERP (European Directory of Marine Environmental Research Projects)  OR  Free text
<b>Cruise</b>	MI_Metadata/*/ MI_AcquisitionInf ormation/*/MI_O peration/*/descri ption  MI_Metadata/*/ MI_AcquisitionInf ormation/*/MI_O peration/*/citat i on	<b>Cruise Summary Report</b>	Cruise details  Use mechanism of S2N to search and include CSR titles (and codes)	Element <b>not shown</b> on Submission Form  Shown on data centre and publication form  Hint for DC: Choose one or more Cruises from the CSR list and/or enter new ones.	DC	O	1..*	Cruise Summary Report Inventory (CSR)  OR  Free text
<b>Process Methodology</b>	LI_ProcessStep/*/ LE_ProcessStep/*/ LE_Processing/*/p rocedureDescripti on	<b>Summary of processing methodology</b>	Comprehensive information about the procedure by which the algorithm was applied to derive geographic data from the raw instrument measurements, such as datasets, software used, and the processing environment	Provide information about the procedure used to derive observation data from the instrument measurements, including possible software used, and applied processing steps	DS	O	1	Free text
<b>Platform Type</b>	MI_Metadata/*/ MI_AcquisitionInf ormation/*/MI_O peration/*/ MI_Platform/*/ citation	<b>Platform type</b>	Designation of the platform type used to acquire the dataset  Use mechanism of S2N to search and include L06 names (and codes)	Element <b>not shown</b> on Submission Form  Shown on data centre and publication form  Hint for DC: Choose one or more platform types from the list; complete type and name in combinations	DC	O	1..*	SeaVox Platform Categories (L06)
<b>Platform Name</b>	MI_Metadata/*/ MI_AcquisitionInf	<b>Platform name</b>	Designation of the platform used to acquire the dataset	Element <b>not shown</b> on Submission Form	DC	O	1..*	ICES Platform Codes OR

	ormation/*/MI_Operation/*/ MI_Platform/*/id entifier		Use mechanism of S2N to search and include C17platform names (and codes!)  Not mentioned on data submitter form, only on data repository form and later on public pages	Shown on data centre and publication form  Hint for DC: Choose one or more platform names from the list or enter new ones; complete type and name in combinations				free text
Instrument type	MI_Metadata/*/ MI_AquisitionInf ormation/*/MI_In strument/identifie r/type	Instrument type	Use mechanism of S2N to search and include L05 terms (and codes)  Complete in combinations of parameters and instrument  Not mentioned on data submitter form, only on data repository form and later on public pages	Choose one or more instrument types from the list; complete type and name in combinations	DC	O	1..*	SeaDataNet Device Categories (L05)
Instrument	MI_Metadata/*/ MI_AquisitionInf ormation/*/MI_In strument/identifie r	Instrument name	Use mechanism of S2N to search and include L22 terms (and codes)	Choose one or more instrument names from the list; complete type and name in combinations	DC	O	1..*	SeaVoX Device Catalogue
Parameter Variables	identificationInfo[ 1]/*/descriptiveKe ywords/*/keywor d	Parameter / Variable	The physical, biological, geological, geophysical or chemical property being measured or calculated, e.g., water temperature. Could also relate to human activities  For each variable, units, category and instrument shall be provided  Use mechanism of S2N to search and include P02 terms (and codes!)	Choose the applicable discovery parameters from the list	DC	M	1..*	SeaDataNet P02 – Parameter Discovery Vocabulary
Marine organism	identificationInfo[ 1]/*/descriptiveKe ywords/*/keywor d	Marine organism	Marine organism	Choose the appropriate taxonomic group by entering free text after looking up in the WoRMS register	DC	O	1..*	Lookup value at WORMS <a href="http://www.marinespecies.org/">http://www.marinespecies.org/</a>
Ocean discovery parameters keyword	identificationInfo[ 1]/*/descriptiveKe ywords/*/keywor d	Observation type	Ocean parameters processed in the current dataset. Only applicable for phenomenons values, not applicable for coordinates (e.g. lat, lon), for values metadata (e.g. errors, quality flags) or technical parameters (e.g. analysis residual, battery charge, ...).  Use mechanism of S2N to search and include P03 terms (and codes)	Choose the applicable parameter groups from the list	DS	M	1..*	SeaDataNet Agreed Parameter Groups (P03)
Ocean discovery originating controlled vocabulary	identificationInfo[ 1]/*/descriptiveKe ywords/*/thesaur usName	Ocean discovery originating controlled vocabulary	Name of the formally registered thesaurus. Will default to "SeaDataNet Agreed Parameter Groups, v22, revision, 2015-02-04"	Element <b>not shown</b> on Submission Form, data centre and publication form Only in XML and database	AUTO: Default: SeaDataNet Agreed Parameter Groups	M	1	"SeaDataNet SeaDataNet Agreed Parameter Groups, v22, revision, 2015-02-04"
Topic category	identificationInfo[ 1]/*/topicCategor y	Topic category	A high-level classification scheme to assist in the grouping and topic based search of available spatial data resources for compliance with INSPIRE and defaults to "Oceans" for datasets falling under "Oceanographic geographical features" theme	Element <b>not shown</b> on Submission Form, data centre and publication form  Only in XML and database	AUTO Default: Oceans	M	1	Enumeration (B.5.27 of ISO 19115)
Keyword Value - INSPIRE	identificationInfo[ 1]/*/descriptiveKe ywords/*/keywor d	Keyword Value -INSPIRE	INSPIRE Data theme. Defaults to "Oceanographic geographical features"	Element <b>not shown</b> on Submission Form, data centre and publication form  Only in XML and database	AUTO: Default: Oceanographic geographical features	M	1	INSPIRE Data themes GEMET - INSPIRE themes, version 1.0, publication, 2008-06-01
Originating controlled vocabulary INSPIRE -	identificationInfo[ 1]/*/descriptiveKe ywords/*/thesaur usName	Originating controlled vocabulary - INSPIRE	Name of the formally registered thesaurus. Defaults to "GEMET - INSPIRE themes, version 1.0, publication, 2008-06-01" for INSPIRE data themes	Element <b>not shown</b> on Submission Form, data centre and publication form  Only in XML and database	AUTO: Default: GEMET - INSPIRE themes, version 1.0, publication, 2008- 06-01	M	1	Defaults to "GEMET - INSPIRE themes, version 1.0, publication, 2008-06-01" for INSPIRE data themes

## Locations & Dates

<b>Geographic bounding box</b>	identificationInfo[1]/*/extent/*/geo graphicElement/* /westBoundLongit ude identificationInfo[1]/*/extent/*/geo graphicElement/* /eastBoundLongit ude identificationInfo[1]/*/extent/*/geo graphicElement/* /southBoundLatit ude identificationInfo[1]/*/extent/*/geo graphicElement/* /northBoundLatitu de	<b>Geographic Bounding Box</b> <ul style="list-style-type: none"> <li>• North</li> <li>• South</li> <li>• West</li> <li>• East</li> </ul>	Extent of the resource in the geographic space, given as a bounding box. The coordinates of the bounding box are expressed in any geodetic coordinate reference system with a Greenwich PrimeMeridian in decimal degrees with at least 3 decimal digits	Draw a rectangle on the map to indicate the area covered by the dataset	DS	M	1	-180.00 ≤ westBoundLongitude ≤ 180.00 -180.00 ≤ eastBoundLongitude ≤ 180.00 -90.00 ≤ southBoundingLatitude ≤ 90.00 -90.00 ≤ northBoundingLatitude ≤ 90.00
<b>Coordinate reference system</b>	referenceSystemInfo	<b>Coordinate Reference System</b>	Description of the coordinate reference system(s) used in dataset. Highly recommended to consistent across a dataset prior to submission.  Show on screen so that submitters are reminded And EPSG:4258 added on the backend	Coordinate reference system used in dataset	AUTO Default: EPSG:4326 (WGS84) EPSG:4258 added on the backend	M	1..*	EPSG codes <a href="http://www.opengis.net/def/crs/EPSC/0/4258">http://www.opengis.net/def/crs/EPSC/0/4258</a>  Default to EPSG:4326 (WGS84) And EPSG:4258 added on the backend
<b>Sea areas keyword</b>	identificationInfo[1]/*/descriptiveKeywords/*/keyword	<b>Sea area</b>	Sea areas covered by the dataset  Use mechanism of S2N to search and include C16 terms (and codes)	Choose sea areas covered by the dataset from the list	DS	O	1..*	SeaVoX salt and fresh water body gazetteer <a href="http://vocab.nerc.ac.uk/collection/C19/current/">http://vocab.nerc.ac.uk/collection/C19/current/</a>
<b>Sea areas originating controlled vocabulary</b>	identificationInfo[1]/*/descriptiveKeywords/*/thesaurusName	<b>Sea areas originating controlled vocabulary</b>	Name of the formally registered thesaurus. Will default to "SeaVoX salt and fresh water body gazetteer, version 16, revision, 2015-02-19" for sea areas keywords	Element not shown on Submission Form, data centre and publication form  Only in XML and database	AUTO: Default: SeaVoX salt and fresh water body gazetteer	O	1	NERC Vocabulary Server version 2.0, revision, 2012-04-16  "SeaVoX salt and fresh water body gazetteer, version 16, revision, 2015-02-19"
<b>Vertical domain of dataset</b>	identificationInfo[1]/*/extent/*/verticalElement/*/minimumValue identificationInfo[1]/*/extent/*/verticalElement/*/maximumValue identificationInfo[1]/*/extent/*/verticalElement/*/unitOfMeasure	<b>Vertical extent of dataset</b> <ul style="list-style-type: none"> <li>• Minimum value</li> <li>• Maximum value</li> <li>• Unit of Measure</li> </ul>	Vertical extent contained in the dataset. It will be provided as highest and lowest values with units of measurement  Not mentioned on data submitter form, only on data repository form and later on public pages	Vertical extent contained in the dataset, provided as min, max value and unit of measurement. Complete when applicable.  Element <b>not shown</b> on Submission Form  Shown on data centre and publication form	DC	O	1	Real Real ISO/TS 19103  Subset P06 vocab
<b>Spatial resolution</b>	identificationInfo[1]/*/spatialResolution/*/distance (distance)	<b>Spatial resolution</b> <ul style="list-style-type: none"> <li>• Spatial resolution value</li> <li>• Spatial resolution unit</li> </ul>	Spatial resolution refers to the level of detail of the data set. It shall be expressed as a set of zero to many resolution distances (typically for gridded data and imagery-derived products) accompanied with units of measure	Complete when applicable  Element <b>not shown</b> on Submission Form  Shown on data centre and publication form	DC	O	1	Distance values UoM - SI units  Subset P06 vocab
<b>Temporal extent</b>	identificationInfo[1]/*/extent/*/temporalElement/*/extent  gmd:MD_Metadata/gmd:identificationInfo/gmd:MD_DataIdentification/gmd:extent/gmd:EX_Extent/gmd:te	<b>Temporal extent</b> <ul style="list-style-type: none"> <li>• Start date</li> <li>• End date</li> </ul>	Time period covered by the content of the dataset. It will be provided as start and end dates.	Provide a start and end date to indicate the time period covered by the dataset	DS	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)

	mporalElement/gmd:EX_TemporalExtent/gmd:extent/gml:TimePeriod/gml:endPosition/@indeterminatePosition == "unknown"							
Resource Temporal resolution	spatialRepresentationInfo/MD_Georectified/*/MD_Dimension/resolution/	Frequency of observations	Temporal resolution (mean period between each time steps)  Not mentioned on data submitter form, only on data repository form and later on public pages	Indicate the frequency of time series, choosing from the list	DC	O	1	L03 – SeaDataNet Measurement Periodicity Categories
Date of publication	identificationInfo[1]/*citation/*/date[./*]/dateType/*/text()='publication']/*/date	Date of dataset publication	To be compliant with ISO 19115 it is necessary to use at least one among date of publication, date of last revision, or the date of creation.  Since date of creation will be filled in by the data submitter this element will serve to document the publication process of Ingestion and safe-keeping of marine data system	Not mentioned on data submitter form, only on data centre form and later on public pages  Date that the original dataset and the completed data submission form are published and available to the public through the EMODnet Ingestion portal	DC	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)
Date of last revision	identificationInfo[1]/*citation/*/date[./*]/dateType/*/text()='revision']/*/date	Date of dataset revision	To be compliant with ISO 19115 it is necessary to use at least one among date of publication, date of last revision, or the date of creation.	Element <b>not shown</b> on Submission Form  Shown on data centre and publication form	DC	C Conditional, from perspective of processing or not in data centre  Do not expose on xml	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)
Date of creation	identificationInfo[1]/*citation/*/date[./*]/dateType/*/text()='creation']/*/date	Date of dataset creation	To be compliant with ISO 19115 it is necessary to use at least one among date of publication, date of last revision, or the date of creation	Indicate the date the package was created	DS	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)
Specification	dataQualityInfo/*/report/*/result/*/specification  dataQualityInfo/*/report/*/result/*/pass	INSPIRE Conformance <ul style="list-style-type: none"><li>• Specification</li><li>• Degree</li></ul>	INSPIRE mandated element. Can be automatically generated as the submitter is supposed to have knowledge of INSPIRE specifications  Three couples specification – degree will be completed in the backend: <ul style="list-style-type: none"><li>• COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata   Conformant</li><li>• Corrigendum to INSPIRE Metadata Regulation published in the Official Journal of the European Union, L 328, page 83   Conformant</li><li>• Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services   Not conformant</li></ul>	Element <b>not shown</b> on Submission Form  Shown on data centre and publication form.  If Data Centre is aware of	DC  <b>Default:</b> <ul style="list-style-type: none"><li>• COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata   Conformant</li><li>• Corrigendum to INSPIRE Metadata Regulation published in the Official Journal of the European Union, L 328, page 83   Conformant</li><li>• Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets</li></ul>	M	1..*	Specification: <ul style="list-style-type: none"><li>• COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata  </li><li>• Corrigendum to INSPIRE Metadata Regulation published in the Official Journal of the European Union, L 328, page 83 Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services</li></ul> Degree <ul style="list-style-type: none"><li>• Conformant</li><li>• Not conformant</li></ul>

					and services   Not conformant			
<b>Upload &amp; Finish</b>								
Uploaded file name	Ingestion Service specific	<b>Filename</b>	Filename of the data package submitted	Indicate the filename of the data package submitted with this form	DS	M	1	Free text
<b>Process info</b>								
UUID	Ingestion Service specific	<b>Submission identifier (UUID)</b>	Submission identifier automatically assigned by the Ingestion Service	-	DS AUTO			RFC 4122, ISO/IEC 9834-8:2005
Submission Status	Ingestion Service specific	<b>Status</b>	Status indicating the process stage of a submission	-	DS, DC, M	M	1	10 = Drafting form part 1 by Data Submitter 15 = Form rejected by Master and returned to Data Submitter 20 = Form part 1 submitted by Data Submitter 25 = Leading Data Centre assigned by Master 30 = Data Centre Contact assigned by Data Centre 40 = Completing parts 1 and 2 by Data Centre Contact 50 = Approval for publishing requested from Data Submitter 60 = Amendment requested by Data Submitter 70 = Submitted for publishing by Data Centre 75 = Publication draft 80 = Sent to Discovery and Access service 85 = Published at Discovery and Access service 90 = Rejected by Master and returned to Data Submitter 91 = Rejected by Data Centre and returned to Data Submitter
Leading Data Centre	Ingestion Service specific	<b>Assigned Data Centre</b>	Leading Data Centre (assigned by Master)	-	M	M	1	Controlled list of Data Centres registered at the Ingestion Service
Data Centre Contact	Ingestion Service specific	<b>Contact Data Centre</b>	Data Centre point of contact responsible for reviewing the form	-	DC	M	1	Controlled list of users of the Assigned Centre
Form Last update	Ingestion Service specific	<b>Last Update</b>	Timestamp of latest form revision	-	AUTO	M	1	
Resource locator	distributionInfo/*/ transferOptions/*/ /onLine/*/linkage	<b>Dataset URL</b>	Points users to the location (URL) where the data can be downloaded, or to where additional information about the resource may be provided	Shown on data centre and publication form	AUTO: Link to ingestion Service Cloud Storage	M	1	URL (IETF RFC1738 and IETF RFC 2056)
Date of publication	identificationInfo[ 1]/*/citation/*/date[.//*/dateType/*/ /text()='publicatio n']/*/date	<b>Date of dataset publication</b>	To be compliant with ISO 19115 it is necessary to use at least one among date of publication, date of last revision, or the date of creation.  Since date of creation will be filled in by the data submitter this element will serve to document the publication process of Ingestion and safe-keeping of marine data system	Date that the original dataset and the completed data submission form are published and available to the public through the Discovery and Access Service	M	M	1	The default reference system shall be the Gregorian calendar, with dates expressed in accordance with ISO 8601 (yyyy-mm-dd where yyyy is the year, mm is the month and dd is the day)
Publication URL	distributionInfo/*/ transferOptions/*/ /onLine/*/linkage	<b>Publication URL</b>	Url of the submission	Date that the original dataset and the completed data submission form are published and available to the public through the Discovery and Access Service	M	M	1	URL (IETF RFC1738 and IETF RFC 2056)
DOI	identificationInfo[ 1]/*/citation/*/id entifier	<b>DOI</b>	DOI in case of academic publication	Identifier of the publication	M	O	1	

## **Annex 2: Overall Inventory of potential data sources and data providers**

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ID	RBINS_Comments	Is_Data_Provider=Partner	RCM_Reco rdNumber	Country	ReportingCons ortiumMember	Bathymetry	Geology	Chemistry	Biology	Seabed Habitats	Physics	Human Activities	Coastal mapping	EMODnet Theme	PotentialDataProvider	PotentialDataset	ContextInfo	OpportunityReportingConsortiumMember	Comment
422_001_BE	-	0	1	BE	422	0	1	0	0	0	1	0	0	Geology, Physocs	IMDC International Marine & Dredging Consultants NV	Current, Grain size and composition, Salinity, Temperature, Turbidity	Large dataset / several datasets / database	Low-Medium	Existing collaboration in CREST project but data usually restricted
422_002_BE	Check TILES (BMDC)	0	2	BE	422	1	1	0	1	0	1	0	0	Geology, Biology, Physics	DEME	Bathymetry, sediment composition, species (env. Impact)	Large dataset / several datasets / database; Dredging, marine and offshore	High	They were a part of Seadatanet2, however they were not willing to contribute to metadata submission
422_003_BE	-	0	3	BE	422	0	0	0	0	0	1	0	0	Physics	Administratie Waterwegen en Zeewezzen (AWZ) Beheer en exploitatiel	HYMEDIS: Hydro-meteo information for the Belgian Coast and Voordelta	Large dataset / several datasets / database	Low	Commercially available <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=45">http://www.vliz.be/en/imis?module=dataset&amp;dasid=45</a>
422_004_BE	TROPHOS data are in IDOD. All?	0	4	BE	422	0	0	1	0	0	0	0	0	Chemistry	BELSPPO, MARBIOL	TROPHOS: Pigment data for stations 115bis and 330 in the Belgian Part of the	should be in IDOD?		Unrestricted after moratorium period <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=167">http://www.vliz.be/en/imis?module=dataset&amp;dasid=167</a>
422_005_BE	MOW-AMDK is partner of EMODnet Bathymetry	0	5	BE	422	1	0	0	0	0	0	0	0	Bathymetry	MOW-AMDK-Afdeling Kust - Vlaamse Hydrografie	Bathymetry foreshore Flemish coast	Large dataset / several datasets / database; Probably (part) already in	Low	They are not allowed to share the data without permission of their clients. Each data covers small areas such as harbours.
422_006_BE	See comment "Data already available"	0	6	BE	422	0	0	0	1	0	0	0	0	Biology	U Liege	AxiOM: Amphipod crustaceans from insular Posidonia oceanica seagrass		High	Data already available <a href="https://www.europeandataportal.eu/data/en/dataset/http-data-gov-be-dataset-biodiv-9d52535ba5db-48d3-b951-5436bc720d9f">https://www.europeandataportal.eu/data/en/dataset/http-data-gov-be-dataset-biodiv-9d52535ba5db-48d3-b951-5436bc720d9f</a>

422_007_BE	-	0	7	BE	422	0	0	1	0	0	0	0	0	Chemistry	U Liège, Unité d'Océanographe Chimique	EUROTROP H project dataset: Nutrients Cycling and the Trophic Status of Coastal			Unrestricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=129">http://www.vliz.be/en/imis?module=dataset&amp;dasid=129</a> (RBINS organise with VLIZ)
422_008_BE	-	0	8	BE	422	0	0	0	1	0	0	0	0	Biology	INBO	Bird countings on the Belgian Continental Shelf		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=996">http://www.vliz.be/en/imis?module=dataset&amp;dasid=996</a>
422_009_BE	-	0	9	BE	422	0	0	0	1	0	0	0	0	Biology	INBO	Distributio n of seabirds on the Belgian Continental Shelf		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=653">http://www.vliz.be/en/imis?module=dataset&amp;dasid=653</a>
422_010_BE	-	0	10	BE	422	0	0	0	1	0	0	0	0	Biology	INBO	Seabirds and seamamma ls of the Belgian Continental Shelf			Availability? <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=419">http://www.vliz.be/en/imis?module=dataset&amp;dasid=419</a>
422_011_BE	-	0	11	BE	422	0	0	0	1	0	0	0	0	Biology	INBO	Flemish waterbird counts		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=1620">http://www.vliz.be/en/imis?module=dataset&amp;dasid=1620</a>
422_012_BE	-	0	12	BE	422	0	0	0	1	0	0	0	0	Biology	IRScNB/KBN, INBO	Crgulls: Observatio ns of Belgian color ring- marked gulls from 1999 until		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=2692">http://www.vliz.be/en/imis?module=dataset&amp;dasid=2692</a>
422_013_BE	-	0	13	BE	422	0	0	0	1	0	0	0	0	Biology	ILVO	Evaluation of by-catch in the Belgian brown shrimp ( <i>Crangon</i> <i>crangon</i> L.)			CC-by <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5178">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5178</a>

422_014_BE	Presumably in IDOD	0	14	BE	422	0	0	1	0	0	0	0	0	Chemistry	ILVO	Monitoring heavy metals and PCB's in sediment (since 1978) in the Belgian		Low	The data can be made available upon request, please use contact information. <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5150">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5150</a>
422_015_BE	-	0	15	BE	422	0	0	0	1	0	0	0	0	Biology	ILVO	Monthly by-catches and stock recordings from scientific shrimp fishery		Medium-high	Unrestricted for academic use <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=4664">http://www.vliz.be/en/imis?module=dataset&amp;dasid=4664</a>
422_016_BE	See SUMO/TILES	0	16	BE	422	0	1	0	0	0	0	0	0	Bathymetry, Geology	Universiteit Gent; Faculteit Wetenschappen; Vakgroep Geologie; Renard	Full coverage sediment and bathymetry map of the BCS		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=639">http://www.vliz.be/en/imis?module=dataset&amp;dasid=639</a>
422_017_BE	-	0	17	BE	422	0	0	0	1	0	0	0	0	Biology	Universiteit Gent; Faculteit Wetenschappen; Vakgroep Biologie; Onderzoek	Data collected during the educational expeditions of Ghent University, Marine		High	Unrestricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=4374">http://www.vliz.be/en/imis?module=dataset&amp;dasid=4374</a>
422_018_BE	-	0	18	BE	422	0	0	1	0	0	0	0	0	Chemistry	MARBIOL	Ocean acidification effects on nitrification in natural sediment communiti			CC-By-NC <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=4626">http://www.vliz.be/en/imis?module=dataset&amp;dasid=4626</a> (is it pH data or pCO2?)
422_019_BE	-	0	19	BE	422	0	0	0	1	0	0	0	0	Biology	MARBIOL	Meiobenthos of the Southern Bight of the North Sea, Western Scheldt and also		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=927">http://www.vliz.be/en/imis?module=dataset&amp;dasid=927</a>
422_020_BE	-	0	20	BE	422	0	0	0	0	0	0	1	0	Human activities	Eurosense Belfotop NV Vlaamse overheid; Afdeling Kust	Mapping seawalls and connected coastal zone and coastal harbours		Low	For more information on the restrictions, use contact information. <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=172">http://www.vliz.be/en/imis?module=dataset&amp;dasid=172</a>

422_021_BE	-	0	21	BE	422	0	0	0	0	0	1	0	0	Physics	Vlaamse overheid; Waterbouwkundig Laboratorium (WL)	Measurement performed in the framework of the project: "Shoreface	Complex data	Low	Availability? <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277</a>
422_022_BE	IDOD?	0	22	BE	422	0	0	1	0	0	0	0	0	Chemistry	VUB; Faculteit Wetenschappen & Bio-ingenieurswetenschappen; Vakgroep	Mercury and arsenic speciation and trace metal content in fish from the Scheldt		Low	Restricted The data are withheld from general circulation and disclosure but access may be obtained on a case-by-case basis through negotiation <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277</a>
422_023_BE	ULB vs. VUB ?? In IDOD?	0	23	BE	422	0	0	0	1	0	0	0	0	Biology	VUB (ESA)	Phytoplankton of the Belgian Continental shelf gathered by the ULB			Availability? <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=416">http://www.vliz.be/en/imis?module=dataset&amp;dasid=416</a>
422_024_BE	4DEMON?	0	24	BE	422	0	0	1	0	0	0	0	0	Chemistry	VUB; Faculteit Wetenschappen	Heavy metals in the Scheldt		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5277</a>
422_025_BE	-	0	25	BE	422	0	0	1	0	1	0	0	0	Geology, Chemistry	BELSPo, NIOZ	Natural stable isotopes in the primary producents of the pelagic and the benthic			Unrestricted after moratorium period <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=62">http://www.vliz.be/en/imis?module=dataset&amp;dasid=62</a>
422_026_BE	Check with MARIS	0	26	BE	422	0	0	0	0	0	1	0	0	Physics	Marine Information Service (MARIS); Rijksinstituut voor Kust en Zee (RIKZ); The	North Sea tidal data 1984-1993		Low	Restricted <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=725">http://www.vliz.be/en/imis?module=dataset&amp;dasid=725</a>
422_027_BE	-	0	27	BE	422	0	0	1	0	0	1	0	0	Chemistry, Physics	ICES, IRSNB/KBN, VLIZ, ZWI	Time series of water temperature and salinity measured during Belgian	Data archeology (low priority?)		CC-By <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=5098">http://www.vliz.be/en/imis?module=dataset&amp;dasid=5098</a>

1578_001_BE	See TILES	0	1	BE	1578	1	1	0	0	0	0	1	0	Bathymetry, Geology, Human activities	Belgian FPS (Ministry of) Economy	High accuracy multi-beam records of the sand and gravel extraction zones	Close cooperation with our Directorate.	Medium	
1578_002_BE	-	0	2	BE	1578	0	0	0	0	0	1	0	0	Physics	Belgian Navy	T,S data collected by the BE-NL Naval Mine Warfare School	Neighbours in Ostend	High	Preliminary contacts in 2015.
1578_003_BE	-	1	3	BE	1578	0	0	1	1	1	1	0	0	Seabed Habitats, Chemistry, Biology, Physics	University of Liege	Data collected at the STARESO (Calvi, Corsica)	Close colleagues	High	Preliminary contacts in Oct. 2016.
1578_004_BE	-	0	4	BE	1578	0	0	0	0	0	0	1	0	Human activities	Omegabaars.be	Locations and metadata for freshwater aquaculture farms	Close contact runs a freshwater aquaculture farm in Belgium	Medium	Contacted through email, waiting for reply
1578_005_BE	-	0	5	BE	1578	0	0	0	1	0	0	0	0	Seabed Habitats, Chemistry, Biology, Physics	Green Balkans NGO, Bulgaria and TUDAV Foundation, Turkey	Flora and fauna inhabiting the Black Sea	<a href="http://blackseawatch.org/">http://blackseawatch.org/</a>	Low	Contact from CommOCEAN, contacted through email
1578_006_BE	Already in Human Activities?	0	6	BE	1578	0	0	0	0	0	0	1	0	Human activities	EC - JRC	Transport density & real-time - ConTraffic provides information on container	<a href="https://contraffic.jrc.ec.europa.eu/">https://contraffic.jrc.ec.europa.eu/</a>	Medium	Routes are not as detailed as one might assume
1578_007_BE	Already in Human Activities?	0	7	BE	1578	0	0	0	0	0	0	1	0	Human activities	DG TAXUD	Transport density - e.g. TRANSIT service provides information on	<a href="https://ec.europa.eu/taxation_customs/index_en">https://ec.europa.eu/taxation_customs/index_en</a>	Medium	Not only marine or maritime related data

692_001_BG	-	0	1	BG	692	0	0	1	0	0	1	0	0	Chemistry, Physics	Black sea – Danube Coastal Association for Research and Developme	Historical time series of physical oceanography data collection campaigns and	stations monitoring	medium	We had a first contact. Positive to share their data
692_002_BG	-	0	2	BG	692	0	0	1	0	0	1	0	0	Chemistry, Physics	NGO "Morski zvuci"; http://www.morskizvuci.org	ferry box data from Bulgarian coast - years 2015,2016, 2017 /,Priority	Operational Programm e for Fisheries sector / 2007-2013	high	We had a first contact. Positive to share their data
692_003_BG	-	0	3	BG	692	0	0	1	0	0	1	0	0	Chemistry, Physics	GeoMarine Ltd; www.geomarine-bg.com;Georgiev@geomarine-bg.com	buoys data 2015 one year seria	South Stream Transport pipeline project	high	We had a first contact. Positive to share their data
692_004_BG	-	0	4	BG	692	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Basin Directorate "Black Sea Region";web site: http://www.bsbd.org /	Monitoring programm e	medium	might be problem, type of data unknown	
692_005_BG	Which datatypes?	0	5	BG	692	0	0	0	0	0	0	1	0	Human activities	NAFA Bulgaria ; http://iara.government.bg/	Aquacultur e	Monitoring activities	Low	
692_006_BG	-	0	6	BG	692	0	0	0	0	0	0	1	0	Chemistry, Human activities	MARINE ANTI POLLUTION ENTERPRISE JSCO, http://www.pchmv-bg.com/	Oil spills - since 1972; New history after 1992	Oil/monito ring/preve ntion	Low	
692_007_BG	-	0	7	BG	692	0	0	0	1	0	0	1	0	Biology, Human activities	GFCM ; http://www.fao.org/gfcm/en/	Fisheries,Aquaculture,Socio economics	Research activity	Low	

692_008_BG	-	0	8	BG	692	0	0	1	1	0	0	0	0	Chemistry, Biology	NGO for sustainable regional development and environmental protection,	Contaminants in marine water ; Hydrobiological parameters	Operational monitoring programme	Medium	They are willing to share data by certain conditions
4537_001_CY	-	0	1	CY	4537	0	0	1	0	1	0	0	0	Seabed habitats, Chemistry	Ministry of Agriculture, Rural Development and Environment Department	Spatial and temporal monitoring of chlorophyll-a and nutrients / seabed	Monitoring activity	Low to Medium	There is partial cooperation which will facilitate possible data provision
4537_002_CY	-	0	2	CY	4537	0	0	1	0	0	0	0	0	Chemistry	Ministry of Labour, Welfare and Social Insurance Department of Labour Inspection	Isotopes/Radioactivity	Monitoring activity	High	There is existing cooperation
4537_003_CY	Also "Human activities"?	0	3	CY	4537	1	0	0	0	1	0	1	0	Bathymetry, Seabed habitats	Ministry of Interior, Department of Lands and Surveys - <a href="http://portal.dls.moi.gov">http://portal.dls.moi.gov</a>	LIDAR, Aquaculture data sets, Cables, Transport, Habitats maps, Sea	Monitoring activity	Medium to High	
4537_004_CY	-	0	4	CY	4537	0	1	1	0	0	1	0	0	Chemistry, Physics	Eni - <a href="https://www.eni.com/en_IT/home.page">https://www.eni.com/en_IT/home.page</a>	Physico chemical parameters from oil and gas companies activated in the EEZ of	Monitoring activity	High	There is existing cooperation (Collab with Israel / Italy)
96_001_DE	-	0	1	DE	96	0	0	0	0	0	1	0	0	Physics	Institute of Sea Fisheries (EDMO 1570) Thünen-Institute of Baltic Sea	Both recent and Historical time series T,S	Monitoring, Research activity	High	When activity is not in int/natl programmes, data are not reported
96_002_DE	-	0	2	DE	96	0	0	1	0	0	0	0	0	Chemistry	GEOMAR   Helmholtz Centre for Ocean Research (EDMO 2947)	T,S, Currents, Nutrients	Monitoring	Medium to High	data 1997 bis 2014 in the Labrador Sea

96_003_DE	-	1	3	DE	96	0	0	0	1	1	0	0	0	Geology, Seabed Habitats, Biology	BSH (96)	Zooplankton, phytoplankton, species and benthos data in the North sea	Monitoring, Research activity	Medium to High	Only part of this data were reported to ICES and HELCOM.
96_004_DE	-	0	4	DE	96	0	0	1	0	0	0	0	0	Chemistry	Office of Schleswig-Holstein Wadden Sea National Park (EDMO)	Marine litter collected on beaches	Monitoring	High	Data 2002 - today, 4 stretches, 4 times/yr
96_005_DE	-	0	5	DE	96	0	0	1	0	0	0	0	0	Chemistry	State Agency for Environment, Nature and Geology, Mecklenburg-	Marine litter collected on beaches	Monitoring	High	Data 2012 - today, 25 stretches, 4 times/yr
96_006_DE	Better "Biology"?	1	6	DE	96	0	0	0	1	0	0	0	0	Human Activities	BSH (96)	Fish, Mammals, Birds in Relation to Offshore Wind energy farms	Monitoring	Medium	data are not public, have to be declassified
729_001_DK	-	0	1	DK	729	1	1	1	1	1	1	0	0	Bathymetry, Geology, Seabed Habitats, Chemistry, Biology, Physics	Femern A/S	CTDs, water bottle, moorings, sidescan, turbidity, plankton, seabed	Data from the baseline studies for the environmental impact assessment	Partially high	Existing Cooperation with ICM-CSIC Researchers
729_002_DK	-	0	2	DK	729	1	1	1	1	?	1	1	1	Bathymetry, Geology, physics, biology + ?	Nord Stream 2	Profile, sidescan + ?	Nord Stream 2 will be a twin pipeline through the Baltic Sea	Low	Bathymetry, geomorphology. Existing cooperation with ICM-CSIC researchers
729_003_DK	-	0	3	DK	729	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Environment Agency for the Mineral Resources Activities (EAMRA), Government	CTDs, water bottle, plankton. West Greenland 2010-2015	In connection with licenses to oil explorations in Greenland	High	The data is held at the Arctic department at Aarhus University

729_004_DK	-	?	4	DK	729	?	1	?	0	1	0	0	?	Geology, Biology + ?	SVANA	Stone reefs data (substrat + species) from inner Danish waters 189x-2015		High	The data is currently held by DCE at Aarhus University
729_005_DK	-	?	5	DK	729	0	0	0	1	0	0	0	0	Biology	SVANA	Coastline vegetation data (species + substrat) from inner Danish waters		High	The data is currently held by DCE at Aarhus University
729_007_DK	One lead partner should be designated (729 or 96).	0	7	DK	729	1	1	1	1	1	1	0	0	Bathymetry, Geology, Seabed Habitats, Chemistry, Biology, Physics	Femern A/S	CTDs, water bottle, moorings, sidescan, turbity, plankton, seabed	Data from the baseline studies for the environmental impact	Partially high	Existing Cooperation with ICM-CSIC Researchers
729_008_DK	One lead partner should be designated (729 or 96).	0	8	DK	729	1	1	1	1	?	1	1	1	Bathymetry, Geology, physics, biology + ?	Nord Stream 2	Profile, sidescan + ?	Nord Stream 2 will be a twin pipeline through the Baltic Sea	Low	Existing Cooperation with ICM-CSIC Researchers
713_001_EST	-	0	1	EST	713	1	0	0	0	0	0	0	0	Bathymetry	Maritime Administration <a href="http://www.vta.ee">www.vta.ee</a>	Bathymetry	Monitoring	Medium	First contacts made
713_002_EST	-	0	2	EST	713	0	1	0	0	0	0	0	0	Geology	Estonian Geological Survey <a href="http://www.egk.ee">www.egk.ee</a>	Geological data from more recent projects	Research	High	EMODnet Geology partner through some projects, but might have additional dataset
713_003_EST	-	0	3	EST	713	0	0	1	0	0	0	0	0	Chemistry	Estonian Environmental Research Centre <a href="http://www.ekuk.ee">www.ekuk.ee</a>	Dangerous substances, chemistry	Monitoring	Medium-High	With some projects had some cooperation

713_004_EST	Other data than those sent to ICES?	0	4	EST	713	0	0	0	1	0	0	0	0	Biology	Estonian Marine Institute www.sea.ee	Fisheries, plankton, seabed	Monitoring, research	Low	Already sending data to ICES
713_006_EST	-	0	6	EST	713	0	0	0	1	0	0	0	0	Biology	Estonian Ornithological Society www.eoy.ee	Bird observations	Monitoring	Medium	
713_007_EST	-	0	7	EST	713	0	0	0	1	0	0	0	0	Biology	Pro Mare MTÜ www.promare.ee	Seal observations	Monitoring	Medium	
713_008_EST	"Coastal mapping" not an EMODnet theme. Better "Bathymetry"?	0	8	EST	713	0	0	0	0	0	0	0	1	Coastal Mapping	Land Board www.maaamet.ee	LIDAR data from coastal areas	Research	Low	
713_009_EST	Should be "Chemistry"	0	9	EST	713	0	0	1	0	0	0	0	0	Human Activities	Environmental Inspectorate www.kki.ee	Dangerous substances, chemistry, radioactivity	Monitoring	Medium	
713_010_EST	Should be "Chemistry"	0	10	EST	713	0	0	1	0	0	0	0	0	Human Activities	Hoia Eesti Merd MTÜ www.hem.ee	Litter in coastal areas	Monitoring	Medium	
713_011_EST	-	0	11	EST	713	0	0	0	0	0	1	0	0	Human Activities	Department of Civil Engineering and Architecture www.ttu.ee	Underwater noise	Research	Low	

713_012_EST	Measured waves?	0	12	EST	713	0	0	0	0	0	1	0	0	Physics	Laboratory of Wave Engineering wavelab.io c.ee	Waves	Research	Low	models and measurements
713_013_EST	Better "Chemistry"?	0	13	EST	713	0	0	0	0	0	0	1	0	Human Activities	Police and Border Guard Board www.polits ei.ee	Oil pollution samples	Monitoring	Low	Quality? What are they collecting? HELCOM might have this data (713 thinks they don't have that data...)
713_014_EST	-	0	14	EST	713	0	0	0	0	0	0	1	0	Human Activities	Estonian Environment Board http://www.keskkonn aamet.ee	Dredging, dumping, sand extraction	Monitoring	Medium	
1544_001_FI	-	0	1	FI	1544	0	1	0	0	1	0	0	0	Geology	Metsähallitus, Parks & Wildlife Finland	Seabed substrate	The Finnish Inventory Program for the Underwater Marine Environment (VELMU)	High	Data is in the Excel-tables
1544_002_FI	-	0	2	FI	1544	0	1	0	0	0	0	0	0	Geology	Finnish Environment Institute (SYKE), Finland	Seabed substrate	The Finnish Inventory Program for the Underwater Marine Environment (VELMU)	High	Data is in the Excel-tables
1544_003_FI	-	0	3	FI	1544	0	1	0	0	0	0	0	0	Geology	Centre for Economic Development, Transport and Environment, Finland	Seabed substrate	The Finnish Inventory Program for the Underwater Marine Environment (VELMU)	High	Data is in the Excel-tables
1544_004_FI	-	0	4	FI	1544	0	1	0	0	0	0	0	0	Geology	University of Turku, Finland	Seabed substrate, sedimentation rates	data collected in various research projects	Medium	data format not known yet

1544_005_FI	-	0	5	FI	1544	0	1	0	0	0	0	0	0	0	Geology	Nord Stream	Profiles, sidescan sonar data, sample data	Nord Stream is a twin pipeline through the Baltic Sea transportin	High	GTK have copies of data (first phase)
1544_006_FI	-	0	6	FI	1544	0	1	0	0	0	0	0	0	0	Geology	Finnish Navy	Multibeam data, seabed substrate	Navy seabed mapping	Low	
1725_001_FI	-	0	1	FI	1725	0	0	1	0	0	1	0	0	Chemistry, Physics	Turku University of Applied Sciences	Buoy data from Seili station	Monitoring buoy in the Archipelago Sea	Good		
1725_002_FI	-	0	2	FI	1725	0	0	0	0	0	1	0	0	Physics	Finnish Traffic Agency	temperature, sound velocity profiles	Data from bathymetric mappings	Moderate	format?	
1725_003_FI	-	0	3	FI	1725	0	0	0	0	0	1	0	0	Physics	Utö, Tvärminne, Vallgrind and Krunnit	Fixed stations ctd, profiles and time series	Regular monitoring	good	old data of late FIMR, reasent data by FMI	
1725_004_FI	-	0	4	FI	1725	0	0	0	0	0	1	0	0	Physics	Luke	ctd, temperature time series	fishery monitoring	moderate		
1725_005_FI	-	0	5	FI	1725	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Husö, Utö, Tvärminne	Profiling buoys	frequent profiles, new installations	moderate/go od		

1725_006_FI	-	0	6	FI	1725	0	0	1	0	0	0	0	0	Chemistry	STUK	radioactivity of surface waters	monitoring data	low	
1725_007_FI	Data providers and parameters too vague	0	7	FI	1725	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	several universities	research projects datasets		moderate/low	details not yet familiar to data centre
486_001_FR	-	0	1	FR	486	0	0	0	0	0	1	0	0	Physics	Somme, SME doing marine noise acquisition for local studies (e.g.	local noise survey	Monitoring	Low	is also interested in data management support, guidance as well as virtual research environment or computing resources (e.g. HPC in IFREMER)
486_002_FR	-	0	2	FR	486	0	0	0	0	1	1	0	0	Seabed Habitats, Physics	In Vivo, SME doing coastal development survey (harbour...)	T,S, bathymetry, seabed	Monitoring	Low	dataset acquired for local administration could be easily publicly shared
486_003_FR	-	0	3	FR	486	0	0	0	1	0	1	0	0	Biology, Physics	France Energy Marine	survey or geo-statistics done for development of Marine Renewable	Monitoring	Medium	Good aggregator of SME resources in the domain.
486_004_FR	-	0	4	FR	486	0	0	1	0	0	0	0	0	Chemistry	Regional Health Agency	chemistry of the sea bathing waters	Monitoring	Medium	Should be pushed to quadriga
486_005_FR	Data types?	0	5	FR	486	0	0	0	0	0	1	0	0	Physics	IXBLUE	Development of instruments for navigation, seabed or fisheries mapping	Instrument and solution development	Low	Contact for possible partnership on data services

486_006_FR	-	0	6	FR	486	0	0	0	0	0	1	0	0	Physics	CGG	ocean physics (e.g. celerity profiles done to calibrate seismic)	Operational fleet, global coverage	High	In a low activity context, they are willing to collaborate
486_007_FR	-	0	7	FR	486	0	0	1	0	0	0	0	0	Chemistry	Ansel (NGO)	Beach litter survey	Monitoring	Low	Local organization
540_001_FR	-	0	1	FR	540	1	0	0	0	0	1	0	0	Bathymetry, Physics	National Institute for Universe Sciences (INSU, CNRS) <a href="http://www">http://ww</a>	Raw data ASCII files: Singlebeam data (coastal bathymetry ) Pressure,	Research activity	High	Look if they have Bathymetry, on FTP server
540_002_FR	-	0	2	FR	540	1	1	1	1	1	1	1	0	Bathymetry, Geology, Seabed habitats, Chemistry, Biology, Physics, Human	National Centers for Environmental Information (NCEI, NOAA) <a href="https://ww">https://ww</a>	Wide range of raw data in climate, coastal, oceanographic and geophysical variety of	Data Collecting activity	Medium	Since March 2017 they are partners of EMODnet Bathymetry consortium.
540_003_FR	-	0	3	FR	540	1	0	0	0	0	0	0	0	Bathymetry	OLEX (Marine charting and navigation) <a href="http://www.olex.no.Ole">www.olex.no.Ole</a>	Bathymetry (singlebeam and multibeam) with tide merging (predicted or	Commercial fishing activity (since 15 years)	Medium to High	Raw data are in *.all and will be converted to ascii (lat/lon and depth); dataset consists of 10 square km from offshore east Malta
540_004_FR	-	0	4	FR	540	1	0	0	0	0	0	0	0	Bathymetry	teamSurv <a href="http://www.teamsurv.com/">http://www.teamsurv.com/</a> Tim Thornton: <a href="mailto:Tim.Thornton@teams">Tim.Thornton@teams</a>	Bathymetry (singlebeam and multibeam) with tide merging (predicted or	Opportunity with pleasure boat (since 2010)	High	raw data in *.all to be converted in *.geotiff; 30 km <sup>2</sup> from White Bank; 1000 km <sup>2</sup> from Malta Plateau; 2100 km <sup>2</sup> from Malta Escarpment -- Ask for the required resolution; do we need an
540_005_FR	-	0	5	FR	540	1	1	0	0	0	0	0	1	Bathymetry, Geology, Human activities	Local autonomous harbours (Le Havre, Marseille, Bordeaux, ...)	Multibeam, singlebeam, sidescan, wrecks, obstructions, sediments	Monitoring and maintenance activity	Medium to High	

540_006_FR	-	0	6	FR	540	1	1	0	0	0	0	1	0	Bathymetry, Geology, Human activities	Regional councils Departmental Directorate of Territories (DDT)	Multibeam, singlebeam, sidescan, wrecks, obstructions, sediments	Monitoring and maintenance activity	Medium to High	
540_007_FR	-	0	7	FR	540	1	0	0	0	0	0	0	0	Bathymetry	ENSTA Bretagne http://www.ensta-bretagne.fr / Roderick Moitié:	Multibeam, Singlebeam, sidescan	Research activity	High	The actual relations and cooperation might facilitate data providing process
540_008_FR	-	0	8	FR	540	1	1	0	0	0	0	0	0	Bathymetry, Geology	INTECHMER http://www.intechmer.cnam.fr/ l-institut/presentation/	Multibeam, grain size	Research activity	Medium	The actual relations and cooperation might facilitate data providing process
540_009_FR	-	0	9	FR	540	1	0	0	0	0	0	0	0	Bathymetry	Institut Paul Emile Victor http://www.institut-polaire.fr/language/fr /	Multibeam	Research activity	High	The actual relations and cooperation might facilitate data providing process
540_010_FR	-	0	10	FR	540	1	0	0	0	0	0	0	0	Bathymetry	Local industries and every kind of private organizations	Multibeam, singlebeam, etc.	Monitoring and commercial activity in french waters	Low to medium	The research cooperation might facilitate data providing process
540_011_FR	Possible duplicates !	0	11	FR	540	1	1	1	1	1	1	1	1	Bathymetry, Geology, Seabed habitats, Chemistry, Biology, Physics, Human	Every foreign data collectors in our waters	Various	Various	High	
540_012_FR	-	0	12	FR	540	1	0	0	0	0	0	0	0	Bathymetry	DRASSM (French Marine and Sub-marine Archeological Department)	Mainly high resolution Multibeam (R2Sonic) data on wrecks	Research activity	Medium to High	Geodetic Institute of Slovenia is partner on Emodnet Coastal Mapping. So far no data have been sent. The extention of the project "High Resolution Mapping - HRM" however might

43_001_GB	-	0	1	GB	43	1	0	0	0	0	0	0	Bathymetry	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2012 British Geological Survey Marine Geoscience Programme - South	Multibeam backscatter, Surface Towed Boomer (Renewables Round 3 data set)	High	May already be sent to EMODnet by Geological Survey
43_002_GB	-	0	2	GB	43	0	1	0	0	0	0	0	Geology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010 GL Garrad Hassan, Technical Characterisation of the Argyll Array Windfarm	Geological site assessment (report), (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_003_GB	-	0	3	GB	43	0	?	0	0	0	0	0	Geology?	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2012 Cathie Associates, Argyll Array Geophysical Survey Interpretation -	Geophysical surveys (reports), (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_004_GB	-	0	4	GB	43	0	0	0	1	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2009-2011 RPS, Argyll Array Bird Survey	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_005_GB	-	0	5	GB	43	0	0	0	1	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010, Food and Environment Research Agency (FERA), Argyll Array	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_006_GB	-	0	6	GB	43	0	0	0	1	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2012 RPS Argyll Array Offshore Wind Farm Basking Shark Survey	basking shark survey, harbour porpoise records, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_007_GB	-	0	7	GB	43	0	0	0	1	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2012 Scottish Power Renewables, Argyll Array Offshore Windfarm	discussion about a data set, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access

43_008_GB	-	0	8	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2012 Xero Energy, Argyll Array Connection Solution and Route Design - Onshore	possible species/ha bitat data, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_009_GB	-	0	9	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	Argyll Array Bird Flight Height Data	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_010_GB	-	0	10	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2013 SMRU Ltd, Argyll Array Windfarm Basking Shark Draft (FINAL) Chapter for	basking shark data set, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_011_GB	-	0	11	GB	43	0	1	0	0	0	0	0	0	Geology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010, METOC, Zone 8 - Bristol Channel Atlantic Array, Cable	Report, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_012_GB	-	0	12	GB	43	0	?	0	0	0	0	0	0	Geology?	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2011, Gardline Geosurvey, Zone 8 - Bristol Channel Atlantic Array,	multibeam magnetometer sidescan sonar boomer sub-bottom	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_013_GB	-	0	13	GB	43	0	1	0	0	0	0	0	0	Geology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2011, GEO, Zone 8 - Bristol Channel Atlantic Array, Geotechnical Site	Boreholes, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_014_GB	-	0	14	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2009-2010, Econ, Zone 8 - Bristol Channel Atlantic Array, Ornithological Survey	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access

43_015_GB	-	0	15	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2009-2010, HiDef/VWT, Zone 8 - Bristol Channel Atlantic Array, Aerial Bird	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_016_GB	-	0	16	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010 RPS, Bristol Channel, Atlantic Array Marine Mammal Survey	marine mammal dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_017_GB	-	0	17	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010, RPS, Zone 8 - Bristol Channel Atlantic Array, Fish Larvae Survey	fish larvae dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_018_GB	-	0	18	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2007, WWT, Bristol Channel Atlantic Array, Aerial Surveys for	Bird dataset, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_019_GB	-	0	19	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2010-2011 Zone 8 Bristol Channel Atlantic Array, RPS Nocturnal Bird	Bird dataset and 'other species groups', (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_020_GB	-	0	20	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2013, RPS, Zone 8 - Bristol Channel Atlantic Array, Underwater Noise	possible data on fish abundance and marine mammals, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_021_GB	-	0	21	GB	43	0	0	0	1	0	0	0	0	Biology	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2011, RPS, Zone 8 - Bristol Channel Atlantic Array, Benthic Ecology	benthos and fish data; grab photos, logs, PSA, (Renewables Round 3 data set)	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access

43_022_GB	-	0	22	GB	43	0	1	0	0	0	1	0	0	Geology, Physics	The Crown Estate (Marine Data Exchange); EDMO Id. 1604	2011, GEMS, Zone 8 - Bristol Channel Atlantic Array, Metocean	CTDs, suspended sediments; sediments from grabs; AWAC B, AWAC D, Triaxis B,	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
43_023_GB	-	0	23	GB	43	0	0	0	0	0	1	0	0	Physics	Plymouth Marine Laboratory; EDMO Id. 47	Western Channel Observatory, Stations E1 and L4 (near real time data as delayed)	T, S, meteorological variables, fluorescence, turbidity, O2 and nitrate	Medium	Near real-time data for EMODnet Physics (Delayed mode data already in SeaDataNet)
43_024_GB	-	0	24	GB	43	0	0	0	0	0	1	0	0	Physics	Cefas (Lowestoft); EDMO Id. 28	Wavenet (network operated by Cefas on behalf of the Environment Agency);	Wave height, Tz, Peak Direction, Spread, Temperature	Medium	See Wavenet site ( <a href="http://wavenet.cefas.co.uk/TextSummary">http://wavenet.cefas.co.uk/TextSummary</a> ); this includes 18 sites operated by Cefas and many other wave buoys operated by others, a few of which are already in EMODnet
43_025_GB	-	0	25	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	AFBI, Northern Ireland; EDMO Id. 1385	North of Ireland Joint Agency Coastal Monitoring Programme	Monitoring data	Medium	
43_026_GB	-	0	26	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	AFBI, Northern Ireland; EDMO Id. 1385	Irish Sea Transects (surveys since 1990s)	Monitoring data	Medium	
43_027_GB	-	0	27	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	Marine Scotland Science; EDMO Id. 2135	Inshore Coastal Long Term Monitoring (10 series: T, S, nutrients)	Monitoring data	Medium	
43_028_GB	-	0	28	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	Marine Scotland Science; EDMO Id. 2135	Offshore Standard Oceanographic Sections (3 sections); profiles of temperature	Offshore Standard Oceanographic Sections - monitoring	Medium	

43_029_GB	-	0	29	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	Isle of Man Government Laboratory; EDMO Id. 1371	Isle of Man Marine Water Monitoring Programme	Monitoring data	High	
43_030_GB	-	0	30	GB	43	0	0	1	0	0	1	0	0	Chemistry, Physics	University of Bangor, School of Ocean Science; EDMO Id. 1468	St. George's Pier, Menai Strait (Irish Sea) data set	Long term time series	Medium/Low	
43_031_GB	-	0	31	GB	43	0	0	0	0	0	1	0	0	Physics	Channel Coastal Observatory (CCO); EDMO Id. 1110	CCO tide gauge and wave buoy data (33 series)	Time series along the south coast of UK	Medium	
43_032_GB	-	0	32	GB	43	0	0	0	0	0	1	0	0	Physics	Peel Ports Group Ltd.; EDMO Id. 4654	tide gauge data	Extension of long time series	Medium/Low	
43_033_GB	-	0	33	GB	43	0	0	0	0	0	1	0	0	Physics	Shell UK Exploration and Production Ltd; EDMO Id. 78	Metocean data from approx 20 sites	Shell were a partner in the SIMORC project, but no longer participate, so this	Medium	
693_001_GE	-	0	1	GE	693	0	0	0	1	0	0	0	0	Biology	Ilia State University, Faculty (School) of Natural Sciences and engeneering	Marine mammals	Research activity	Medium to High	There is existing cooperation which will facilitate further data provision
693_002_GE	-	0	2	GE	693	0	0	1	1	0	0	0	0	Chemistry, biology	"Laboratory Research Centre" Ltd. Mikaberidze str. N2., Poti,	Chemical and bacteorological parameters ((sea water, discharges)	Monitoring activity	High	There is existing cooperation which will facilitate further data provision

693_003_GE	-	0	3	GE	693	1	0	0	0	0	0	0	Bathymetry	GAMMA Consulting Ltd. 17a, D.Guramishvili Ave., Tbilisi Vakhtang	Bathymetry	Monitoring activity, research activities	Medium to High	Existing Cooperation with TSU-DNA Researchers
693_004_GE	-	0	4	GE	693	1	0	0	0	0	0	0	Bathymetry	"NAPIRDAC VA Ltd"4, Kipshidze str, Tbilisi Tariel Beridze Phone (+995) 599 491600 Email : tarielberidze@yahoo.com	Bathymetry	Monitoring activity, research activities	High	Existing Cooperation with TSU-DNA Researchers
693_005_GE	-	0	5	GE	693	0	0	0	0	0	1	0	Human activities	Black Sea Aquaculture Company , POTI, Georgia; Website: http://bsag	Aquaculture	Research & monitoring activity	Low	They have created the first marine aquaculture farm in Georgia. We have had a contact with the authorities, but more further efforts are needed to have the definite (positive) response.
269_001_GR	-	0	1	GR	269	0	0	1	0	0	0	0	Biology	TEI Ionian Islands, School of Technological Application s, Department	Heavy metals in blood of Sea birds	Research activity	High	We had a first contact. Positive to share their data when they finalize their publications.
269_002_GR	-	0	2	GR	269	0	0	1	0	0	1	0	Chemistry, Physics	National Centre for Scientific Research 'Demokritos', Institute of Biology, Hydrobiolo	T,S, Silicate, Phosphate, Nitrite, Nitrate, Ammonium, DO, Phytoplakt	Research activity	Medium to High	There is existing cooperation which will facilitate further data provision
269_003_GR	-	0	3	GR	269	0	0	1	0	0	1	0	Chemistry, Physics	National Centre for Scientific Research 'Demokritos', Laboratory of	Development of advanced analytical methods for the determination of toxic	Medium to High		

269_004_GR	-	0	4	GR	269	0	0	0	0	0	0	0	0	Physics	National Centre for Scientific Research 'Demokritos', Environmental	Radioactivity in biota, Geological sample radioactivity, Radioactivity in the	Research activity	Medium to High	
269_005_GR	-	0	5	GR	269	0	0	1	0	0	0	0	0	Chemistry	University of Athens, Department of Chemistry, Division of Inorganic and	Heavy metals in the water column	Research activity	High	There is existing cooperation which will facilitate further data provision
269_006_GR	-	0	6	GR	269	0	0	0	1	0	0	0	0	Biology	University of Athens, Department of Biology, Laboratory of Zoology (LZ/UATH) -	Zoobenthos taxonomic abundance, Zoobenthos taxonomy related wet weight	Research - Monitoring activity	High	There is existing cooperation which will facilitate further data provision. Other professors how may have data: Megalofonou P. pmegalo@biol.uoa.gr - Verriopoulos G.
269_008_GR	-	0	8	GR	269	0	0	1	0	0	0	0	0	Chemistry	MEDSOS - http://medsos.gr/medsos/ - Natalia Roumelioti - Responsible for	Marine litter - Around 2000 Partner in projects: Collaborative Environment	Research & monitoring activity.	High	
269_009_GR	-	0	9	GR	269	1	1	0	0	0	0	1	0	Geology, Human activities	GEOTECH - http://www.geotech.gr/ - Liapakis X. - cliapakis@geotech.gr	Cables, geological & hydrological maps, - Around 1992	Research activity	Low	Most data restricted
269_010_GR	-	0	10	GR	269	0	0	0	0	0	0	1	0	Human activities	Nireus Aquaculture - http://www.nireus.com/ - info@nireus.com	Aquaculture	Monitoring activity	Low	DG already provided a map, but still lacking species
269_011_GR	-	0	11	GR	269	0	1	0	0	0	0	1	0	Human activities, Geology	Hellenic Petroleum SA - http://www.helpe.gr/ en - D. Evgenios - d.evgenios	Metocean data, Gravity, Seismic reflection - Ionian Sea, Thermaikos Gulf, Libyan	Oil/gas/energy activities		

269_012_GR	-	0	12	GR	269	0	0	0	1	0	0	0	0	Biology	University of Thessaly, Ichthyology - Hydrobiology Laboratory - <a href="http://www.hydrobiol.gr">http://www.hydrobiol.gr</a>	Fish data	Research activity	Medium	
269_013_GR	-	0	13	GR	269	0	0	0	0	0	1	0	0	Physics	University of the Aegean, Department of Marine Sciences - <a href="http://www.mar.aegean.gr">http://www.mar.aegean.gr</a>	CTD, Currents, waves	Research activity	Medium to High	Other professors who may have data in different fields: Velegrakis A. <a href="mailto:afv@aegean.gr">afv@aegean.gr</a> - Koutsoumpas D. <a href="mailto:drosos@aegean.gr">drosos@aegean.gr</a> - Krasakopoulou E.
269_014_GR	-	0	14	GR	269	0	0	1	0	0	0	0	0	Chemistry	University of Crete, Department of Chemistry - <a href="http://www.chemistry.uoc.gr">http://www.chemistry.uoc.gr</a> - Concentration of other organic contaminants in the water column, Concentration	Concentration of other organic contaminants in the water column, Concentration	Research activity	Medium to High	
269_015_GR	-	0	15	GR	269	0	0	0	0	0	0	1	0	Human activities	SELONDA Aquaculture SA - <a href="http://www.selonda.com/gr/">http://www.selonda.com/gr/</a> -	Aquaculture	Monitoring activity	Low	Previous experience indicated that they are not willing to share data that might disadveritze their products
269_016_GR	-	0	16	GR	269	0	0	1	0	0	0	0	0	Chemistry	HELLENIC MARINE ENVIRONMENT PROTECTION ASSOCIATION -	Marine litter - Last 30 years	Research & monitoring activity		
269_017_GR	-	0	17	GR	269	1	0	0	0	0	0	0	0	Bathymetry	HELLENIC NAVY HYDROGRAPHIC SERVICE - <a href="https://www.hnhs.gr/el/">https://www.hnhs.gr/el/</a> - For	Bathymetric & sea level data, meteorology, Hydrography, Naval Cartograph	Research & monitoring activity	Low	May already be sent to EMODnet by Geological Survey
269_018_GR	-	0	18	GR	269	0	0	0	0	0	0	1	0	Human activities	ETME Peppas & Associates Ltd - <a href="http://www.etme.gr/el/">http://www.etme.gr/el/</a> - Antonis	Windfarm parks, Hydraulic Engineering & Construction in flow, offshore	Research & monitoring activity	Low to Medium	Existing Cooperation with HCMR but no so willing to share data

269_019_GR	-	0	19	GR	269	0	0	0	1	1	0	0	0	Biology, Seabed habitats	The sea turtle protection society of greece ARCHELON http://www.archelon.	Species Traits - Habitat - Mediterranean - Around 1985	Monitoring activity	High	Existing Cooperation with HCMR Researchers
269_020_GR	-	0	20	GR	269	0	0	0	1	1	0	0	0	Biology, Seabed habitats	Hellenic ornithological society http://www.ornithologiki.gr/ - Portolou Danai -	Species Traits - Habitat - Mediterranean - Around 1985	Research & monitoring activity	High	Existing Cooperation with HCMR Researchers
269_021_GR	-	0	21	GR	269	0	0	0	1	1	0	0	0	Biology, Seabed habitats	PELAGOS CETACEAN RESEARCH INSTITUTE http://www.pelagosi nstitute.gr/ - Frantzis	Species Traits - Habitat - Mediterranean - Around 1993	Research & monitoring activity	High	Existing Cooperation with HCMR Researchers
269_022_GR	-	0	22	GR	269	0	0	0	1	0	0	1	0	Biology, Human activities	Technological Education Institute of Western Greece, Dep. Fishery-	Aquaculture, Biology and ecology of aquatic animals, Exploitation and	Research & monitoring activity	Medium to High	Existing Cooperation with HCMR Researchers
269_023_GR	-	0	23	GR	269	1	0	1	0	0	0	0	0	Chemistry, Physics	University of Patras, Geology Department, Marine Geology and Physical	Marine litter, Bathymetric Data	Research & monitoring activity	Medium to High	May already be sent to EMODnet by Geological Survey
269_024_GR	-	0	24	GR	269	0	0	0	0	0	1	0	0	Physics	Institute of Environmental Research and Sustainable Development -	Wind, physics, currents data	Research & monitoring activity	Medium	
269_025_GR	-	0	25	GR	269	0	0	0	0	0	1	0	0	Physics	University of Athens, Section of Environmental Physics and Meteorology -	Wind, waves data	Research activity	Medium	Other professors how may have data as: Kartalis, K. ckartali@phys.uoa.gr - Sofianos, S. sofianos@oc.phys.uoa.gr

269_026_GR	-	0	26	GR	269	0	0	0	0	0	1	0	0	Physics	Hellenic National Meteorological Service - <a href="http://www.hnms.gr/">http://www.hnms.gr/</a>	Rain data, Wave direction, Wave height and period statistics - Mediterranean	Monitoring activity	Medium	Michael Myrsillidis
269_027_GR	-	0	27	GR	269	0	1	0	0	0	0	0	0	Geology	Institute of Local History - <a href="http://www.insti.gr/">http://www.insti.gr/</a> - Andreas Andrinopoulos -	Lithology, Sediment grain size parameters, Mineralogical composition		High	Existing Cooperation with HCMR, Andriopoulos is previous employ of Institute of Geology and Mineral Exploration (IGME)
269_028_GR	-	0	28	GR	269	0	0	0	1	0	0	0	0	Biology	University of Patras, Department of Biology, Laboratory of Zoology <a href="http://ww">http://ww</a>	Zooplankton (biomass, abundance), CHLA, fish, Aquaculture etc..	Research activity	Medium to High	Other professors how may have data as: Makridis, P. <a href="mailto:makridis@upatras.gr">makridis@upatras.gr</a> - Dailianis, S. <a href="mailto:sdailianis@upatras.gr">sdailianis@upatras.gr</a> - Tzanatos, E. <a href="mailto:tzanatos@upatras.gr">tzanatos@upatras.gr</a> -
269_029_GR	-	0	29	GR	269	0	1	0	0	0	1	1	0	Geology, Human activities, Physics	University of Patras, Department of Environmental and Natural Resources	University of Patras, Department of Environmental and Natural Resources	Research activity	Medium to High	Other professors how may have data as: Kechagias G. <a href="mailto:gkechagi@upatras.gr">gkechagi@upatras.gr</a> - Koutsias N. <a href="mailto:nkoutsia@upatras.gr">nkoutsia@upatras.gr</a> - Papadaki M. <a href="mailto:marpapadaki@upatras.gr">marpapadaki@upatras.gr</a> -
269_030_GR	-	0	30	GR	269	0	1	0	0	0	0	0	0	Geology	University of the Aegean, Department of Marine Sciences - <a href="https://geography.aegean.gr">https://geography.aegean.gr</a>	geological mas, seismic data	Research activity	Medium to High	Other professors how may have data in different fields: Koukoulas S. <a href="mailto:skouk@geo.aegean.gr">skouk@geo.aegean.gr</a> - Kostopoulou E. <a href="mailto:ekostopoulou@aegean.gr">ekostopoulou@aegean.gr</a>
269_031_GR	-	0	31	GR	269	0	1	1	1	0	1	0	0	Physics, Geology, Biology, Chemistry	Aristotelian University of Thessaloniki - <a href="http://www.auth.gr/sci">http://www.auth.gr/sci</a>	Data from all fields	Research activity	Medium	Professors how may have data: Siakavara A. <a href="mailto:skv@auth.gr">skv@auth.gr</a> - Aslanidis P. <a href="mailto:aslanidi@chem.auth.gr">aslanidi@chem.auth.gr</a> - Koutouli E. <a href="mailto:evd@chem.auth.gr">evd@chem.auth.gr</a> - Samara K. <a href="mailto:csamara@chem.auth.gr">csamara@chem.auth.gr</a> -
269_032_GR	-	0	32	GR	269	0	0	0	0	0	1	0	0	Bathymetric	National Observatory of Athens - <a href="http://www.noa.gr/index.php?lang=el">http://www.noa.gr/index.php?lang=el</a> - Dr.	Sea Level Data	Research & monitoring activity	Low	

269_033_GR	-	0	33	GR	269	0	0	0	0	0	1	0	0	Bathymetric	National Technical University of Athens, School of rural & surveying engineerin	Sea Level Data	Research & monitoring activity	Low to Medium	
269_034_GR	-	0	34	GR	269	0	0	0	0	0	1	0	0	Physics	Municipalit y of Rodos - http://ww w.rhodes.g r/ - Chatzidiako u F. - Mayor	T, S, Ph, TDS, DO, SECCHI, sea level, meteorolo gical data - 2012	Project PREMARPO L	Medium	Cooparation: Oceanographic Center of the University of Cyprus, Cyprus University of Technology, the Municipality of Rhodes and the Regional Unit Samos.
700_001_HR	-	0	1	HR	700	1	0	0	0	0	1	0	1	Bathymetry, Geology, Chemistry, Physics, Coastal mapping	Croatian hydrograph ic Institute Zrinsko- Frankopans ka 161, 21000	Adriatic Sea: Currents, waves, sea level (more stations), T, S, Marine	Research Monitoring	Hlgh	Existing Cooperation with HCMR Researchers. Other professors how may have data as: Geraga M. mgeraga@upatras.gr - Ferentinos G. aforen@upatras.gr
700_002_HR	-	0	2	HR	700	0	0	1	0	0	1	0	0	Chemistry, Biology, Physics	Centar for marine research, Institute Rugjer Boskovic, Paliage 5, 52320	Adriatic Sea (North part): Currents, T,S, DO, Silicate, Phosphate, Nitrate,	Research Monitoring	High	Data policy
700_003_HR	-	0	3	HR	700	0	0	0	0	0	1	0	0	Physics	Andrija Mohorovičić Geophysical Institute - University of Zagreb Horvatovac	Adriatic Sea:Sea level (one permanent station) (1954-)	Research	Medium	Data policy
700_004_HR	-	0	4	HR	700	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Institute For Marine And Coastal Research - University Of Dubrovnik,	Adriatic Sea (south part): T, S, DO, Silicate, Phosphate, Nitrite, Nitrate,	Research, monitoring	Medium	Data policy, quality?
700_005_HR	-	0	5	HR	700	0	0	0	0	0	1	0	0	Physics	Croatian hydromete orological service Grič ulica 3, 10000 Zagreb, Nataša	SST, Sea state, meteo (1983 -)	Monitoring	Medium	Data policy

700_006_HR	-	0	6	HR	700	0	0	1	1	1	1	1	0	Seabed habitats, Chemistry, Biology, Physics, Human activities	Institute of oceanography and fisheries Šetalište Ivana Meštrovića 63,10000	Adriatic Sea: Currents, Waves, Sea level (more stations) (1973 -), T, S, DO,	Research Monitoring	High	Some data restricted
396_001_IE	-	0	1	IE	396	1	0	0	0	0	0	0	0	Bathymetry	Geological Survey	Raster data of seabed bathymetry (scale varies depending on region - e.g.)	National seabed mapping programme	High	Held in The Crown Estate Marine Data Exchange with MEDIN metadata; no restriction on data access
396_002_IE	Better "Geology"?	0	2	IE	396	1	0	0	0	0	0	0	0	Bathymetry	Geological Survey	Raster data of seafloor hardness, from which seafloor type may be inferred	National seabed mapping programme	High	
396_003_IE	-	0	3	IE	396	0	0	0	0	0	0	1	0	Human Activities	Geological Survey	Location of shipwrecks around the Irish coastline and waters	National seabed mapping programme	High	May already be sent to EMODnet by Geological Survey
396_004_IE	Contour lines are derived products, not sure "Bathymetry" is interested	0	4	IE	396	1	0	0	0	0	0	0	0	Bathymetry	Geological Survey	Vector contour lines generated from seabed bathymetry	National seabed mapping programme	Medium/Low	
396_005_IE	Better "Chemistry"? (lot Chemistry3?)	0	5	IE	396	0	0	1	0	0	0	0	0	Human Activities	Department of Housing, Planning, Community and Local Government	OSPAR Marine Litter Survey 2016 (4 locations)	Environmental Quality Reporting	Medium/Low	
396_006_IE	Parameters?	0	6	IE	396	0	0	1	0	0	0	0	0	Chemistry	An Taisce	Clean Coasts	Environmental Quality Reporting	Medium/Low	

396_007_IE	-	0	7	IE	396	0	0	0	0	1	0	0	Physics	Office Public Works	OPW Water Level	Operational monitoring programme	Medium	Not published on EMODnet physics portal
396_008_IE	Parameters?	0	8	IE	396	0	0	0	0	1	0	0	Physics	Commissioners of Irish Lights	Navigation Buoys	Operational monitoring programme	Medium/Low	Not published on EMODnet physics portal
396_009_IE	-	0	9	IE	396	0	0	0	1	0	0	0	Biology	Irish Whale and Dolphin Group	Distribution and abundance of Marine Mammals (Cetaceans) in Irish Waters	Operational monitoring programme	Low	Not published on EMODnet biology portal
396_010_IE	-	0	10	IE	396	0	0	1	0	0	0	0	Chemistry	Environmental Protection Agency	Radiation monitoring in the Irish Sea	Operational monitoring programme	Medium	Not published on EMODnet chemistry portal
396_011_IE	-	0	11	IE	396	0	1	0	0	0	0	0	Geology	Petroleum Affairs Division	Offshore Seafloor Geology	Interpreted exploration data from oil & gas surveys	Medium	Is Offshore Geology published as part of data on geology?
396_012_IE	-	0	12	IE	396	0	1	0	0	0	0	0	Geology	Petroleum Affairs Division	Offshore Fault	Interpreted exploration data from oil & gas surveys	Medium	
396_013_IE	-	0	13	IE	396	0	1	0	0	0	0	0	Geology	Petroleum Affairs Division	Offshore Ridge	Interpreted exploration data from oil & gas surveys	Medium	

396_014_IE	-	0	14	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Intrusive Bodies	Interpreted exploration data from oil & gas surveys	Medium	
396_015_IE	-	0	15	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Tectonic Elements	Interpreted exploration data from oil & gas surveys	Medium	
396_016_IE	-	0	16	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Seismic Survey 3D	Interpreted exploration data from oil & gas surveys	Medium	
396_017_IE	-	0	17	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Seismic Survey 2D	Interpreted exploration data from oil & gas surveys	Medium	
396_018_IE	-	0	18	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Continental Margin	COMARGE continental margins project	Medium	
396_019_IE	-	0	19	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Marine Basin		Medium	
396_020_IE	-	0	20	IE	396	0	1	0	0	0	0	0	0	Geology	Geological Survey	Earthquake Events	Data discovery on known earthquake events recorded around Ireland	Medium	

396_021_IE	-	0	21	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Oil mineral resources	Interpreted exploration data from oil & gas surveys	Medium	
396_022_IE	-	0	22	IE	396	0	1	0	0	0	0	0	0	Geology	Petroleum Affairs Division	Gas mineral resources	Interpreted exploration data from oil & gas surveys	Medium	
396_023_IE	-	0	23	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	Marine Habitats Surveys 2005-2010 (4 Bays)	Natura 2000 monitoring programme	Low	
396_024_IE	-	0	24	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	Site Specific Conservation Objectives (Marine Community Type)	Operational monitoring programme	Medium	
396_025_IE	-	0	25	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	Inventory of Coastal Lagoons	Operational monitoring programme	Medium	
396_026_IE	-	0	26	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	National Seacliff Survey 2009-2011	Operational monitoring programme	Medium	
396_027_IE	-	0	27	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	Sand Dune Monitoring Project 2011	Operational monitoring programme	Medium	

396_028_IE	-	0	28	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	National Parks and Wildlife Service	Saltmarsh Monitoring Project 2006-2008	Operational monitoring programme	Medium	
396_029_IE	Cf. comment, what does "Not visible on EMODnet chemistry portal" mean?	1	29	IE	396	0	0	1	0	0	0	0	0	Chemistry	Marine Institute	Contaminants in Biota in the Marine Environment	Environmental Quality Reporting	Medium/Low	Not visible on EMODnet chemistry portal
396_030_IE	Cf. comment: shouldn't M.I. publish its own data to EMODnet?	1	30	IE	396	0	0	1	0	0	0	0	0	Chemistry	Marine Institute	Contaminants in Water in the Marine Environment	Environmental Quality Reporting	Medium/Low	May already be sent to EMODnet via ICES (Not visible on EMODnet chemistry portal)
396_031_IE	Cf. comment: shouldn't M.I. publish its own data to EMODnet?	1	31	IE	396	0	0	1	0	0	0	0	0	Chemistry	Marine Institute	Contaminants in Sediments in the Marine Environment	Environmental Quality Reporting	Medium/Low	May already be sent to EMODnet via ICES (Not visible on EMODnet chemistry portal)
396_032_IE	Cf. comment: shouldn't M.I. publish its own data to EMODnet?	1	32	IE	396	0	0	1	0	0	0	0	0	Chemistry	Marine Institute	Shellfish Biotoxins	Environmental Quality Reporting	Medium/Low	May already be sent to EMODnet via ICES (Not visible on EMODnet chemistry portal)
396_033_IE	Cf. comment: shouldn't M.I. publish its own data to EMODnet?	1	33	IE	396	0	0	1	0	0	0	0	0	Chemistry	Marine Institute	Finfish Phytoplankton	Environmental Quality Reporting	Medium/Low	May already be sent to EMODnet via ICES (Not visible on EMODnet chemistry portal)
396_034_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	34	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Marine Institute Research Vessel survey CTD data (1999-present)	Research Activity	High	Not published on EMODnet physics portal

396_035_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	35	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Marine Institute Research Vessel underway data (1994-present)	Research Activity	High	Not published on EMODnet physics portal
396_036_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	36	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Monthly Model Means (ROMS)	Research Activity / Operational Modelling	High	Not published on EMODnet physics portal
396_037_IE	-	1	37	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Irish Weather Buoy Network	Operational monitoring programme	High	Station locations published on EMODnet physics
396_038_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	38	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Irish Wave Buoy Network	Operational monitoring programme	High	Not published on EMODnet physics portal
396_039_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	39	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Galway Bay Observatory CTD	Operational monitoring programme	High	Not published on EMODnet physics portal
396_040_IE	-	1	40	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Irish National Tide Gauge Network	Operational monitoring programme	High	Station locations published on EMODnet physics
396_041_IE	-	1	41	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Marine Institute Wave Forecast (Weather Buoy)	Research Activity / Operational Modelling	High	Station locations published on EMODnet physics

396_042_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	42	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Argo Floats	Research Activity / Operational Monitoring programme	High	Not published on EMODnet physics portal
396_043_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	43	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	East Atlantic SWAN Model	Research Activity / Operational Modelling	High	Not published on EMODnet physics portal
396_044_IE	What does "Not published on EMODnet physics portal" mean? Is it published elsewhere? (SeaDataNet?)	1	44	IE	396	0	0	0	0	0	1	0	0	Physics	Marine Institute	Monthly Model Means (Salinity)	Research Activity / Operational Modelling	High	Not published on EMODnet physics portal
396_045_IE	What does "Not published on EMODnet biology portal" mean? Is it published elsewhere?	1	45	IE	396	0	0	0	1	0	0	0	0	Biology	Marine Institute	Fisheries survey station catch numbers and weights (groundfish)	Operational monitoring programme	Medium/Low	Not published on EMODnet biology portal, but reported to ICES
396_046_IE	What does "Not published on EMODnet biology portal" mean? Is it published elsewhere?	1	46	IE	396	0	0	0	1	0	0	0	0	Biology	Marine Institute	Benthos monitoring in the marine environment	Operational monitoring programme	Low	Not published on EMODnet biology portal, reported to ICES if its part of HELCOM or OSPAR
396_047_IE	What does "Not published on EMODnet biology portal" mean? Is it published elsewhere? Better "Chemistry"?	1	47	IE	396	0	0	?	1	0	0	0	0	Biology	Marine Institute	Inshore Phytoplankton Monitoring (Repeat stations at aquaculture sites)	Operational monitoring programme	Low	Not published on EMODnet biology portal
396_048_IE	"Geology" or "Human activities"? (Depends on datatype(s))	1	48	IE	396	0	1	0	0	0	0	0	0	Geology	Marine Institute	Sand and gravel data from Irish Sea Marine Aggregates (IMAGIN) project	Interpreted exploration data from EU funded sand and gravel marine aggregate	Medium	

396_049_IE	-	1	49	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	Marine Institute	Predominant Habitat Type	MSFD monitoring & reporting programme	Medium	
396_050_IE	-	1	50	IE	396	0	0	0	0	1	0	0	0	Seabed Habitats	Marine Institute	Predominant Habitat Confidence	MSFD monitoring & reporting programme	Medium	
710_001_IL	-	0	1	IL	710	0	0	0	0	0	1	0	0	Physics	CAMERI – Coastal and Marine Engineering Research Institute (Technion - Faculty of Civil and	Collection of oceanographic data along the eastern Mediterranean shoreline.	Ingeneering design. Research activity	Medium to High	There is existing cooperation with IOLR researchers
710_002_IL	-	0	2	IL	710	0	0	0	0	0	1	0	0	Physics	Noble Energy Mediterranean LTD. <a href="http://www.nobleenergyinc.com/operation">http://www.nobleenergyinc.com/operation</a>	Observation of waves and currents on an open sea mooring near to	Ingeneering service	Low to Medium	There is existing cooperation with ISRAMAR
710_003_IL	Better "Biology"?	0	3	IL	710	0	0	1	0	0	1	0	0	Chemistry, Physics	ECOOCEAN ( <a href="http://www.ecoocean.org/">http://www.ecoocean.org/</a> ) is a non-profit organization. The organization	Episodic coastal ecological surveys in collaboration with Maritime College	Research activity and education	Medium to High	There is existing cooperation with IOLR researchers
710_004_IL	Datatypes?	0	4	IL	710	0	1	1	0	0	1	0	0	Chemistry, Physics	Leon H. Charney School of Marine Sciences ( <a href="http://marsci.haifa.ac.il/">http://marsci.haifa.ac.il/</a> ). Dr	Episodic geophysical surveys / CTD / Chemistry	Research activity and education	Medium to High	There is existing cooperation with IOLR researchers

710_005_IL	-	0	5	IL	710	0	0	0	0	0	1	0	0	Physics	Israel Ports Development & Assets Company Ltd. (IPC) Ltd. ( <a href="http://eng.israports.c">http://eng.israports.c</a> )	Observation of waves and currents in coastal area	Engineering design.	Low to Medium	There is existing cooperation with IOLR researchers
120_001_IT	-	0	1	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Chemical Sciences, University of Trieste, Via Giorgieri 1,	contaminants	Research activity	Medium to low	Personal contacts are underway
120_002_IT	-	0	2	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Geological, Environmental and Marine Sciences, University	contaminants	Research activity	Medium to low	There is existing cooperation which may facilitate data provision
120_003_IT	-	0	3	IT	120	0	0	1	0	0	0	0	0	Chemistry	Biosciences, Biotechnologies and Biopharmaceutical Department,	contaminants	Research activity	Medium to low	Part of their data have been already published
120_004_IT	-	0	4	IT	120	0	0	1	0	0	0	0	0	Chemistry	Facoltà di Bioscienze e Tecnologie Agroalimentari e Ambientali, University	contaminants	Research activity	Medium to low	Part of their data have been already published
120_005_IT	-	0	5	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Chemistry and Biology, University of Salerno, via	contaminants	Research activity	Medium to low	Part of their data have been already published
120_006_IT	-	0	6	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Veterinary Medicine and Animal Production, University of Naples,	contaminants	Research activity	Medium to low	Part of their data have been already published

120_007_IT	-	0	7	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Public Health, University "Federico II", Via Sergio Pansini n°	contaminants	Research activity	Medium to low	Part of their data have been already published
120_008_IT	-	0	8	IT	120	0	0	1	0	0	0	0	0	Chemistry	ENEA; M. Barsanti & R. Delfanti; roberta.delfanti@enea.it & Leda Pecci	radionuclides, nutrients	Research activity	Medium to low	Needs coordination with Leda Pecci
120_009_IT	-	0	9	IT	120	0	0	1	0	0	0	0	0	Chemistry	CNR Taranto; Di Leo; magda.dileo@iamc.cnr.it	contaminants	Research activity	Medium to low	Part of their data have been already published
120_010_IT	-	0	10	IT	120	0	0	1	0	0	0	0	0	Chemistry	Centro Interdipartimentale di Ricerca per le Scienze Ambientali (C.I.R.S.A.), University	contaminants	Research activity	Medium to low	Part of their data have been already published
120_011_IT	-	0	11	IT	120	0	0	1	0	0	0	0	0	Chemistry	Department of Life Sciences and Biotechnologies, University of Ferrara,	litter	Research activity	Medium to low	Part of their data have been already published
120_012_IT	-	0	12	IT	120	0	0	1	0	0	0	0	0	Chemistry	<a href="http://www.legambiente.it/mari nelitter/">http://www.legambiente.it/mari nelitter/</a> ; s.divito@legambiente.it	litter	monitoring	High	Personal contact may facilitate data provision
136_001_IT	-	0	1	IT	136	0	0	1	0	0	1	0	0	Chemistry, Physics	ENEA Marine Research Center - La Spezia, contact: leda.pecci@enea.it	Silicate, Phosphate, Nitrite, Nitrate, Ammonium, N-Tot, P-Tot, S,T	Research activity	Medium to High	High

136_002_IT	-	0	2	IT	136	0	0	0	1	0	0	0	0	Biology	The Italian National Institute for Environmental Protection and	Marine fish species	Research activity	High	High
136_003_IT	-	0	3	IT	136	0	0	1	0	0	0	0	0	Chemistry	<a href="http://www.chimica.unige.it/rubrica/152-rivaro@chimica.unige.it">http://www.chimica.unige.it/rubrica/152-rivaro@chimica.unige.it</a>	Ross Sea (Antartica) CLIMA Project dissolved oxygen and nutrients data:	Research activity	High	Low
136_004_IT	-	0	4	IT	136	0	0	0	1	0	0	0	0	Biology (Environment/Ecology)	Università degli Studi di Napoli Federico II Dipartimento di Biologia - olga.mango	phytoplankton, microalgal community	Research activity		Medium
136_005_IT	-	0	5	IT	136	0	0	0	0	0	1	0	0	Physics	<a href="http://www.isprambiente.gov.it/it/banche-dati/acque-interne-e-marino-costiere-">http://www.isprambiente.gov.it/it/banche-dati/acque-interne-e-marino-costiere-</a>	Italian marine data wave motion (1971-2004), sea level	Monitoring activity	High	Low
136_006_IT	-	0	6	IT	136	0	0	0	1	0	1	0	0	Biology, Physics	MORSea (Marine Observatory in the Ross Sea) <a href="http://morsea.uniparthenope.it/">http://morsea.uniparthenope.it/</a>	Temperature, Salinity, Sediments and Marine currents in the Ross	Research activity	High	Low
136_007_IT	-	0	7	IT	136	0	0	0	1	0	1	0	0	Biology, Physics	Area Marina Protetta di Portofino, Giorgio Fanciulli, direttore@portofinoa	Wave station, water and plankton monitoring	Monitoring activity		High
136_008_IT	-	0	8	IT	136	0	0	0	1	0	0	0	0	Biology	Marine Protected Area Pelagie Islands – Management Body Municipalit	Cetacean monitoring, seagrass meadows	Research activity		High

136_009_IT	-	0	9	IT	136	0	0	0	1	0	0	0	0	Biology	Email: mariacristina.buia@szen.it Office: Stazione Zoologica Anton	Plancton and phytoplancton	Research activity		Low
136_010_IT	-	0	10	IT	136			1						Chemistry, Alkalinity	University of Genua				via Leda Pecci
149_001_IT	-	0	1	IT	149	0	0	0	1	0	0	0	0	Biology	Università di Pavia, Dipartimento di Scienze della Terra e dell'Ambie	National marine mammal beaching database. Data relative to marine	Study of beaching events in order to determine beaching factors (biological -	Fully available to cooperation	
149_002_IT	-	0	2	IT	149	0	0	0	1	0	0	0	0	Biology	Michele Scardi - Uni of Rome Torvergata	estimated distribution posedonia oceana	biology		
251_001_IT	-	0	1	IT	251	0	1	1	1	0	1	0	0	INGV (Headquarter) - EMSO ERIC Observatory	high resolution, long-time-series collection of multiple variables across a	Internal INGV communication with Laura Beranzoli	High		not in a short time we need to start a dialog with the ERIC
251_002_IT	-	0	2	IT	251	0	0	1	0	0	1	0	0	Chemistry, Physics	ARPA (Environmental Protection Agency) - Struttutra Oceanografica Daphne	water quality parameters, nutrients, chlorophyll, temperature and	communication with Carla Ferrari	Low	I will show the benefits and explain the advantages, but not sure to succeed (Allesandra: part of the data is possibly in EMODnet through ISPRA)
251_003_IT	-	0	3	IT	251	1	1	0	0	1	0	1	1	Bathymetry, Geology, Seabed Habitats, Human activities	ISPRA - INFO-RAC / CAMP Italy Project <a href="http://www.camp-italy.org/">http://www.camp-italy.org/</a>	Coastline evolution, Beach-dune system resilience, Bathymetry	communication with Beatrice Maria Sole Giambastiani (University of Bologna)	High	R2Sonic recently mounted on their vessel André Malraux. Potential partnership to be established

2276_001_IT	-	0	1	IT	2276	0	1	0	0	0	0	0	0	Geology	Ministry of Economic Development (Directorate-general for mineral and energy)	Seismic Data	Law n. 6 of 11 January 1957	Medium to High	There is existing cooperation which will facilitate further data provision
698_001_LV	-	0	1	LV	698	0	0	0	0	1	0	0	0	Physics	Institute of Food Safety, Animal Health and Environment - "BIOR" (EDMO)	Historical time series T,S	Monitoring, Research activity	Medium	CTD, mid-90s
698_002_LV	-	0	2	LV	698	0	0	1	0	0	0	0	0	Chemistry	Latvian Environment, Geology and Meteorology Centre (EDMO 892)	Radionuclides Sr90, Cs137 in water and sediments	Monitoring	Medium to High	Historical data until 2012
698_003_LV	-	1	3	LV	698	0	0	0	1	1	0	0	0	Geology, Seabed Habitats, Biology	Latvian Institute of Aquatic Ecology (LHEI or LIAE) EDMO 698 - http://ww	Macroalgae, Zooplankton, phytoplankton, species and benthos	Monitoring, Research activity	High	Part of this data were reported to ICES and HELCOM. WHY?
698_004_LV	-	0	4	LV	698	0	0	1	1	0	0	0	0	Chemistry, Biology	Institute of Food Safety, Animal Health and Environment - "BIOR" (EDMO)	Fish, restocking of fish, Zooplankton, fish stomach content, seals and	Monitoring, Research activity	Medium to High	Part of this data were reported to ICES and HELCOM. WHY?
698_005_LV	-	0	5	LV	698	0	0	0	1	0	0	0	0	Biology	Latvian Ornithological Society (LOB), Ainars Aunins dubults@latnet.lv,	Birds in the sea (by transects and observations from coasts), birds in the	Monitoring, Research activity, projects	Medium to High	Part of this data were reported to HELCOM.
698_006_LV	-	0	6	LV	698	1	0	0	0	0	0	1	0	Bathymetry, Human activities	Maritime administration of Latvia (EDMO 4665)	High resolution survey data set, cables, pipelines, real-time traffic, old military	Monitoring, projects, commecial orders	High	When a foreign country ask to France the autorisation for collecting data in its waters, they have to send the data to Shom.

698_007_LV	-	0	7	LV	698	0	1	1	0	0	0	1	0	Geology, Chemistry, Human activities	The State Environmental Service (SES) of the Republic of Latvia	Harbour dredging and sediment dumping sites, Shipping accidents,	Monitoring, control, licensing	Low	Shipping accidents are available through HELCOM
698_008_LV	-	0	8	LV	698	0	0	1	0	0	0	0	0	Chemistry	NGO "Zemes draugi" <a href="http://www.zemesdraugi.lv">http://www.zemesdraugi.lv</a> - Janis Ulme, janis.ulme	Marine litter collected on beaches	Monitoring	High	
698_009_LV	-	0	9	LV	698	0	0	0	0	0	0	1	0	Human activities	Latvian naval forces (EDMO 893)	Military purpose areas, maps, military maps about munition	Monitoring	Low	
708_001_MT	-	0	1	MT	708	0	1	0	0	0	0	0	0	Geology	Marine Geology and Surveying Group, Dept of Geoscience	Single Channel Seismic Reflection profiles (Sea floor geomorphology)	Research activity	High	Raw data are in *.sgy and will be provided in *.tiff pictures; dataset covers 120 km from Malta Plateau -- Marco Taviani from CNR ISMAR owns the full data
708_002_MT	-	0	2	MT	708	1	0	0	0	0	0	0	0	Geology	Marine Geology and Surveying Group, Dept of Geoscience	Multibeam bathymetry	Research activity	High	Current partner
708_003_MT	-	0	3	MT	708	1	0	0	0	0	0	0	0	Geology	Marine Geology and Surveying Group, Dept of Geoscience	Multibeam backscatter	Research activity	High	Potential protected commercial data (mainly not for sharing) but we can try to convince them case by case as they send us data for safety of navigation (Mining Code). Potential difficulties to
708_004_MT	-	0	4	MT	708	0	1	0	0	0	0	0	0	Geology	Marine Geology and Surveying Group, Dept of Geoscience	Sidescan sonar	Research activity	High	raw data in *.xtf to be converted in *.geotiff; 8 km2 --- ask Timmy Gamin for further data

708_005_MT	-	0	5	MT	708	0	0	0	0	1	0	0	Physics	Water Services Corporation	Oceanographic survey in Cuminja Bay, 1996; south-western coast of Malta	Survey icw Sewage outfall, 1996	High	ascii files for CTD stations (T, C, S, dissolved O, pH), drifters at two depths (10m, 30m), currents
708_006_MT	-	0	6	MT	708	0	0	0	1	0	0	0	Biology	Environment and Resources Authority, Malta	Posidonia PREI Index, Macroalgae - CARLIT index, Phytoplankton - Chlorophyll	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, March 2012, June 2012, Sept 2012, Dec 2012
708_007_MT	-	0	7	MT	708	0	0	0	1	0	0	0	Biology	Environment and Resources Authority, Malta	Posidonia PREI Index, Macroalgae - CARLIT index, Phytoplankton - Chlorophyll	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, Benthic ; April - June 2012, Water column (phytoplankton) Oct - Nov 2012
708_008_MT	-	0	8	MT	708	0	0	0	1	0	0	0	Biology	Environment and Resources Authority, Malta	Phytoplankton assemblage	Coastal Water Monitoring	High	raw data as tables in pdf Aug, Nov, Dec 2012, Feb 2013 selected coastal locations (see map)
708_009_MT	-	0	9	MT	708	0	0	0	1	0	0	0	Biology	Environment and Resources Authority, Malta	Total marine Bacteria, fecal streptococci	Maghtab landfill monitoring	High	raw data as tables in pdf, 15 surveys between 5 Feb & 5 Mar 2003 NE coast (see map)
708_010_MT	-	0	10	MT	708	0	0	0	1	0	0	0	Biology	Ministry of Health	E. coli & Enterobacteria	Bathing Water Directive monitoring	High	raw data as Excel sheets
708_011_MT	-	0	11	MT	708	0	0	0	1	0	0	0	Biology	Enemalta	Posidonia morphological attributes	Thermal effluent monitoring survey	High	Tables in pdf files 2012-2016 (September only) at Hofra z-Zghira

708_012_MT	-	0	12	MT	708	0	0	0	1	0	0	0	0	Biology	Enemalta	Posidonia morphological attributes	Interconnector coastal site monitoring	High	Tables in pdf files 2013-2015 at Qalet Marku
708_013_MT	-	0	13	MT	708	0	0	0	1	0	0	0	0	Biology	Fisheries	Posidonia morphological attributes & PREI Index	Environment Impact Assessment	High	Tables in pdf files Jan 2016, Marsaxlokk Bay
708_014_MT	-	0	14	MT	708	0	0	0	1	0	0	0	0	Biology	MSDEC	Posidonia morphological attributes	Environment Impact Assessment	High	Tables in pdf files Summer 2011, Sikka l-Bajda
708_015_MT	-	0	15	MT	708	0	0	0	1	0	0	0	0	Biology	Fisheries	Infauna - AMBI Index	Aquaculture monitoring	High	Excel sheets, May 2014
708_016_MT	-	0	16	MT	708	0	0	0	1	0	0	0	0	Biology	Fisheries	Infauna - AMBI Index & BENTIX index	Environment Impact Assessment	High	Benthic Maps, Jan 2016
708_017_MT	-	0	17	MT	708	0	0	0	1	0	0	0	0	Biology	Biodivalue Consortium	Infauna - S, H', J Index values	Research activity	High	Excel sheets, Grand Harbour creeks, 2014
708_018_MT	-	0	18	MT	708	0	0	0	1	0	0	0	0	Biology	Fisheries	Fish stock assessments	MEDITS survey	??	Unknown

708_019_MT	-	0	19	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Salinity, Nitrate, Nitrite, Total N, Ammonium, Orthophosphates,	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, Feb 2012 - Jan 2013 (Monthly), inland water (see map)
708_020_MT	-	0	20	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Various Pollutants including TOC, Total P, Total N, Metals, Hydrocarbons, PAHs,	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf Dec 11, Jan 12, Feb 12 surface of inland waters (see map)
708_021_MT	-	0	21	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Various Pollutants including TOC, Total P, Total N, Metals, Hydrocarbons, PAHs,	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf 29th May-6th June 2013 (one sample) sediment of inland waters (see map)
708_022_MT	-	0	22	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Mercury, Hexachlorobenzene, Hexachlorobutadiene in Posidonia shoots	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf 30 May - 2 Jun 2012 (one sample) Coastal sea (see map)
708_023_MT	-	0	23	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Various Pollutants including Nitrates, Nitrites, Total P, Total N, Metals,	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, Jun 2012 - Jul 2013 (13 monthly cycles) 5m down water column
708_024_MT	-	0	24	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Various Pollutants including Nitrates, Nitrites, Total P, Total N, Metals,	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, 1st-15th August (one sample) sediment
708_025_MT	-	0	25	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Salinity, Nitrite, Nitrate, Total N, Ammonium, Orthophosphates,	Coastal Water Monitoring	High	raw data as tables in pdf Feb 2012 - Jan 2013 (monthly) selected coastal locations (see map), surface & bottom

708_026_MT	-	0	26	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Heavy metals	Magħtab landfill monitoring	High	raw data as tables in pdf, 1998-1999, Jul 2003, Dec 2003 NE coast (see map), sediments
708_027_MT	-	0	27	MT	708	0	0	1	0	0	0	0	0	Chemistry	Environment and Resources Authority, Malta	Total N, Total P, Nitrates, Ammonia N	Bathing Water Directive Study	High	raw data as tables in pdf fortnightly sampling throughout summer 2003, 2004, 2005
708_028_MT	-	0	28	MT	708	0	0	1	0	0	0	0	0	Chemistry	Biodivalue Consortium	Pollutants	Research activity	High	raw data as Excel sheets
708_029_MT	-	0	29	MT	708	0	0	1	0	0	0	0	0	Human activities	Cleansing Department	Marine litter	Day-to-day operations	??	Unknown
708_030_MT	-	0	30	MT	708	0	0	1	0	0	0	0	0	Human activities	Environment and Resources Authority, Malta	Marine litter	MEDITS trawling survey	High	raw data as Excel sheets
708_031_MT	-	?	31	MT	708	0	0	1	0	0	0	0	0	Human activities	University of Malta	Marine litter	Research activity	??	Unknown
708_032_MT	-	0	32	MT	708	0	0	0	0	0	0	0	1	Human activities	Transport Malta	Aquaculture facilities	National Records	High	Coordinates

708_033_MT	-	0	33	MT	708	0	0	0	0	0	1	0	Human activities	University of Malta	Shipping traffic	Research activity	High	Excel data, 2012-current
708_034_MT	-	0	34	MT	708	0	0	0	0	0	1	0	Human activities	University of Malta	Bunkering density	Research activity	High	Excel data, 2012-current
708_035_MT	-	0	35	MT	708	0	0	0	0	0	1	0	Human activities	Transport Malta	Cables/Pipelines	National Records	High	Maps
708_036_MT	-	0	36	MT	708	0	0	0	0	0	1	0	Physics	Environment and Resources Authority, Malta	Hydrological parameters (Temperature, Conductivity, Total Dissolved)	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf, Jun 2012 - Jul 2013 (13 monthly cycles) 5m down water column
708_037_MT	-	0	37	MT	708	0	0	0	0	0	1	0	Physics	Environment and Resources Authority, Malta	pH, Dissolved Oxygen & Oxygen saturation, Temperature, Salinity, Turbidity	National WFD Baseline Environmental Surveys	High	raw data as tables in pdf,
708_038_MT	-	0	38	MT	708	0	0	0	0	0	1	0	Physics	Environment and Resources Authority, Malta	pH, Dissolved Oxygen, Temperature, Salinity, turbidity	Coastal Water Monitoring	High	raw data as tables in pdf Feb 2012 - Jan 2013 (monthly) selected coastal locations (see map), surface & bottom
708_039_MT	-	0	39	MT	708	0	0	1	0	0	1	0	Chemistry, Physics	Environment and Resources Authority, Malta	Nutrients (Chlorophyll a, Nitrates, Phosphates), Dissolved Oxygen, Salinity,	Monitoring programme in connection with aquaculture activities	High	raw data as tables in pdf, NE coast of Malta (off St. Paul's islands). 26th June 2001, 31st July 2001, 19th Sep 2001, 17th Oct 2001, 22 Jan 2002. surface, 5m, bottom

708_040_MT	-	0	40	MT	708	0	0	1	0	0	1	0	0	Chemistry, Physics	Environment and Resources Authority, Malta	Temperature, Salinity, Chlorophyll a, Transparency, Dissolved Oxygen,	Magħtab landfill monitoring	High	raw data as tables in pdf, Jun 2003, Jan, March, May 2004 NE coast (see map)
708_041_MT	-	0	41	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	Environment and Resources Authority, Malta	Benthic maps	Spoil ground survey	High	Benthic maps NE coast of Malta
708_042_MT	-	0	42	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	AIS	Benthic maps	RICS Education Trust Survey	High	Benthic Maps, NE coast of Malta, October 2009-August 2011
708_043_MT	-	0	43	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	AIS	Benthic maps	MPA Management Study	High	Benthic Maps, 2005-2006, Filfla MPA
708_044_MT	-	0	44	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	ADI Associates	Benthic maps	Scott-Wilson report on Land Reclamation	High	Benthic Maps, 2007, SE coast
708_045_MT	-	0	45	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	AIS, ADI Associates	Benthic maps	Surveys	High	Benthic Maps, 2009-2016, Various locations
708_046_MT	-	0	46	MT	708	0	0	0	0	0	1	0	0	Seabed Habitats	University of Malta	ROV footage	Research activity	High	ROV footage, Oct 2016, Hurd's Bank

708_047_MT	-	0	47	MT	708	0	0	0	0	1	0	0	0	Seabed Habitats	Biodivalue Consortium	ROV footage	Research activity	High	ROV footage, Nov 2012, Deep waters off Filfla
708_048_MT	-	0	48	MT	708	0	0	1	0	0	0	0	0	Chemistry	TARA OCEANS Expedition (Malta)	Chlorophyll	Survey	High	4 offshore locations
708_049_MT	-	0	49	MT	708	0	0	1	0	0	1	0	0	Chemistry, Physics	TARA OCEANS Expedition (Malta)	Dissolved Oxygen, Transparency, pH, Temperature, salinity	Survey	High	4 offshore locations
2593_001_NL	-	1	1	NL	2593	0	0	0	1	0	0	0	0	Biology	Rijkswatersstaat/Deltares/Rotterdam Harbour	Benthos, Fish, Cockles	Project monitoring harbour extension Rotterdam	High	Benthos data is uncertain at the moment
2593_002_NL	-	1	2	NL	2593	0	0	1	0	0	0	0	0	Seabed habitats, Chemistry	Rijkswatersstaat/Deltares/Rotterdam Harbour	Silt in water, silt in seabed	Project monitoring harbour extension Rotterdam	High	
2593_003_NL	-	0	3	NL	2593	0	0	0	0	0	1	0	0	Physics	TNO, NL	Underwater noise, project monitoring	noise of dredging activities and ships	medium	cooperation of TNO required
2593_004_NL	-	1	4	NL	2593	1	0	0	1	0	1	0	0	Bathymetry	Rijkswatersstaat/Deltares/Rotterdam Harbour	Bathymetry of sand pit & Benthos data	Project monitoring harbour extension Rotterdam	High	Current partner (own ressources but few surveys and not widespread)

2593_005_NL	-	1	5	NL	2593	1	0	0	1	0	1	0	0	Bathymetry	Rijkswaterstaat/Deltar	morphology/detailed bathymetry wind park area	Monitoring and evaluation programme wind park	High	Possible collaborative relationship (not own resources and few surveys)
2593_006_NL	-	1	6	NL	2593	0	0	0	1	0	0	0	0	Biology	Rijkswaterstaat/Deltar	Birds, Harbour porpoises, Fish larvae	Short list research for wind park licensing	High	
2593_007_NL	-	1	7	NL	2593	0	0	0	1	0	0	0	0	Biology	Rijkswaterstaat/Deltar	Fish, Birds, Epibenthos, bivalves, Bird and Seal tracks	Monitoring and evaluation programme wind park	High	
2593_008_NL	-	1	8	NL	2593	0	0	0	1	0	0	0	0	Biology	IMARES	Fish surveys	Aggregated data are submitted to ICES and may be available via ICES		
2593_009_NL	-	1	9	NL	2593	0	1	0	0	1	0	0	0	Geology, Seabed Habitats	TNO-RGD	Seabed composition North Sea	Dutch EEZ		
2593_010_NL	-	1	10	NL	2593	0	0	1	0	0	1	1	0	Chemistry, Physics, Human activities	Rijkswaterstaat	Litter, underwater noise, deposition	Data from monitoring activities for OSPAR ODIMS		
2593_011_NL	-	1	11	NL	2593	1	0	0	0	0	0	0	0	Bathymetry	Rijkswaterstaat	B&O Kustlijnzorg	Monitoring data for coastline resilience		

2593_012_NL	-	1	12	NL	2593	1	0	0	0	0	1	0	0	Bathymetry, Physics	Rijkswaters taat, Research groups and institutes	Zandmotor data	Data from Zandmotor project for coastal defence		
2593_013_NL	-	1	13	NL	2593	1	1	0	0	1	1	0	0	Bathymetry, Physics, Geology, Seabed Habitats	Rijkswaters taat/Deltar es/Rotterdam Harbour	CTD, Secchi, Sediment, Waterdept h	Project Mainport development Rotterdam (PMR)		
2593_014_NL	-	1	14	NL	2593	1	0	0	0	0	1	0	0	Bathymetry, Physics	Rijkswaters taat	Kustgenese , Coastal Genesis	Coastal defence		
2593_015_NL	-	1	15	NL	2593	1	0	0	1	1	1	1	0	Bathymetry, Biology, Physics, Seabed Habitats, Human activities	Rijkswaters taat, Research groups and institutes	Ecologisch gericht suppleren	Ecosystem dynamics and influence of human activities		
612_001_NO	-	1	1	NO	612	0	0	0	0	0	1	0	0	Physics	Xylem Analytics/A anderaa <a href="http://www.aanderaa.com/">http://www.aanderaa.com/</a> Inger M. Graves,	Coastal buoy in Port of Bergen, Norway and Koljö fjord, Sweden	Monitoring activity	Medium	Positive to share data
612_002_NO	-	2	2	NO	612	0	0	0	0	0	1	0	0	Physics	Petroleum Geo- Services (PGS) <a href="http://www.pgs.com">www.pgs.com</a> Magnus Christiansen	CTD data from last 10 years. Barents/Norwegian/North Sea	Oil/gas/energy activities	Medium	Positive to share data
612_003_NO	-	3	3	NO	612	0	0	0	0	0	1	0	0	Physics	Norwegian Food Safety Authority <a href="http://www.mattilsynet.no">www.mattilsynet.no</a>	Temperature at 3 m depth, ca 800 sites along the Norwegian coast. 2005-2011	Aquaculture, monitoring activities	High	Positive to share data

612_004_NO	-		4	4	NO	612	0	0	0	0	0	1	0	0	Physics	Navy/MET OC	CTD data from the Norwegian Sea, Barents Sea, North Atlantic, Mediterranean	Navy activity	Low	Restricted data
612_005_NO	-		5	5	NO	612	0	0	1	0	0	1	0		Chemistry, Physics	Uni Research http://uni.no/en/ Svein Østerhus, Svein.Osterhus@uib.n	CTD, ADCP and moorings data	Research, monitoring	High	Data sets delivered in the NMDC project
612_006_NO	-		6	6	NO	612	0	0	0	1	0	1	0		Biology, Physics	Nord University http://www.nord.no/en Morten Krogstad, Morten.Kro	CTD, Fish, Plankton, Sea urchins	Research, monitoring	High	Data sets delivered in the NMDC project
612_007_NO	-		7	7	NO	612	0	0	1	1	0	1	0		Chemistry, Biology, Physics	Partners in the Norwegian infrastructure for marine data (NMDC)	Data sets delivered in the NMDC project	Research, monitoring	Medium to High	We have contacted all partners, only 2 replies so far. Most of the data will probably be freely available and can be shared with EMODnet.
590_001_PT	-		0	1	PT	590	0	0	0	0	0	0	1	0	Human Activities	Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos (DGRM) -	Aquaculture, fishing licensing and statistics, Shipping Routes and navigation	Monitoring activity by Public Authority	Medium	The actual relations and cooperation might facilitate data providing process
590_002_PT	-		0	2	PT	590	0	0	0	0	0	0	1	1	Human Activities, Coastal Mapping	Direção-Geral de Política do Mar (DGRM) - http://www.dgpm.mam.gov.pt/	Licensing the ocean activities and statistics, aquaculture	Monitoring activity by Public Authority	Medium	The actual relations and cooperation might facilitate data providing process

590_004_PT	-	0	4	PT	590	1	0	0	1	1	0	0	0	Bathymetry, Seabed Habitats, Biology	Estrutura de Missão para a Extensão da Plataforma Continental (EMEPC) - <a href="https://www.emepc.pt/en/">https://www.emepc.pt/en/</a>	Biology, bathymetric information about continental shelf	Public Authority	Medium	Seafloor maps (data sharing between Olex users): <a href="http://www.olex.no/dybdekart_e.html#deling">http://www.olex.no/dybdekart_e.html#deling</a> May be profitable (magic Instinct, reseller for France)? Solution: Share data with Olex
590_005_PT	-	0	5	PT	590	1	0	0	0	0	0	0	0	Bathymetry	Direção-Geral do Território (DGT) - <a href="http://www.dgterritorio.pt/">http://www.dgterritorio.pt/</a>	Bathymetric LIDAR	Public Authority	Medium	Already identified by EMODnet Bathymetry but not yet partner
590_006_PT	-	0	6	PT	590	0	0	1	0	0	0	0	0	Chemistry	Instituto Português do Mar e Atmosfera (IPMA) - <a href="https://www.ipma.pt/en/">https://www.ipma.pt/en/</a>	Metal, biomarkers	Research Activity, Public Authority	Low to Medium	The actual relations and cooperation might facilitate data providing process
590_007_PT	-	0	7	PT	590	1	1	0	0	0	0	0	0	Bathymetry, Geology	Instituto Português do Mar e Atmosfera (IPMA) - <a href="https://www.ipma.pt/en/">https://www.ipma.pt/en/</a>	Seismic, magnetic, bathymetry	Research Activity, Public Authority	Low to Medium	Potential sharing restrictions but we can try to convince them case by case
590_008_PT	-	0	8	PT	590	1	0	0	0	0	1	0	0	Physics	Instituto Português do Mar e Atmosfera (IPMA) - <a href="https://www.ipma.pt/en/">https://www.ipma.pt/en/</a>	Seismic, magnetic, bathymetry	Research Activity, Public Authority	Low to Medium	The actual relations and cooperation might facilitate data providing process
590_009_PT	-	0	9	PT	590	0	0	0	1	1	0	0	0	Seabed habitats, Biology	Instituto Português do Mar e Atmosfera (IPMA) - <a href="https://www.ipma.pt/en/">https://www.ipma.pt/en/</a>	Species spacial distribution	Research Activity, Public Authority	Low to Medium	The actual relations and cooperation might facilitate data providing process

590_010_PT	-	0	10	PT	590	0	0	1	0	0	0	1	0	Chemistry, Human Activities	Ag�ncia Portuguesa do Ambiente (APA) - http://www.apambiente.pt/inde	Human activities and their environmental impact	Research Activity, Public Authority	Low to Medium	The actual relations and cooperation might facilitate data providing process
590_011_PT	-	0	11	PT	590	0	0	0	0	0	1	0	0	Physics	University of Lisbon - Physics : PhD Alvaro Peliz - https://ciencias.ulisboa.pt/en/pe	Circulation, meteocean timeseries	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_012_PT	-	0	12	PT	590	0	1	0	0	0	0	0	0	Geology	University of Lisbon - PhD Rui Taborda - rtaborda@fc.ul.pt / PhD Jo�o Cascalho -	Sediment transport, historic variations, coastal erosion	Research Activity	Medium	The research cooperation might facilitate data providing process
590_013_PT	-	0	13	PT	590	0	0	1	1	1	0	0	0	Seabed Habitats,	University of Lisbon -	Species distribution	Research Activity	Low to Medium	The research cooperation might facilitate data
590_014_PT	-	0	14	PT	590	0	0	0	0	0	1	0	0	Physics	University of Algarve - PhD Paulo Relvas - http://w3.ualg.pt/~prelvas/- prelvas@u	Circulation, meteocean timeseries	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_015_PT	-	0	15	PT	590	0	0	0	0	0	1	0	0	Physics	University of Aveiro, Center for Environmental and Marine Studies (CESAM) -	Circulation, ocean modelling	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_016_PT	-	0	16	PT	590	0	0	1	0	0	0	0	0	Chemistry	University of Algarve - PhD Alexandra Cravo - https://fct.ualg.pt/pt/content/fic	Nitrite, Nitrate, Ammonium, Zn, Cd, Pb, nutrients, chlorophyl	Research Activity	Low to Medium	The research cooperation might facilitate data providing process

590_017_PT	-	0	17	PT	590	1	1	0	0	0	0	0	0	Geology	University of Aveiro, Center for Environmental and Marine Studies (CESAM) -	High-Resolution seismic and bathymetric data	Research Activity	Low to Medium	Potential sharing restrictions but we can try to convince them case by case (surveys usually realized by subcontracting)
590_018_PT	-	0	18	PT	590	0	0	0	1	1	0	0	0	Seabed Habitats, Biology	University of Aveiro, Center for Environmental and Marine Studies (CESAM) -	Benthic and suprabenthic ecology, estuarine biodiversity	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_019_PT	-	0	19	PT	590	0	0	0	1	1	0	0	0	Seabed Habitats, Biology	University of Açores - Departamento de Oceanografia e Pescas (DOP) - <a href="http://ww">http://ww</a>	Seabed habitats, species spatial distribution, seamount habitats	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_020_PT	-	0	20	PT	590	0	0	0	1	0	0	0	1	Biology, Coastal Mapping	Laboratório Nacional de Energia e Geologia (LNEG) - PhD Luis Rebelo - <a href="mailto:luis.rebelo">luis.rebelo</a>	marine activities, mapping the spatial distribution of marine ressources	Research Activity and Public Authority	Medium	The research cooperation might facilitate data providing process
590_021_PT	-	0	21	PT	590	0	1	0	0	0	0	0	0	Geology	Laboratório Nacional de Engenharia Civil (LNEC) - PhD Paula Freire - <a href="mailto:p.freire@ln">p.freire@ln</a>	multi-temporal coastline evolution	Research Activity and Public Authority	Medium	The research cooperation might facilitate data providing process
590_022_PT	-	0	22	PT	590	0	0	0	0	0	1	0	0	Physics	Observatório Oceânico da Madeira - PhD Rui Caldeira - <a href="mailto:director@ocean.arditi.pt">director@ocean.arditi.pt</a>	ocean circulation	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_023_PT	-	0	23	PT	590	0	0	1	1	1	0	0	0	Seabed Habitats, Chemistry, Biology	University of Evora - Laboratório de Ciências do Mar (CIEMAR) - <a href="http://ww">http://ww</a>	Species spacial distribution and mapping	Research Activity	Low to Medium	The research cooperation might facilitate data providing process

590_024_PT	-	0	24	PT	590	0	0	1	1	1	0	0	0	Seabed Habitats, Chemistry, Biology	Departamento de Ciências e Engenharia do Ambiente da Faculdade	Human activities and their environmental impact	Research Activity	Low to Medium	The research cooperation might facilitate data providing process
590_025_PT	-	0	25	PT	590	0	0	0	0	0	0	1	0	Human Activities	Autoridade Marítima Nacional (AMN) - <a href="http://www.amn.pt/Paginas/Ho">http://www.amn.pt/Paginas/Ho</a> mepage.as	Human activities and statistics	Public Authority	Medium	The actual relations and cooperation might facilitate data providing process
697_001_RO	-	0	1	RO	697	0	0	0	0	0	0	1	0	Human Activities	National Institute for Marine Research and Development alina_daiyan	Natura 2000 , Nationally Designated areas Fish catches Other	Monitoring , Research activity, Studies in the framework of NIMRD national	High	NIMRD is not involved in EMODNET Human Activity but will share data
697_002_RO	-	0	2	RO	697	0	0	0	0	0	1	0	0	Physics	National Institute for Marine Research and Development	T, S data series since 1982 / Coastal station	Monitoring	High	NIMRD is not involved in EMODNET Physics but will share data, should go to SDC
697_003_RO	-	0	3	RO	697	0	0	0	1	0	0	0	0	Biology	NGO Mare Nostrum mihaela_candea@marenostrum.ro	Cetaceans (dolphins) - standings, bycatches and sightings Data from 2001 -	Monitoring , research activities	High	Will share data
697_004_RO	-	0	4	RO	697	0	0	1	0	0	0	0	0	Chemistry	NGO Mare Nostrum mihaela_candea@marenostrum.ro	Marine litter on beaches data from 1999 to present	Own monitoring, Research activity	High	Will share data
697_005_RO	-	0	5	RO	697	0	0	0	0	0	1	0	0	Physics	Maritime Hydrographic Directorate	T, S, currents	research activities	Medium	Willing to share data, data must be formated and standardized

681_001_RU	-	1	1	RU	681	0	0	1	0	0	1	0	0	Chemistry, Physics	RIHMI-WDC - http://meteo.ru/nodc Alexander Mikheev - amiheev@meteo.ru	T,S, O2, Ph, Silicate, Phosphate, Nitrite, Nitrate, Ammonium - Historical research	WDC-B site, http://meteo.ru/mcd/en_Cruises_Data.html	High	Format - NetCdf
681_002_RU	"Atmosphere" isn't an EMODnet theme	1	2	RU	681	0	0	0	0	0	1	0	0	Atmosphere	RIHMI-WDC - http://meteo.ru/nodc Natalia Viazilova - nav@meteo.ru	Latitude and Longitude of cyclones centres, date, max wind velocity -	Research activity, Unified system of information for World Ocean (ESIMO),	High	Format - ODV
681_003_RU	Better "Physics"?	?	3	RU	681	0	0	0	0	0	0	1	0	Human activities	Roshydromet - http://www.meteorf.ru - Elena Efimova - e.efimova@meteofr.	Hazardous weather events and analyses. Storm warnings for the last 24 hours,	Monitoring , Ocean Data Portal (ODP), http://portal.oceandataportal.net /dataview/	Low	Format - NetCdf
681_004_RU	-	?	4	RU	681	0	0	0	0	0	1	0	0	Physics	Roshydromet - http://www.meteorf.ru - Elena Efimova - e.efimova@meteofr.	T,S - Atlantic ocean - real-time data for temperature and salinity	WDC-B site, http://meteo.ru/mcd/en_Tesac.htm	Medium	Format - ODV
681_005_RU	-	1	5	RU	681	0	0	1	0	0	1	0	0	Chemistry, Physics	RIHMI-WDC - http://meteo.ru/nodc Alexander Mikheev - amiheev@meteo.ru	T,S, O2, Ph, Silicate, Phosphate, Nitrite, Nitrate, Ammonium - Atlantic ocean -	Unified system of information for World Ocean (ESIMO), http://esimo.ru/datavi	High	Format - NetCdf, should go to SDC
681_006_RU	-	?	6	RU	681	0	0	0	0	0	1	0	0	Physics	Roshydromet - http://www.meteorf.ru - Elena Efimova - e.efimova@meteofr.	Sea level from the Russian stations of the GLOSS - times series for 9 coastal	WDC-B site, http://meteo.ru/mcd/en_Gloss.htm	Medium	Format - NetCdf
681_007_RU	-	?	7	RU	681	0	0	0	0	0	1	0	0	Physics	Roshydromet - http://www.meteorf.ru - Elena Efimova - e.efimova@meteofr.	Climatic data - monthly mean, minimum and maximum wave	WDC-B site, http://meteo.ru/mcd/en_BarentsSea.html	Medium	Format - NetCdf

681_008_RU	-	?	8	RU	681	0	0	0	0	0	1	0	0	Physics	Roshydrom et - http://www.meteorf.ru - Elena Efimova - e.efimova@meteorf.	Climatic data - Monthly mean, minimum and maximum wave	WDC-B site, http://meteo.ru/mcd/en_BlackSea_coastal.html	Medium	Format - NetCdf
681_009_RU	-	?	9	RU	681	0	0	0	0	0	1	0	0	Physics	Roshydrom et - http://www.meteorf.ru - Elena Efimova - e.efimova@meteorf.	Climatic data - Monthly mean, minimum and maximum wave	WDC-B site, http://meteo.ru/mcd/en_BlackSea.html	Medium	Format - NetCdf
681_010_RU	-	?	10	RU	681	0	0	0	0	0	1	0	0	Physics	Hydrometeor of Russia - http://meteoinfo.ru - Alexander Zelenko - Zelenko@hydrocentre	The forecast of wind wave for World ocean from 00:00 (RU_Hydro metcentre	Unified system of information for World Ocean (ESIMO), http://esimo.ru/datavi	Low	Format - NetCdf, volume = 0.5 Gbite
685_001_RU	-	0	1	RU	685	0	0	1	0	0	1	0	0	Chemistry, Physics	Aqualog Ltd - http://www.aqualog.pro - Dr A. Ostrovskiy osasha@aqualog.pro	T,S, Silicate, Phosphate, Nitrite, Nitrate, Ammonium, DO - Black Sea, (2008-	Research activity	Medium to High	There is existing cooperation which will facilitate further data provision
685_002_RU	-	0	2	RU	685	0	0	1	0	0	1	0	0	Chemistry, Physics	ESIC MIPT - https://www.mipt.ru - Dr. Sergey Shchuka - s_shchuka@ocean.ru	T,S, DO, PH - Baltic Sea, (2003-2016)	Research activity	Medium to High	
685_003_RU	-	?	3	RU	685	0	0	1	0	0	0	0	0	Chemistry	Southern branch SIO RAS (SB SIO RAS) http://www.ocean.ru /content/view/170/10	PO4-P, TP, NO3-N, NO2-N, NH4-N, TN, Si, BOD5, O2, H2S, pH, Total alkalinity,	Research, Monitoring activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed.
685_004_RU	-	0	4	RU	685	0	0	1	0	0	0	0	0	Chemistry	State Oceanographic Institute (SOI) http://oceanoigraphy.ru	Nutrients, Heavy metals	Research, Monitoring activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed.

685_005_RU	-	0	5	RU	685	0	0	1	0	0	0	0	0	Chemistry	HPO "Taiphun" <a href="http://www.rpatyphoon.ru">http://www.rpatyphoon.ru</a>	Trace metals, organic pollutants	Research activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed.
685_006_RU	-	0	6	RU	685	0	0	1	0	0	0	0	0	Chemistry	AO "Ugmorgeologiya " <a href="http://www.ymg.ru/rus">http://www.ymg.ru/rus</a>	Nutrients, Trace metals, organic pollutants	Monitoring activity	Medium to High	The data are split between various public bodies but can be accessed
685_007_RU	-	0	7	RU	685	0	0	1	0	0	0	0	0	Chemistry	Hydrochemical Institute Гидрохимический институт, ГХИ <a href="http://gidr">http://gidr</a>	Nutrients, Trace metals, organic pollutants	Research, Monitoring activity	High	The data are split between various public bodies but can be accessed
685_008_RU	-	0	8	RU	685	0	0	1	0	0	0	0	0	Chemistry	(Азовский научно-исследовательский институт рыбного хозяйства) (АзНИРХ)	Nutrients, Trace metals, organic pollutants, others	Research, Monitoring activity	High	The data are split between various public bodies but can be accessed
685_009_RU	-	0	9	RU	685	0	0	1	0	0	0	0	0	Chemistry	Southern Scientific Center of the RAS (ЮНЦ РАН) <a href="http://www.ssc-ras.ru">http://www.ssc-ras.ru</a>	Nutrients, Trace metals, organic pollutants, others	Research, Monitoring activity	Medium to High	The data are split between various public bodies but can be accessed
685_010_RU	-	0	10	RU	685	0	0	1	0	0	0	0	0	Chemistry	Kuban State University <a href="https://kubsu.ru">https://kubsu.ru</a>	Nutrients, Trace metals, organic pollutants, others	Research	Medium to low	
685_011_RU	-	0	11	RU	685	0	0	1	0	0	0	0	0	Chemistry	FGBU Chernomor-Azov Directorate for Technical Supervision of the Sea	Nutrients, Trace metals, organic pollutants, others	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed

685_012_RU	-	0	12	RU	685	0	0	1	0	0	0	0	0	Chemistry	FGBU "Special Centre Gydrometeorology and environment monitoring"	Nutrients, Trace metals, others	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed
685_013_RU	-	0	13	RU	685	0	0	1	0	0	0	0	0	Chemistry	Hydrometeorological bureau(Гидрометеорологиче	Nutrients, others	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed
685_014_RU	-	0	14	RU	685	0	0	1	0	0	0	0	0	Chemistry	Centre Of lab analyses and	Nutrients, Trace metals, organic	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed
685_015_RU	-	0	15	RU	685	0	0	1	0	0	0	0	0	Chemistry	Novorossiysky aducation and research marine biological centre,	Nutrients, Trace metals, organic pollutants, others	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed
685_016_RU	-	0	16	RU	685	0	0	1	0	0	0	0	0	Chemistry	Kuban Basin Water Administration	Nutrients, Trace metals, organic pollutants, others	Monitoring activity	Medium to low	The data are split between various public bodies but can be accessed
545_001_SE	-	0	1	SE	545	0	0	0	0	0	1	0	0	Bathymetry	MMT	Multibeam	Commerical data	Low	Multibeam data for different purposes
545_002_SE	-	0	2	SE	545	1	0	0	0	0	0	0	0	Bathymetry	SJÖVE - SMA	Bathymetry	Restricted data	Low	Data free access: numerous possibilities detailed on <a href="https://www.ngdc.noaa.gov/access/services.html">https://www.ngdc.noaa.gov/access/services.html</a> . For bathymetry: <a href="https://maps.ngdc.noaa.gov/viewers/bathymetry/">https://maps.ngdc.noaa.gov/viewers/bathymetry/</a>

545_003_SE	-	0	3	SE	545	0	0	1	0	0	0	0	0	Chemistry	Nuclear plants	Phy/Chem & fish		Low	No contact has been made. Don't know if they have data.
545_004_SE	-	0	4	SE	545	0	0	1	0	0	0	0	0	Chemistry	Hall Sverige Rent	Litter	Project	High	
545_005_SE	-	0	5	SE	545	0	0	1	0	0	0	0	0	Chemistry	Holmens pappersbruk	Phys/Chem & Haz substances in the Baltic	Commercial data	High	
545_006_SE	Better "Physics"?	0	6	SE	545	0	0	1	0	0	0	0	0	Chemistry	SLU, Miljöanallys	River discharge	Programme	High	Portal for download: <a href="http://miljodata.slu.se/mvm/">http://miljodata.slu.se/mvm/</a> Only SE data.
545_007_SE	Data types?	0	7	SE	545	0	0	1	0	0	0	0	0	Chemistry	Environmental court	Harbours etc		Low	
545_008_SE	Data types?	0	8	SE	545	0	0	1	0	0	0	0	0	Chemistry	UU, Anna Rurgersson	2009. Ostergarn field station.		High	Few data?
545_009_SE	Data types?	0	9	SE	545	0	0	1	0	0	0	0	0	Chemistry	Leipniz Institute Warnmunde	Kalix	Research data	Low	

545_010_SE	Data types?	0	10	SE	545	0	0	0	0	0	1	0	0	Physics	SJÖVE - SMA	sealevel		High	Recently cooperating with SMHI in sea level data
545_011_SE	Data types?	0	11	SE	545	0	0	0	0	0	1	0	0	Physics	FM - armed forces			Low	Restricted.
545_012_SE	-	0	12	SE	545	0	0	0	0	0	1	0	0	Physics	MMT	Sound velocity and CTD		High	
545_013_SE	Data types?	0	13	SE	545	0	0	0	0	1	0	0	0	Biology	Regional data			Low	No information about data available
545_014_SE	-	0	14	SE	545	0	0	0	1	0	0	0	0	Biology	GU, LarsForlin, NRM, Anders Bignert.	Contaminants in eelpout	BALCOFISH project	Medium	No contact has been made and if data is available other national data centre is responsible.
545_015_SE	-	0	15	SE	545	0	0	0	1	0	0	0	0	Biology	PAG Miljöunder sökningar	Video mapping of the seafloor	Project	High	No contact has been made but a well known data provider that should be able to provide data
545_016_SE	Also "Chemistry"?	0	16	SE	545	0	0	0	1	0	0	0	0	Biology	SHARK	HARBOURS EAL, GREYSEAL, RINGEDSEA L, CHLOROPHYLL, EPIBENTHO	Programme	High	All datasets that are available to harvest from SHARKdata. Not in DWC-archive formate yet

545_017_SE	If "Benthos" then "Biology"?	0	17	SE	545	0	0	0	0	1	0	0	0	Geology	SMHI, UMSC,SUSE, KMRS	Benthos data by grab or core	Programme	Low	No contact has been made and if data is available other national data centre is responsible.
545_018_SE	-	0	18	SE	545	0	1	0	0	0	0	0	0	Geology	MMT	Seismic data? Fe-Mn crusts	Commerical data	Low	
545_020_SE	-	0	20	SE	545	0	0	0	0	0	0	1	0	Human Activities	SJÖVE	Emissions, fartygstrafik real time, shipping accidents		Low	Contact has been made, but no answer yet
545_021_SE	Check if data type is relevant	1	21	SE	545	0	0	0	0	0	0	1	0	Human Activities	SMHI	Emissions	Programme	None	
545_022_SE	Data types?	0	22	SE	545	0	0	0	0	0	0	1	0	Human Activities	?	Aquaculture farms.	Commerical data	Low	No contact has been made
545_023_SE	-	0	23	SE	545	0	0	0	0	1	0	0	0	Seabed habitats	County Administrative Board of Västra Götaland	Satelite data on Zostera marina beds	Project	Medium	Contact has been made to data provider if data is available
120_012_SI	-	0	12	SI	120	0	0	1	0	0	0	0	0	Chemistry	DeFishGear ; Project Coordinator: Andrej Kržan; andrej.krzan@ki.si	litter	Research activity	Medium to low	In synergy with Branko Cermeli

1229_001_SI	-	0	1	SI	1229	0	0	1	0	0	0	0	0	Chemistry	<a href="http://www.arso.gov.si/">Slovenian Environmental Agency</a>	T,S, Silicate, Phosphate, Nitrite, Nitrate, Ammonium, DO	Research, Monitoring activity	Medium to High	
1229_002_SI	-	0	2	SI	1229	1	0	0	0	0	0	0	0	Bathymetry	Geodetic Institute of Slovenia <a href="http://www.gis.si/en">http://www.gis.si/en</a>	bathymetry, coastal mapping	Research activity, monitoring activity	medium to low	Bathymetric data is available (free access) on an ftp server ( <a href="ftp://daufin.dt.insu.cnrs.fr/">ftp://daufin.dt.insu.cnrs.fr/</a> ) Main obstacles: - self delivery on Data Ingestion portal;
1229_003_SI	-	0	3	SI	1229	0	0	0	0	0	1	0	0	Human Activities	Fisheries Research Institute of Slovenia <a href="https://www.zzrs.si/en/index.php">https://www.zzrs.si/en/index.php</a>	Socio-economic Data on Marine Fisheries	Monitoring activity	Medium to High	The data are split between various public bodies but can be accessed [Fish catches]
1229_004_SI	-	1	4	SI	1229	0	0	0	0	1	0	0	0	Seabed habitats, Biology	<a href="http://www.nib.si/en/">National Institute of Biology</a>	Seabed Habitats areas in the slovenian territorial sea	Research activity	medium to high	habitats are not georeferenced yet. The georeferencing is in progress.
1229_005_SI	-	0	5	SI	1229	0	0	1	0	0	0	0	0	Chemistry	Institue for Water of the Republic of Slovenia <a href="http://defis.hgear.izvrs.si/defishge">http://defis.hgear.izvrs.si/defishge</a>	Marine litter - 2014_2016	DeFishGear project activity	High	The data and informations are reported to the EEA
1229_006_SI	-	0	6	SI	1229	0	1	0	0	0	0	0	0	Geology	<a href="http://www.geo-zs.si/index.php/en/">Geological Survey of Slovenia</a>	Sedimentological data, activity drills, from 1990 to 2000	Research activity	Medium	Geological Survey of Slovenia is partner in EMODNET Geology. They will very likely contribute these data to EMODNET as partners. In case they don't we were promised to do it.
1229_007_SI	-	0	7	SI	1229	0	0	0	0	0	0	1	0	Human activities	Slovenian Environment Agency <a href="http://www.arso.gov.si/">http://www.arso.gov.si/</a>	Aquaculture	Monitoring activity	high	the data are already on the Slovenian Geoportal <a href="http://gis.arso.gov.si/wfs_web/faces/WFSLayersList.jspx">http://gis.arso.gov.si/wfs_web/faces/WFSLayersList.jspx</a> [Mariculture, Shellfish production]

1229_008_SI	-	0	8	SI	1229	0	0	0	0	0	1	0	Human activities	Port of Koper <a href="https://luka-kp.si/slo/novice/single/korak-blizje-k">https://luka-kp.si/slo/novice/single/korak-blizje-k</a>	dredged areas, dredged material amount	maintenance dredging	medium, high	[Dredging]
1229_010_SI	-	0	10	SI	1229	0	0	0	0	0	1	0	Human activities	the Institute for the Protection of Cultural Heritage of Slovenia <a href="http://www">http://www</a>	Ship Wrecks, Submerged Archaeology and Landscapes	Research activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed. [Cultural heritage]
1229_011_SI	-	0	11	SI	1229	0	0	0	0	0	1	0	Human activities	Statistics of transhipment <a href="https://luka-kp.si/slo/311">https://luka-kp.si/slo/311</a>	Maritime cargo throughput in tonnes	Monitoring activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed. [Main Ports]
1229_012_SI	-	0	12	SI	1229	0	0	0	0	0	1	0	Human activities	Statistics of passengers, <a href="https://luka-kp.si/eng/terminals/single/cruise-terminal-">https://luka-kp.si/eng/terminals/single/cruise-terminal-</a>	Number of vessels and passengers, Schedule of cruise vessel calls	Monitoring activity	High	Contacts with the responsible experts have been established and the will to data exchange has been confirmed. [Main Ports]
280_001_SP	Also "Human activities"?	0	1	SP	280	1	1	0	0	0	1	0	Geology	University of Vigo, Marine Geoscience Department, Director Marta Pérez,marl	coastal mapping, human activities	Research and monitoring activities	Medium to High	Femern A/S is involved in an ongoing legal process in Germany. Some data may not be released until the process is finished
280_002_SP	-	?	2	SP	280	0	0	0	1	1	0	0	Seabed habitats, Biology	Insituto de Ciencias del Mar, CSIC-ICM, Renewable Marine Resources-Marine	Mega fauna (crustaceans, mollusks,..), marine litter	Research and monitoring activities	Medium to High	Existing Cooperation with ICM-CSIC Researchers
280_003_SP	Also "Bathymetry"?	0	3	SP	280	1	1	0	0	0	0	0	Geology	SEM: ESGEMAR, <a href="http://www.esgemar.com/">http://www.esgemar.com/</a> ; esgemar@esgemar.com; Director	Geological maps, bathymetry	Research activity	Medium	The data is currently held at the Danish consultancy company Rambøll. We have contacted them, but are still pending an answer.

280_004_SP	-	0	4	SP	280	0	1	0	1	1	0	0	0	Geology, Biology	SUBMON, http://www.submon.org/es; Carla Alvarez Chicote, Project	Seabed habitats, phanerogams, monitoring, seafloor mapping	Research and monitoring activities	Low	Marine enviromental consulting
280_005_SP	Also "Bathymetry"?	0	5	SP	280	1	1	0	0	0	0	0	0	Geology	Instituto Andaluz de Ciencias e la Tierra, CSIC-IACT; vicedirector Jesús Galindo-	Geological mapping, bathymetry	Research	High	Femern A/S is involved in an ongoing legal process in Germany. Some data may not be released until the process is finished - This could be a joint DK/DE work
280_006_SP	-	0	6	SP	280	0	0	0	0	0	1	0	0	Physics	University of Malaga, Jesús García La Fuente, jmgarcial@uma.es, Responsible	Water temperature, water salinity, currents	Research and monitoring activities	High	Hisotrical data in the Strait of Gibraltar. Internal waves
280_007_SP	-	0	7	SP	280	0	0	0	0	0	1	0	0	Physics	University of Cadiz, Marine Science Faculty, Oscar Álvarez, oscar.alvar	Water temperature, water salinity, currents	Research and monitoring activities	High	Hisotrical data in the Strait of Gibraltar, Alboran Sea, Gulf of Cádiz
280_008_SP	-	0	8	SP	280	1	1	0	0	0	0	0	0	Bathymetry, Geology	SEM: IGEOTEST, Technical and R&D Manager ; Norma Pérez, norma@ige	Geological mapping, bathymtry, geothecnics	Consulting, research projects, and thetechnical development	Medium to high	The data is currently held at the Danish consultancy company Rambøll. We have contacted them, but are still pending an answer.
353_001_SP	-	0	1	SP	353	1	0	0	0	0	0	0	0	Bathymetry	General Secretariate of Fisheries (MAGRAMA)	Bathymetry (multibeam)		Low/Medium	There is partial cooperation which will facilitate possible data provision
353_002_SP	-	0	2	SP	353	0	1	0	0	0	0	0	0	Geology	General Secretariate of Fisheries (MAGRAMA)	Seabed samples		Low/Medium	First contacts made

353_003_SP	-	0	3	SP	353	0 0 0 0 0 1 0 0	Physics	INTECMAR (Instituto Tecnológico o para el control del Medio Ambiente en Galicia)	CTD Profiles	Medium	First contacts made
353_004_SP	-	0	4	SP	353	0 0 0 0 0 1 0 0	Physics	SASEMAR/ AEMET. Vessel "Esperanza	Meteo Underway Data. Conected del Mar"	Unknown	
353_005_SP	-	0	5	SP	353	0 0 0 0 0 1 0 0	Physics	General Secretariat e of Fisheries. RV "Vizconde de Eza"	Meteo & TSG Underway Data	High	First contacts made
353_006_SP	-	0	6	SP	353	0 0 0 0 0 1 0 0	Physics	General Secretariat e of Fisheries. RV "Miguel Oliver"	Meteo & TSG Underway Data	High	First contacts made
353_007_SP	Datatypes?	0	7	SP	353	0 0 0 0 0 1 0 0	Physics	METEO- Galicia	Fixed buoys network	Low/Medium	
353_008_SP	Datatypes?	0	8	SP	353	0 0 0 0 0 1 0 0	Physics	Harbours Authority (M. Fomento)	Fixed buoys network	Low	SD Cloud Partners
353_009_SP	-	0	9	SP	353	0 0 0 0 0 1 0 0	Physics	Harbours Authority (M. Fomento)	Tide gauge network	Low	SD Cloud Partners

353_010_SP	Too vague	0	10	SP	353	1	1	1	1	1	1	1	Bathymetry, Geology, Seabed habitats, Chemistry, Biology, Physics, Human Physics	Plan Estatal I+D+i (MINEINCO )	Completed research projects. Depending on the project.	Unknown	Already sending 50x50 m resolution data to data.bshc.pro + intermediate to get to become member of the consortium	
353_011_SP	-	0	11	SP	353	0	0	0	0	0	1	0	Physics	UTM/CSIC. RV "Sarmiento de Gamboa"	Meteo & TSG Underway Data	Medium/High	SD Cloud Sub-contractor	
353_012_SP	-	0	12	SP	353	0	0	0	0	0	1	0	Physics	UTM/CSIC. RV "García del Cid"	Meteo & TSG Underway Data	Medium/High	SD Cloud Sub-contractor	
353_013_SP	-	0	13	SP	353	0	0	0	0	0	1	0	Physics	UTM/CSIC. BIO "Hespérides"	Meteo & TSG Underway Data	Medium/High	SD Cloud Sub-contractor	
353_014_SP	-	0	14	SP	353	0	0	0	0	0	1	0	Physics	SOCIB. R/V sociib	Meteo & TSG Underway Data	Medium		
696_001_TR	-	0	1	TR	696	1	1	0	0	1	0	0	Bathymetry, Geology, Seabed habitats	General Directorate Of Mineral Research And Exploration s - http://ww	Bathymetry monitoring , Seismic activity	Medium	Maybe already processed in the frame of TILES	
696_002_TR	-	0	2	TR	696	1	0	0	0	?	1	0	Bathymetry, Seabed habitats, Physics	Turkish Naval Forces - Office Of Navigation, Hydrography and Oceanogra	Bathymetry , Backscattering maps, T, S - Black Sea, Marmara, Mediterranean	Monitoring, Marine chart preparatio	No hope	Meeting to discuss collaboration (date to be determined)

696_003_TR	-	0	3	TR	696	0	0	0	0	0	1	0	0	Physics	Turkish State Meteorological Office <a href="https://mgo.m.gov.tr/en-US/forecas">https://mgo.m.gov.tr/en-US/forecas</a>	Meteorological data, waves, oceanographic data from moorings	Research & monitoring activity	Medium to High	
696_004_TR	-	0	4	TR	696	0	0	1	0	0	0	1	0	Chemistry, Human Activities	Turkish Atomic Energy Authority - <a href="http://www.taek.gov.tr/en/">http://www.taek.gov.tr/en/</a>	Radioactive measurements, Nuclear Safety	Monitoring activity, Autorisation for nuclear installations	Low	
696_005_TR	-	0	5	TR	696	0	0	1	0	1	1	1	0	Seabed Habitats, Chemistry, Physics, Human activities	Turkish Ministry of Environment and Urbanisation	Physics and Chemistry data	Research & monitoring activity	Low to Medium	Several departments related to different emodnet theme. They have significant amount of marine pollution monitoring data. They have some initial efforts for INSPIRE directive.
696_006_TR	-	0	6	TR	696	0	0	0	1	0	0	0	0	Biology	Fisheries Faculties in different Universities	Biological data	Research activity	Low	
696_007_TR	-	0	7	TR	696	0	0	0	1	0	1	0	0	Biology, Physics	Central Fisheries Research Institute, Trabzon - Ministry of Food, Agriculture	Biological, Physical and Chemical data in eastern Black Sea	Research activity	Medium	
696_008_TR	-	0	8	TR	696	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Upgrade BlackSeaScience partners: Sinop University, Black Sea Technical	Biological, Physical and Chemical data	Research activity	Low to Medium	
696_009_TR	-	0	9	TR	696	0	0	1	1	0	1	0	0	Chemistry, Biology, Physics	Black Sea Commission	Biological, Physical and Chemical data in Black Sea	Research activity	Low to Medium	

696_010_TR	-	0	10	TR	696	1	0	0	0	0	0	Bathymetry, Physics	Private Marine Engineering Companies	Bathymetry	Site Survey	Low to Medium	CC-by <a href="http://www.vliz.be/en/imis?module=dataset&amp;dasid=176">http://www.vliz.be/en/imis?module=dataset&amp;dasid=176</a> -- <a href="http://bathy.agentschapmdk.be/index.php">http://bathy.agentschapmdk.be/index.php</a>
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#### Priority Legend

