



EMODnet Ingestion and safe-keeping of marine data no 2

Quarterly Progress Report

Reporting Period: 01/10/2019 – 31/12/2019

Date: 20/01/2020



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1. Highlights in this reporting period

- An official contract has been established between MARIS as coordinator and EASME for the second EMODnet Ingestion project with reference **EASME/EMFF/2018/1.3.1.8/01/SI2.810021**, which is active since 11 October 2019.
- In October 2019 an Interim Progress Report has been prepared and submitted by MARIS to EASME and EMODnet Secretariate, covering the period from 19 May till end September 2019 to report on on-going activities between the finalization of the first and start of the second EMODnet Ingestion contract.
- In the reporting period, the number of **published data submissions ‘as is’** in the View Submissions service has increased **from 549 to 565** (metadata forms and related data sets), while the number of **submissions** has decreased **from 649 to 638**, due to reviewing and deleting several test submissions.
- The dynamic exchange between the SeaDataNet SEANOE data citing service (<https://www.seadatanet.org/Software/SEANOE>) and EMODnet Ingestion has been fully deployed, which will result in many new submissions starting 2020. The SeaDataNet SEANOE service invites European scientists to publish their scientific papers and associated data collections in return for a DOI which promotes their wider citation. The exchange facilitates that (selected) scientific submissions from SEANOE are 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. SEANOE will undertake further activities for streamlining the flow by adopting controlled vocabularies.

2. Work package progress

Activities are reported for relevant Work Packages for which actions took place in the interim period.

WPO – Project Management:

On 23rd July 2019 message was received from the EU that the bid for EMODnet Ingestion 2 had been successful. Finally, all evidence was supplied on 5th October 2019 and this triggered the countersigning of the new EMODnet Ingestion 2 contract on 11th October 2019. Since then further contractual activities were undertaken by the coordinator for drafting and getting agreement and signatures for the partner contract with HCMR and bilateral subcontracts with the 44 other members of the EMODnet Ingestion 2 consortium. Currently, nearly all subcontractors have signed, while remaining members have indicated to make progress with their administrations.

Date	Location	Topic	Short Description
7 – 8 November 2019	Genua – Italy	Kick-off meeting EMODnet Physics IV	Re-establishing the cooperation between EMODnet Physics, EMODnet Ingestion, and CMEMS INSTAC for identifying, encouraging and connecting more observing platform operators for joining the European NRT oceanographic data exchange.

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 reporting period. 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 and orphan data for projects into controlled EDMERP terms. This improves the integrity and richness of the metadata of the published data submissions for searches, reports and detailed pages. Indicators have been generated about the performance of Data Ingestion portal, which are reported in the section on WP4. Following the GDPR Directive, activities were undertaken together with the EMODnet Secretariate and EU services to improve the GDPR compliance of the EMODnet Ingestion website and related services. For instance, https:// certificates were acquired and implemented for all domains. Following the feedback and renewed request by EASME, additional activities were undertaken to improve the GDPR compliance. In practice, a number of open items were resolved and reported. Review and acceptance by EU are awaited.

As already described under ‘Highlights’, the building and tuning of the dynamic exchange between the SeaDataNet SEANOE data citing service and EMODnet Ingestion has been completed and the last tests are undertaken to validate it’s well-functioning. Further actions are planned by SEANOE to adopt also working in SEANOE with controlled vocabularies as that will contribute to streamlining the flow and consecutive handling of the exchange.

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

A number of qualified data centres from the EMODnet Ingestion Data Centre Matrix have been actively involved in the processing of data submissions that were relevant for their expertise and country. This can be seen in detail in the analyses in the report on WP4.

WP3 – Facilitate machine-to-machine transfers:

Activities have been continued under the new contract, also together with EMODnet Physics for identifying, encouraging and supporting new operators of operational oceanography platforms to join the European data exchange and to close the gap between operational oceanography and long-term archival of oceanography time series. The cooperation was also reviewed and discussed with CMEMS-INSTAC during the kick-off meeting of EMODnet Physics IV in November 2019. In particular, roles of actors and approach were discussed and re-established between all stakeholders. A number of results of this cooperation were already achieved in the reporting period, such as preparatory activities for NRT exchange with T-MEDNET and SailDrone. Also, more High Frequency Radar (HFR) sites were encouraged to join the exchange: Lisbon – Portugal; Finnmark – Norway; and Cornwall – United Kingdom. The stations will soon publish operational data at the Physics portal, and population of the CMEMS and SeaDataNet CDI services are planned.

WP4 – Marketing and outreach activities:

In the reporting period not too much promotion activities have taken place yet, as the new contract was officially established just around mid October 2019 and the last months of the year are not the best times for initiating new activities. WP4 leader RBINS is planning to compile again an inventory with input from all partners with possible interesting data sources and their source holders that might be approached and supported to ingest data sets. Moreover, RBINS will review and update the set of promotional material to reflect the evolvement and successes achieved by EMODnet Ingestion.

Further progress was made with opportunities as encountered in the interim period:

Nord Stream 2 pipeline project: MARIS and SMHI had another meeting, this time by webex, in December 2019 to discuss further details about the possible data sharing by the Nord Stream 2 pipeline consortium. The management of the pipeline consortium has fully agreed in the mean-time and it is willing to share multidisciplinary data sets for the pipeline trajectory, as far as the related country authorities allow. So far several authorities have indicated to support the exchange to EMODnet Ingestion, such as Sweden and Finland. At the webex it was agreed that the Nord Stream 2 pipeline consortium will prepare a metadata inventory of data sets with sufficient detail, while EMODnet Ingestion will prepare a document explaining in more detail how the ingestions will be handled, acknowledged, and published. In addition, a sort of disclaimer agreement was completed between EMODnet Ingestion and the Nord Stream 2 pipeline consortium. Once delivered, the data inventory will be used to select subsets, based upon suitability for EMODnet lots, that will be ingested and further elaborated. The overall volume and diversity of data will be too large for the EMODnet Ingestion data centres considering their processing capacity and budget.



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Eurofleets+ project: Further progress was also made with the EU H2020 EUROFLEETS+ project which is an alliance of European marine research infrastructures (research vessels, AUVs, and ROVs) to meet the evolving needs of the research and industrial communities. As part of the project, Transnational Access will be organised by funding several research cruises, for which a data policy has been set that all data and metadata acquired will be treated as Open Data and published at the EVIOR online platform. The data management will be implemented in synergy with SeaDataNet and EMODnet, to make use of standards and to ensure that the new collected cruise data will be widely distributed. For that purpose instructions are made and guidance will be given to the researchers, involved in the cruises, to ingest their processed data sets after the cruises in delayed mode into the Submission service of EMODnet Ingestion for further elaboration and uptake into SeaDataNet and EurOBIS, and from there in EMODnet thematic portals. Recently, further conversations have been held, and an extra opportunity is seen for supporting also the Near Real-Time flow, distribution, and publishing of underway data from the sailing vessels by using Sensor Web Enablement (SWE) standards. Adopting and configuring the SWE marine standards and open software components of partner 52North looks like a very good solution and therefore a meeting is planned to explore this further as a possible WP3 use case for EMODnet Ingestion together with Eurofleets+.

The dynamic exchange between the SeaDataNet SEANOE data citing service and EMODnet Ingestion has been completed. In parallel, HCMR has already made selections of entries in SEANOE, which are suited for exchanging with EMODnet Ingestion. The actual exchange will start in the new year in small batches, in order to gain experience and to give the assigned data centres time to process and elaborate the received submissions.

Key indicators of EMODnet Ingestion:

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
Oct 2019	3,251	6,538	18,551	31,406	981.24 MB
Nov 2019	19,207	78,763	204,620	218,425	1.85 GB
Dec 2019	3,258	28,793	134,491	146,597	1.40 GB

Table: portal statistics as collected with AWStats

Note: the extra visits in November 2019 are remarkable. However these are caused by 2 bots which have been registered by multiple sites and qualified as annoying, see <https://www.abuseipdb.com/check/185.6.8.9> and <https://www.abuseipdb.com/check/185.6.8.2>.

Statistics of submissions.

In the reporting period, the number of **published data submissions 'as is'** in the View Submissions service has increased **from 549 to 565** (metadata forms and related data sets), while the number of **submissions** has decreased **from 649 to 638**, due to reviewing the existing submissions and deleting several earlier test submissions, which were inactive and not further being completed. The following figures give characteristics of those published submissions.

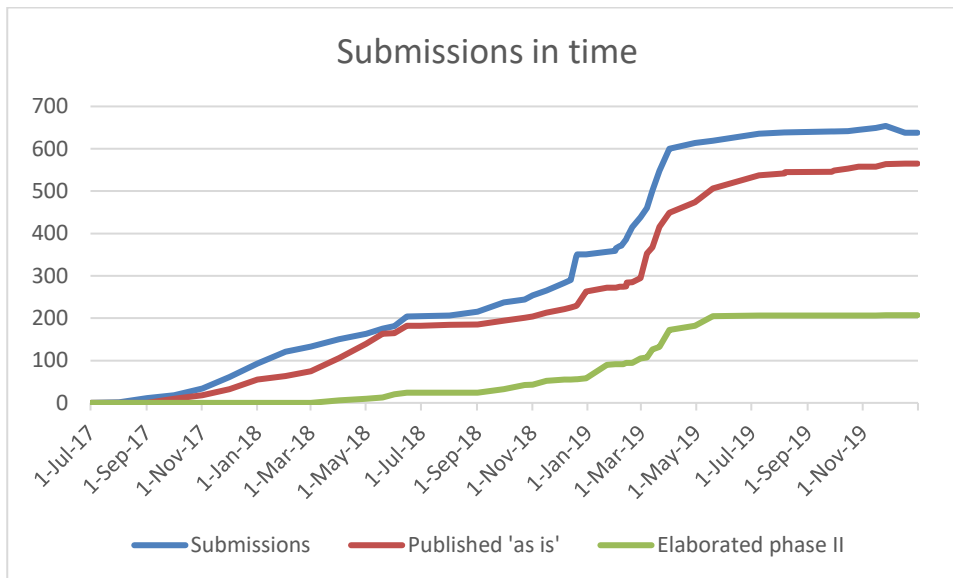


Image: Submissions and processing in time

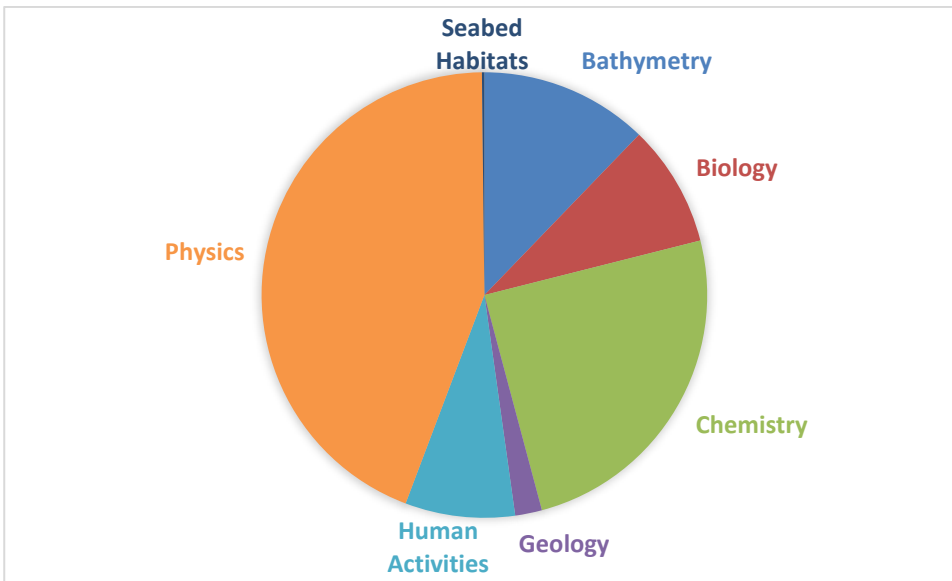


Image: Published submissions by theme

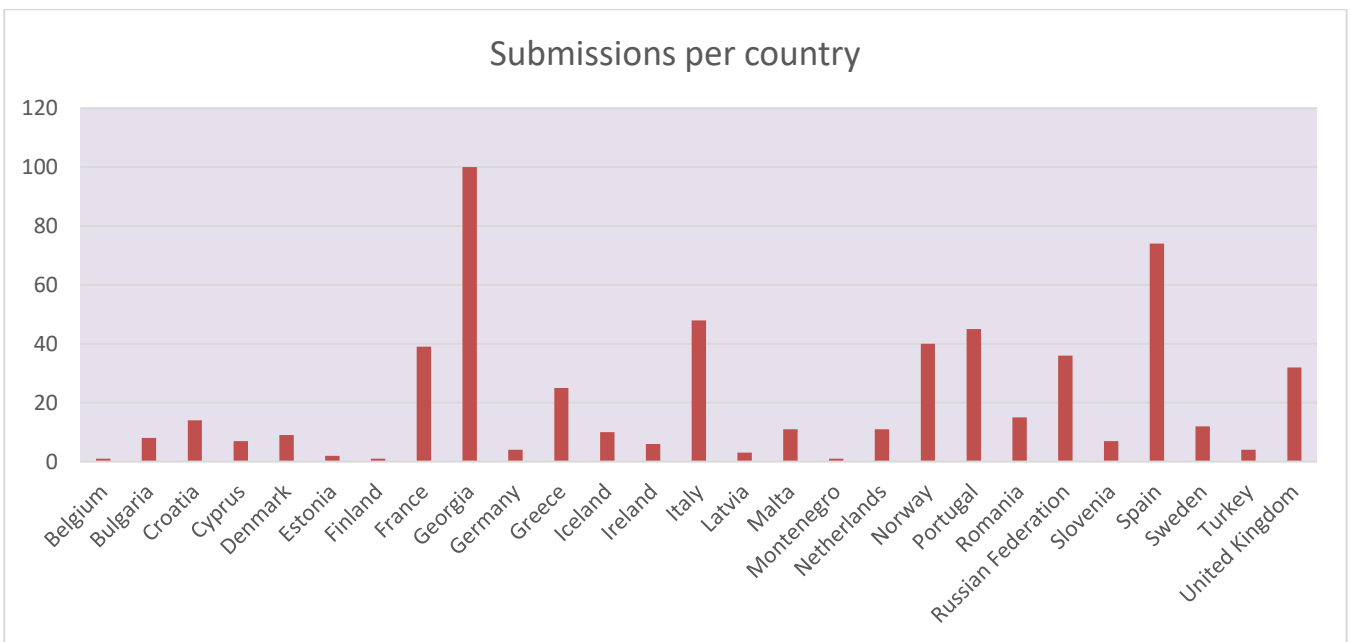


Image: Published submissions by country of submission

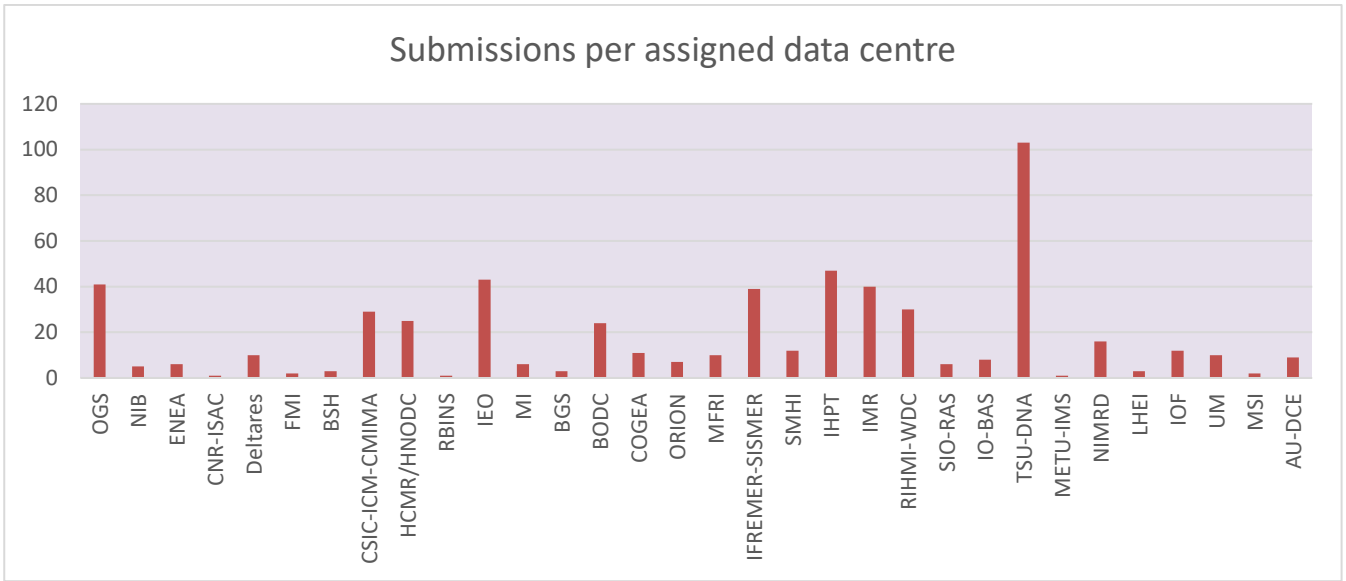


Image: Published submissions by assigned data centres

EDMO	DATA ORIGINATOR / HOLDING CENTRE	No	SECTOR	COUNTRY
4882	AQUA4C	1	Company	Belgium
4730	GeoMarine Ltd.	1	Company	Bulgaria
5031	Petro Celtic Varna Office	1	Company	Bulgaria
1265	Scientific - Research Firm "GAMMA"	18	Company	Georgia
4877	Laboratory research centre LTD	57	Company	Georgia
4999	Napirdatsva Ltd	9	Company	Georgia
5066	Black Sea Aquaculture Company LLC	15	Company	Georgia
4877	Laboratory research centre LTD	1	Company	Georgia
4750	Water Services Corporation	3	Company	Malta
5151	AquaBioTech Group	1	Company	Malta
1357	NoordzeeWind BV	5	Company	Netherlands
1528	Deltares	7	Company	Netherlands
5045	Bureau Waardenburg BV	1	Company	Netherlands
1746	ESGEMAR/ Esgemar S.A. Estudios geologicos marinos	7	Company	Spain
5043	Eco-Dive	2	Company	Spain
4916	Holmen Papper Ab	2	Company	Sweden
2657	GEMS Survey Ltd	1	Company	United Kingdom
3006	SSE Renewables	1	Company	United Kingdom
4171	Partrac - Head office	1	Company	United Kingdom
1032	Black Sea Basin Directorate	1	Government	Bulgaria
4729	Black Sea–Danube Coastal Association for Research and Development	1	Government	Bulgaria
249	Department of Fisheries and Marine Research, Division of Marine Biology and Ecology	1	Government	Cyprus
3308	Department of Transport, Tourism and Sport	1	Government	Ireland
1130	ARPA Emilia-Romagna - Struttura Oceanografica Daphne	2	Government	Italy
3009	ISPRA-Institute for Environmental Protection and Research	17	Government	Italy
4938	Portofino Marine Protected Area	2	Government	Italy
5046	ARPA Liguria	1	Government	Italy
179	Malta Environment and Planning Authority - Environment Protection Directorate	1	Government	Malta
706	Transport Malta - Maritime Division (ex. Malta Maritime Authority)	1	Government	Malta

4751	Environment and Resources Authority	5	Government	Malta
1526	Rijkswaterstaat Water, Traffic and Environment	7	Government	Netherlands
574	Royal Netherlands Navy, Hydrographic Service	1	Government	Netherlands
3348	Portuguese Environment Agency	4	Government	Portugal
4609	Directorate-General for Territorial Development	6	Government	Portugal
5047	Director General of Health - Information and Analysis Services Directorate	33	Government	Portugal
1755	Environmental Agency of the Republic of Slovenia	1	Government	Slovenia
4879	Ministry of Agriculture, Forestry and Food of Republic of Slovenia	2	Government	Slovenia
354	PdE/ Harbours Authority. Physical Environment Department	1	Government	Spain
28	Centre for Environment, Fisheries and Aquaculture Science, Lowestoft Laboratory	3	Government	United Kingdom
1604	The Crown Estate	7	Government	United Kingdom
1165	Black Sea NGO Network	1	NGO	Bulgaria
4727	NGO MARINE SOUND	2	NGO	Bulgaria
4537	ORION	6	NGO	Cyprus
5079	Non-governmental environmental organization "Mare Nostrum"	1	NGO	Romania
4840	The Keep Sweden Tidy Foundation	2	NGO	Sweden
3429	Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences	1	Research Institute	Bulgaria
700	Institute of Oceanography and Fisheries	15	Research Institute	Croatia
3979	Estonian Environmental Research Centre	1	Research Institute	Estonia
1104	Finnish Environment Institute	1	Research Institute	Finland
1725	Finnish Meteorological Institute	1	Research Institute	Finland
486	IFREMER / IDM / SISMER - Scientific Information Systems for the SEA	15	Research Institute	France
1046	LABORATORY OF SCIENCES OF MARINE ENVIRONMENT (LEMAR)	1	Research Institute	France
1054	IFREMER	21	Research Institute	France
3187	CNRS Paris Institute of Earth Physics, Marine Geoscience Laboratory	1	Research Institute	France

4536	Ocean Physics and Satellite oceanography laboratory (LOPS) - UMR 6523 CNRS-Ifrermer-IRD-UBO	2	Research Institute	France
100	Leibniz Institute for Baltic Sea Research Warnemünde	1	Research Institute	Germany
116	Baltic Sea Research Institute Warnemuende, Marine Geology Department	1	Research Institute	Germany
2947	GEOMAR Helmholtz Centre for Ocean Research Kiel	1	Research Institute	Germany
164	Hellenic Centre for Marine Research, Institute of Oceanography (HCMR/IO)	22	Research Institute	Greece
269	Hellenic Centre for Marine Research, Hellenic National Oceanographic Data Centre (HCMR/HNODC)	3	Research Institute	Greece
4766	Marine and Freshwater Research Institute	10	Research Institute	Iceland
396	Marine Institute	5	Research Institute	Ireland
134	CNR, Institute of Marine Sciences S.S. of Lerici (SP)	3	Research Institute	Italy
136	ENEA Centro Ricerche Ambiente Marino - La Spezia	12	Research Institute	Italy
642	Joint Research Centre (JRC)	6	Research Institute	Italy
4809	National Research Council of Italy - Institute for Marine and Coastal Environment (IAMC) (Sezione Capo Granitola)	1	Research Institute	Italy
698	Latvian Institute of Aquatic Ecology	1	Research Institute	Latvia
4762	Foundation for Environmental Education — Latvia	1	Research Institute	Latvia
5017	Institute of Electronics and Computer Science	1	Research Institute	Latvia
2432	Institute of Marine Biology (IMBK)	1	Research Institute	Montenegro
1340	Wageningen Marine Research, IJmuiden	2	Research Institute	Netherlands
612	Institute of Marine Research - Norwegian Marine Data Centre (NMD)	1	Research Institute	Norway
1212	Norwegian Meteorological Institute	28	Research Institute	Norway
1417	Norwegian Institute of Water Research (NIVA)	3	Research Institute	Norway

697	National Institute for Marine Research and Development "Grigore Antipa"	14	Research Institute	Romania
681	All-Russia Research Institute of Hydrometeorological Information - World Data Centre (RIHMI-WDC) National Oceanographic Data Centre (NODC)	30	Research Institute	Russian Federation
682	Atlantic Scientific Research Institute for Marine Fishery and Oceanography	12	Research Institute	Russian Federation
684	Arctic and Antarctic Research Institute, Roshydromet (Saint-Petersburg)	1	Research Institute	Russian Federation
685	P.P.Shirshov Institute of Oceanology, RAS	7	Research Institute	Russian Federation
686	P.P.Shirshov Institute of Oceanology, Southern branch	4	Research Institute	Russian Federation
949	World Data Centre-B For Oceanography	6	Research Institute	Russian Federation
1229	National Institute of Biology - Marine Biology Station	1	Research Institute	Slovenia
4878	Institute for Water of the Republic of Slovenia	3	Research Institute	Slovenia
280	CSIC-ICM/ Institute of Marine Sciences	12	Research Institute	Spain
310	IGME, Geological Survey of Spain	5	Research Institute	Spain
353	IEO/ Spanish Oceanographic Institute	16	Research Institute	Spain
1396	IACT-UGR-CSIC / Andalusian Earth Sciences Institute	5	Research Institute	Spain
1402	IEO/ Santander Experimental Aquaculture Facilities	1	Research Institute	Spain
1404	IEO/ Vigo Oceanographic Centre	10	Research Institute	Spain
1405	IEO/ Malaga Oceanographic Centre	1	Research Institute	Spain
1408	IEO/ Murcia Experimental Aquaculture Facilities	19	Research Institute	Spain
2550	Institute of Marine Sciences, Barcelona	7	Research Institute	Spain
4883	ULPGC-IOCAG/ Institute of Oceanography and Global Change	1	Research Institute	Spain
3497	PLOCAN/ Oceanic Platform of the Canary Islands	4	Research Institute	Spain
545	Swedish Meteorological and Hydrological Institute	8	Research Institute	Sweden
42	British Geological Survey, Edinburgh	3	Research Institute	United Kingdom

2135	Marine Scotland Science	21	Research Institute	United Kingdom
44	Scottish Association for Marine Science	1	Research Institute	United Kingdom
729	Aarhus University, Department of Bioscience, Marine Ecology Roskilde	4	University	Denmark
3037	Aarhus University, Danish Centre for Environment and Energy	5	University	Denmark
713	Marine Systems Institute at Tallinn University of Technology	1	University	Estonia
3324	University of Leipzig	1	University	Germany
3453	University Bayreuth	3	University	Germany
774	NUI Galway	1	University	Ireland
1631	University of Tuscia-Viterbo	3	University	Italy
4881	University of Rome Tor Vergata	1	University	Italy
708	International Ocean Institute - Malta Operational Centre (University Of Malta) / Physical Oceanography Unit	10	University	Malta
4595	University of Bergen / Geophysical Institute	8	University	Norway
2516	University of Algarve, Marine Sciences Centre	2	University	Portugal
4880	Marine and Environmental Sciences Centre - Faculty of Sciences of the University of Lisbon	4	University	Portugal
342	ULPGC/ Las Palmas University. Department of Physics	1	University	Spain
2153	UVIGO/ University of Vigo	5	University	Spain
4937	IISTA/ Andalousian Interuniversity Institute for the Reseach on the Earth System	1	University	Spain
2209	Stockholm University, Department of Meteorology	1	University	Sweden
696	Institute of Marine Sciences, Middle East Technical University	4	University	Turkey
4748	University of Kyrenia	4	University	Turkey

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

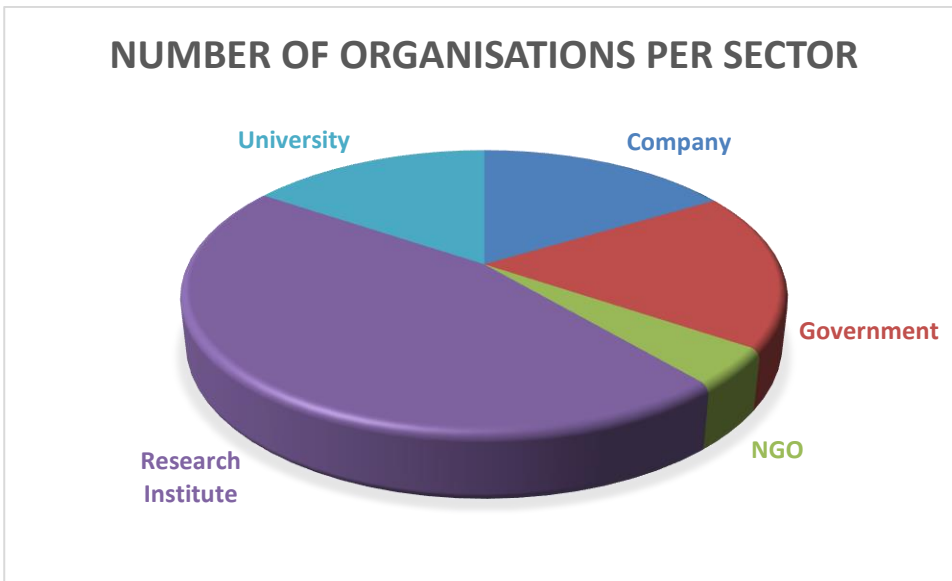


Figure: Division by sector of organisations for data originators and holding centres

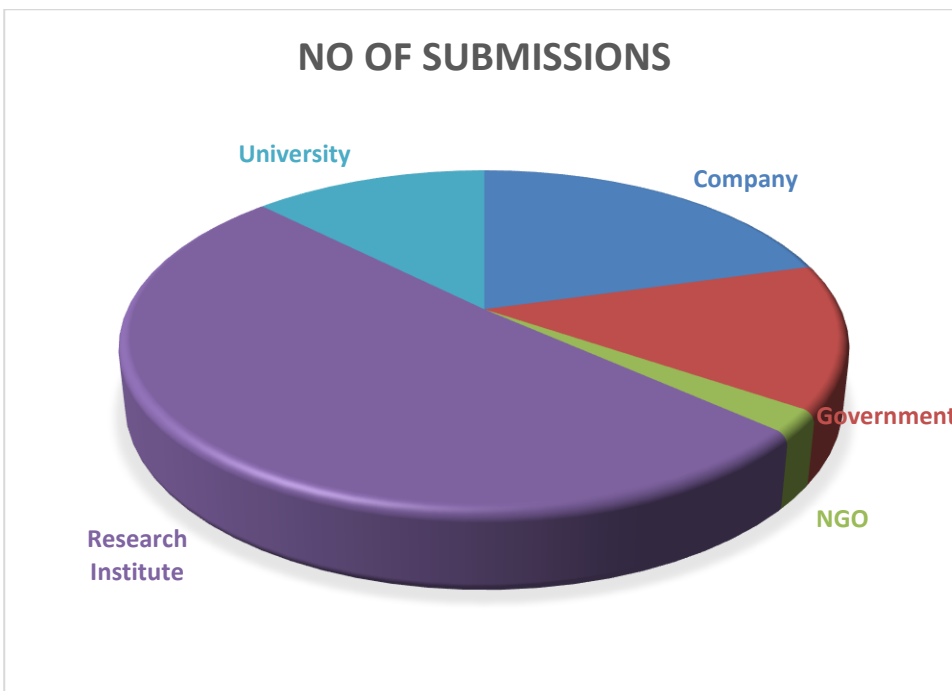


Figure: Division of number of submissions by sector of organisations

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. In the reporting period only 1 additional submission was elaborated to phase II, bringing the total op phase II submissions at 207 out of the 565 published submissions.

3. Unexpected difficulties encountered

Nothing to report.