



# EMODnet Ingestion and safe-keeping of marine data

9th Quarterly Report

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

Date: 14/10/2018

## Contents

1. Highlights in this reporting period.....	3
2. Work package progress .....	3
WP0 – Project Management: .....	4
WP1 – Construct and operate central Data Ingestion portal with services:.....	5
WP2 – Implement pathways to forward submitted data to the appropriate repository:.....	5
WP3 – Facilitate machine-to-machine transfers:.....	6
WP4 – Marketing and outreach activities:.....	7
3. Unexpected difficulties encountered .....	15

## 1. Highlights in this reporting period

---

- The number of **published data submissions** 'as is' in the **View Submissions service** (aka Summary Records service) has increased from **182 to 194 submissions** (metadata forms and related data sets) and of these **32** submissions (was **24**) have been elaborated **to Phase II** and their data sets are now also available at national and European portals;
- Partners have made further progress with promoting EMODnet Ingestion and encouraging data submitters. Next to the **194** published submissions **43** additional submissions are under processing and also further activities are underway for phase II elaboration on already published submissions;
- The second annual progress report was finalized and accepted by EASME at 21<sup>st</sup> August 2018.

## 2. Work package progress

---

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
WP0	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.

### ***WP0 – Project Management:***

As part of task 11 the coordinator prepared the 8th quarterly progress report which was accepted by the EU (EASME and DG MARE). The coordinator also revised and resubmitted the second annual progress report following remarks by EASME and thereafter at 21<sup>st</sup> August 2018 received confirmation from EASME that the report and its associated invoice had been accepted.

In the quarterly reporting period the coordinator of EMODnet Ingestion has participated in the following relevant meetings:

Date	Location	Topic	Short Description
7 September 2018	Webconf	EMODnet communication and promotion	Discussion on tuning promotional and communication activities within the EMODnet network of portals towards external persons and entities

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

As part of task 1 (web-portal) the EMODnet Ingestion portal has been maintained in the present quarter. Moreover as part of task 8 (summary service) editing activities have taken place for the View Submissions service concerning replacing so-called orphan data for organisations from free text into controlled EDMO terms. This improves the integrity of the metadata of the published data submissions for searches, reports and detailed pages.

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

Concerning task 2 (pathways) the number of qualified data centres from the EMODnet Ingestion network and EMODnet Thematic networks that are included in the Data Centre Matrix of engaged data centres has consolidated at 49. Many of them have been actively involved in the processing of data submissions that were relevant for their expertise and country.

During the reporting quarter further progress has been made with achieving data submissions and with completing these by assigned data centres to be published ‘as is’ in the View Submissions service. The number of published submissions has increased from **182** to **194**. The features of these submissions will be further described under WP4 and its indicators. Moreover an increasing number have been elaborated and populated into European data infrastructures driving EMODnet portals, namely from **24** to **32** submissions.

Further progress was made analyzing a (semi-)automatic coupling of SEANOE and EMODnet Ingestion. SEANOE is a French national science ingestion portal ([www.seanoe.org](http://www.seanoe.org)) operated by IFREMER. It started in 2015 and now has > 300 entries. The planned coupling will facilitate that (selected) scientific submissions from SEANOE will be harvested by EMODnet Ingestion for further metadata completion, publishing ‘as-is’, and elaboration of data sets for inclusion and publishing in national and European portals. In the present quarter IFREMER has undertaken a mapping between the data models of SEANOE and the EMODnet Submission service. This mapping reveals a number of items, such as fields which are optional in SEANOE but mandatory in EMODnet. The following step will be a discussion between IFREMER as SEANOE manager and HCMR + MARIS as EMODnet Submission managers how to overcome the issues and to establish the coupling in practice.

The Netherlands use case on North Sea wind energy made further progress. A while ago already a number of data submissions from wind farm monitoring have been completed by Deltares together with

RWS at the Ingestion portal which are published ‘as-is’. These data sets concern bi-valves, pelagic fish, demersal fish and gillnets. A meeting between Deltares and VLIZ took place to discuss in more detail how metadata and data in the Dutch national AQUO standards can be converted to the EurOBIS standards, while also a meeting took place between Deltares and MARIS concerning conversion to SeaDataNet standards. The AQUO – EurOBIS conversion procedure will be used for ‘porting’ biological monitoring data from the wind farms into EMODnet Biology, such as will be the case for the ingestion submissions that have been completed so far. The AQUO – SeaDataNet conversion procedure will be used for ‘porting’ additional submissions for other disciplines from wind farm monitoring activities as well as from the national Rijkswaterstaat marine database into SeaDataNet and from there into several EMODnet thematic portals.

For task 4 (help service) two requests were received and answered. One request concerned more explanation about how to submit data while the other concerned a question about a published data set. Both requests were answered the same day by the help desk.

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

The task 3 (machine-to-machine) **NRT machine-to-machine ingestion** aims at identifying and arranging additional NRT data stations for EMODnet Physics. These can originate from additional operators that are willing to get connected and share their NRT data freely in EMODnet Physics. 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. In the present quarter additional providers were connected as NRT data streams to EMODnet Physics:

- Rotterdam HFR
- 3 Niva Ferrybox (LAOU7, LMSD, LLVT)
- In progress is connecting the HFR stations in Norway

Promotion towards potential operators is ongoing and implemented as a cooperation between EMODnet Ingestion and EMODnet Physics. In the reporting period the following meeting was held:

- International Glider Workshop - “Connecting Glider Data Flows In Europe and beyond” (Genova – Italy, 18-20 September 2018) – the meeting was joined by 70 attendees from Europe, Australia, Brazil, Canada, United States and from both public (research institute, international organizations, etc.) and private (company) sector. The proactive discussion on data flow and data format harmonization settled the basis for developing an international standard (ocean glider format) that will facilitate data discoverability, access and interoperability. Also there was interest in the Sensor Web Enablement (SWE) standards that are promoted through EMODnet Ingestion.

Future joint EMODnet Physics – Ingestion promotion events concern:

- HFR workcamp, 22 – 24 October 2018, Bilibao – Spain
- MARTECH 2018 with dedicated EMODnet session, 10 – 11 December 2018, Porto – Portugal

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

Marketing and outreach activities are undertaken as part of task 9 (outreach) by all consortium members and aim at promoting the EMODnet Ingestion portal and services as well as identifying, encouraging and supporting potential data providers to submit relevant marine data sets by means of the Ingestion portal. It is done in synergy with the central promotion as undertaken by the EMODnet Secretariat and making also use of the EMODnet Thematic networks which are deeply involved in the pathways of processing and uptake of submitted data sets. The aim is to engage different communities by understanding their needs and establishing win – win situations.

At the 3rd EMODnet Plenary meeting in April 2018 and in follow-up messages in May 2018 detailed reports about their campaigns, events, and experiences were given by each country and these have been documented in great detail in the 2nd Annual Progress report.

Due to holidays only a limited number of events have taken place in the present quarter:

- JERICO-NEXT Summer School, 11 – 13 July 2018, in La Valetta – Malta, with dedicated sessions on Copernicus (CMEMS), EMODnet and JERICO-NEXT. UoM as Ingestion partner from Malta has highlighted the EMODnet Ingestion initiative and portal;
- IHPT organised a Portuguese event, 19 – 21 June 2018, in Lissabon – Portugal, with scientific meetings/presentations about the following themes: hydrographic engineering, oceanographic science, marine geology, marine chemistry and marine data management. At the event presentations were given about SeaDataNet and EMODnet and extra promotion was made for EMODnet Ingestion by presentation, continuous animation, and banner roll-up. This was attended by circa 30 representatives of universities and marine companies.
- IO-BAS co-organised a Bulgarian event, 28 September 2018, in Varna – Bulgaria, European Night of Scientists- FRESH EU project (Find Research Everywhere and Share) project - Horizon 2020. At the event promotion was made for EMODnet Ingestion by a presentation and by a poster at the IO-BAS stand;
- OGS co-organised an Italian event, 7 September 2018, in Rome – Italy, Meeting with Adriatic LNG for oil platform environmental monitoring dataset delivery. Promotion was made for making the monitoring datasets available through EMODnet Ingestion;
- RWS participated to a meeting of the SEANSE (Strategic Environmental Assessment North Seas Energy) project, 5 July 2018, in Brussels – Belgium, where it emphasised the importance of

EMODnet and sharing monitoring data through EMODnet Ingestion. SEANSE aims at evaluating a Common Environmental Assessment Framework (CEAF) between the North Sea countries.

- During the Wind Europe days, 25 – 28 September 2018, in Hamburg – Germany, a SEANSE Data Working Group and a Steering Group meeting took place, in which a strong message was sent to use and re-use EMODNET-data and to bring in new data through EMODnet Ingestion. Also attention was given to encouraging industry.
- MARIS and ORION together contributed to organising a meeting, 6 July 2018, in Nicosia – Cyprus, chaired by the Cyprus Ministry of Agriculture, Rural Development and Environment and bringing together multiple Cyprus governmental stakeholders. The meeting aimed at developing a Cyprus Marine Data Management System (CMDMS) to bring together marine data from stakeholders in order to support a Strategic Environmental Assessment (SEA) considering the current Oil & Gas exploration activities in Cyprus EEZ. MARIS and ORION presented how the EMODnet approach and its infrastructure, standards and services could be adopted for establishing such a CMDMS, thereby also making use of expertise of European partners and EMODnet data as collected by other countries in Cyprus waters. The participants agreed with the need for such an overarching approach and CMDMS; however a challenge is finding funding for this multi stakeholder initiative as the Cyprus government has no united view yet on economic benefits versus environmental values. MARIS and ORION have proposed the leading Ministry to initiate a definition study for the CMDMS to map the marine data landscape of Cyprus departments, while in parallel the Ministry should promote undertaking an SEA.

In addition several partners had contacts with potential data submitters to make them aware of the Ingestion service and to give them guidance and support. For instance COGEA made progress with convincing EU JRC to submit a database of Algae industry in Europe which can be elaborated for publishing through the EMODnet Human Activities portal. OGS had contacts with several potential submitters of Marine Litter data such as DeFishGear WP leaders, GEOMAR for Volvo Ocean Race litter dataset ingestion, and Albania in the framework of the HarmonIA project.



### Key indicators:

#### Portal statistics:

All EMODnet Thematic portals and the Central EMODnet portal have included references and links to the EMODnet Ingestion portal.

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jul-18	7,624	9,043	57,140	65,527	1.13 GB
Aug-18	5,057	5,975	53,504	60,418	1.14 GB
Sep-18	4,159	4,973	51,380	66,515	1.40 GB

#### Statistics of submissions.

End of September 2018 there are > **235** submissions in the Submission service, of which **194** already have been published in the Summary service. The following figures give characteristics of those published submissions.

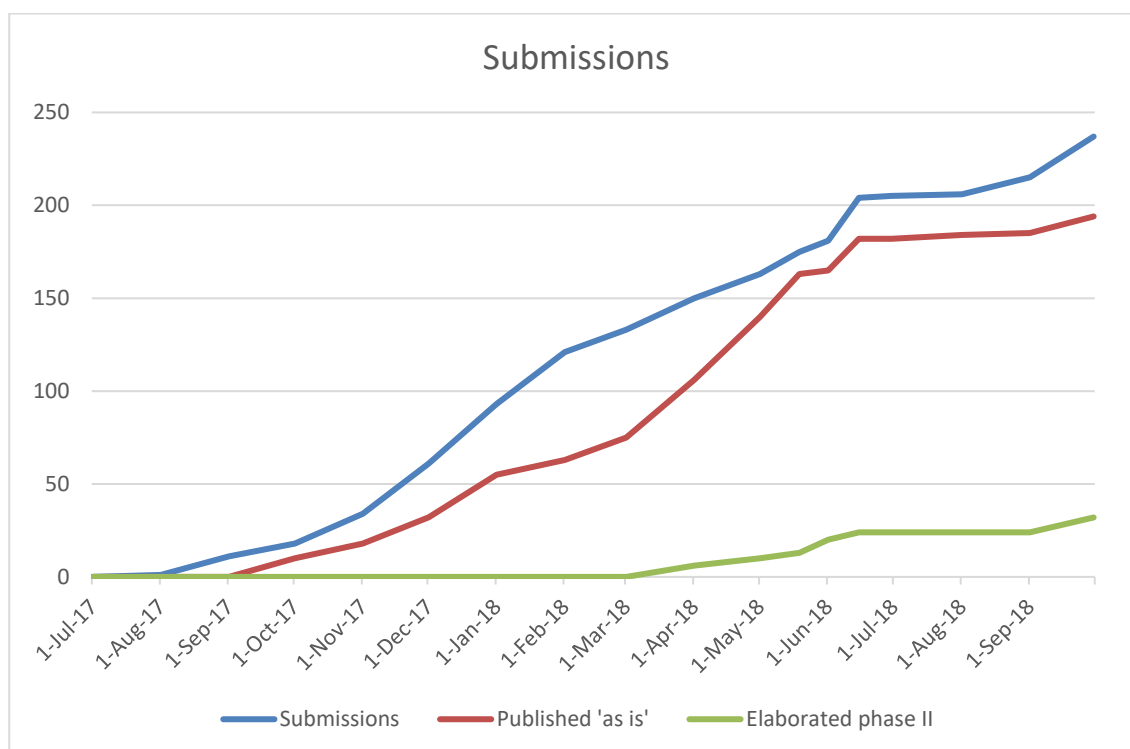


Image: Submissions and processing in time

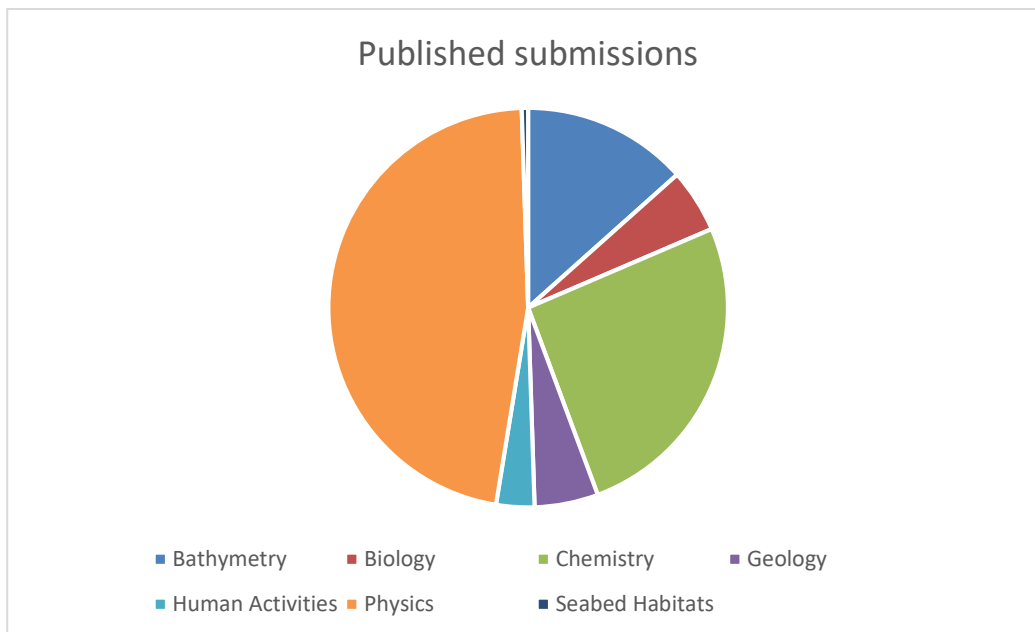


Image: Published submissions by theme

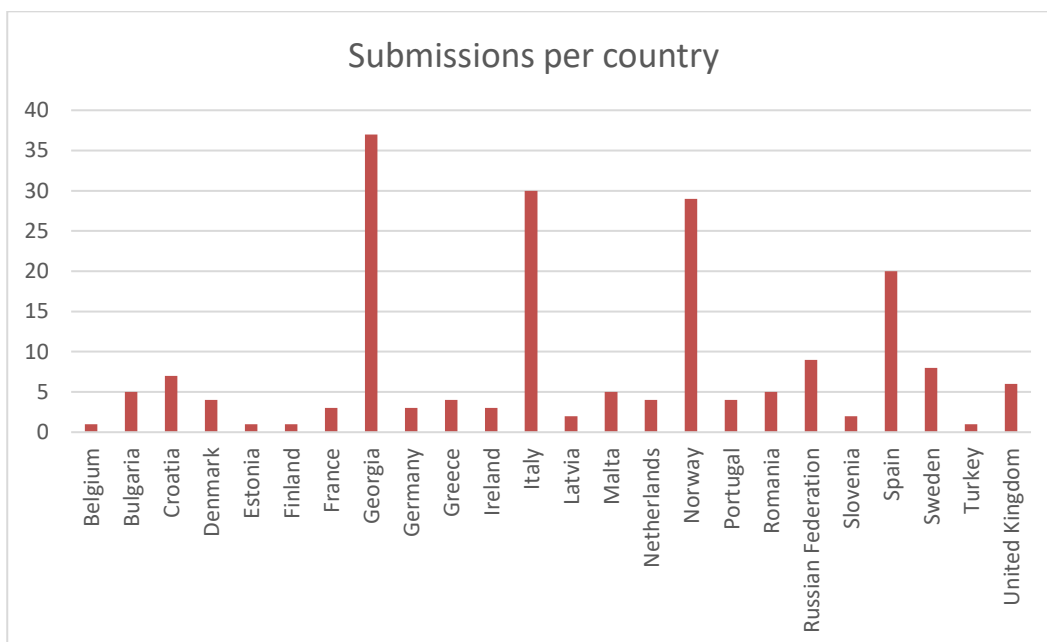


Image: Published submissions by country of submission

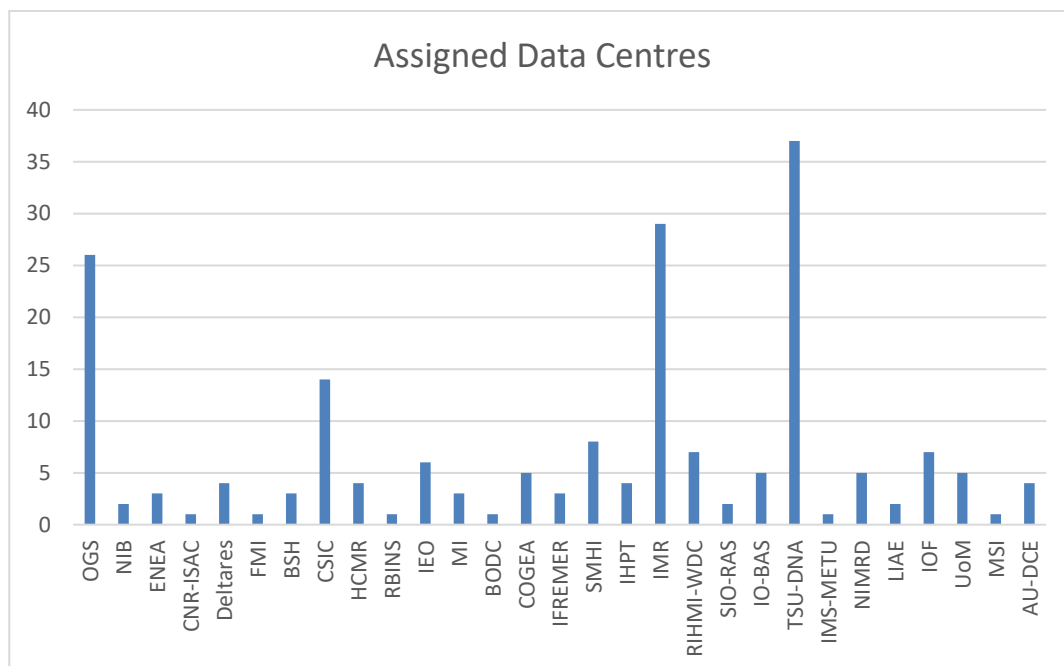


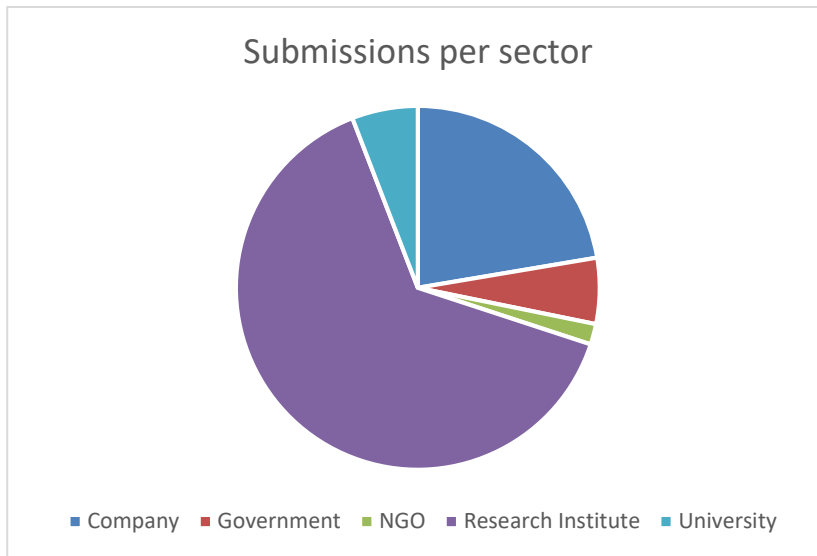
Image: Published submissions by assigned data centres

DATA SUBMITTER / ORIGINATOR / HOLDING CENTRE	No	SECTOR
AQUA4C	1	Company
Esgemar S.A. Estudios geologicos marinos	5	Company
ETT S.p.A.	9	Company
GEMS Survey Ltd	1	Company
GeoMarine Ltd.	1	Company
Laboratory research centre LTD	23	Company
NoordzeeWind BV	4	Company
Scientific - Research Firm "GAMMA"	14	Company
Water Services Corporation	3	Company
Foundation for Environmental Education — Latvia	1	Government
Malta Environment and Planning Authority - Environment Protection Directorate	1	Government
Ministry of Agriculture, Forestry and Food of Republic of Slovenia	1	Government
Portofino Marine Protected Area	2	Government
Rijkswaterstaat Water, Traffic and Environment	4	Government
The Crown Estate	6	Government
Transport Malta - Maritime Division (ex. Malta Maritime Authority)	1	Government
Black Sea NGO Network	1	NGO
NGO MARINE SOUND	2	NGO
The Keep Sweden Tidy Foundation	2	NGO

DATA SUBMITTER / ORIGINATOR / HOLDING CENTRE	No	SECTOR
All-Russia Research Institute of Hydrometeorological Information - World Data Centre (RIHMI-WDC) National Oceanographic Data Centre (NODC)	6	Research Institute
Andalusian Institute of Earth Sciences (IACT). CSIC and University of Granada	5	Research Institute
Arctic and Antarctic Research Institute, Roshydromet (Saint-Petersburg)	1	Research Institute
Baltic Sea Research Institute Warnemuende (IOW), Marine Geology	2	Research Institute
Black Sea–Danube Coastal Association for Research and Development	1	Research Institute
British Oceanographic Data Centre	6	Research Institute
CNR, Institute of Atmospheric Sciences and Climate (ISAC) (Rome)	2	Research Institute
CNR, Institute of Marine Sciences S.S. of Lerici (SP)	3	Research Institute
CNRS Paris Institute of Earth Physics, Marine Geoscience Laboratory	1	Research Institute
Deltares	4	Research Institute
ENEA Centro Ricerche Ambiente Marino - La Spezia	4	Research Institute
Estonian Environmental Research Centre	1	Research Institute
Finnish Environment Institute	1	Research Institute
Finnish Meteorological Institute	1	Research Institute
Hellenic Centre for Marine Research (HCMR)	4	Research Institute
Hellenic Centre for Marine Research, Institute of Oceanography (HCMR/IO)	4	Research Institute
ICM-CSIC/ Institute of Marine Sciences	6	Research Institute
IEO/ Malaga Oceanographic Centre	1	Research Institute
IEO/ Santander Experimental Aquaculture Facilities	1	Research Institute
IEO/Spanish Oceanographic Institute	3	Research Institute
IFREMER	4	Research Institute
IHPT, Hydrographic Institute	2	Research Institute
Institute of Marine Research - Norwegian Marine Data Centre (NMD)	2	Research Institute
Institute of Marine Sciences, Barcelona	3	Research Institute
Institute of Marine Sciences, Middle East Technical University	1	Research Institute
Institute of Marine Sciences. Mediterranean Marine and Environmental Research Centre (CMIMA-ICM-CSIC). Department of Marine Science.	14	Research Institute
Institute of Oceanography and Fisheries	7	Research Institute
Institute of Oceanography and Global Change	1	Research Institute
Institute for Water of the Republic of Slovenia	1	Research Institute
Instituto Interuniversitario de Investigación del Sistema Tierra en Andalucía	1	Research Institute

DATA SUBMITTER / ORIGINATOR / HOLDING CENTRE	No	SECTOR
International Ocean Institute - Malta Operational Centre (University Of Malta) / Physical Oceanography Unit	5	Research Institute
ISPRA-Institute for Environmental Protection and Research	16	Research Institute
LABORATORY OF SCIENCES OF MARINE ENVIRONMENT (LEMAR)	1	Research Institute
Latvian Institute of Aquatic Ecology	1	Research Institute
Marine Institute	3	Research Institute
Marine Systems Institute at Tallinn University of Technology	1	Research Institute
National Institute for Marine Research and Development "Grigore Antipa"	5	Research Institute
National Institute of Biology - NIBMarine Biology Station	2	Research Institute
National Research Council of Italy - Institute for Marine and Coastal Environment (IAMC) (Sezione Capo Granitola)	1	Research Institute
Norwegian Meteorological Institute	28	Research Institute
Ocean Physics and Satellite oceanography laboratory (LOPS) - UMR 6523 CNRS-Ifremer-IRD-UBO	2	Research Institute
P.P.Shirshov Institute of Oceanology, RAS	2	Research Institute
P.P.Shirshov Institute of Oceanology, Southern branch	2	Research Institute
Puertos del Estado. Physical Environment Department	1	Research Institute
Royal Belgian Institute of Natural Sciences, Operational Directorate Natural Environment, Belgian Marine Data Centre	1	Research Institute
Swedish Meteorological and Hydrological Institute	11	Research Institute
Aarhus University, Department of Bioscience, Marine Ecology Roskilde	4	University
Las Palmas University. Department of Physics (ULPGC)	1	University
Marine and Environmental Sciences Centre - Faculty of Sciences of the University of Lisbon	2	University
University Bayreuth	3	University
University of Kyrenia	1	University
University of Leipzig	1	University
University of Rome Tor Vergata	1	University
University of Tuscia-Viterbo	3	University

*Table: Overview of data submitters, originators and holding centres with number of related submissions*



### *Graphics: submissions by sector of organisations*

The above reported Ingestions all concern submissions of data sets made to the Submission service and then completed for publishing at the View Submission service. There are also direct ingestions which bypass the Submission service. This is the case for ingestions by oceanography operators to the European operational oceanography data exchange. Also there is a mission in EMODnet Ingestion to educate data providers and to arrange that regular submissions will go directly to the appropriate data centres and no longer through the Submission service.

### **3. Unexpected difficulties encountered**

---

Nothing to report.