



# EMODnet Ingestion and safe-keeping of marine data

5th Quarterly Report

Reporting Period: 01/07/2017 – 30/09/2017

Date: 13/10/2017

## Contents

1. Highlights in this reporting period.....	3
2. Work package progress .....	3
WP0 – Project Management: .....	3
WP1 – Construct and operate central Data Ingestion portal with services:.....	4
WP2 – Implement pathways to forward submitted data to the appropriate repository:.....	6
WP3 – Facilitate machine-to-machine transfers:.....	7
WP4 – Marketing and outreach activities:.....	8
3. Unexpected difficulties encountered .....	12

## 1. Highlights in this reporting period

- The **View Submissions service** (aka Summary Records service) has been publicly launched at the portal and it is already giving access to the first group of **10 submission metadata forms** and their data sets which can be downloaded 'as is'. The service is also ready for publishing phase 2 metadata concerning the URLs of portals where elaborated data sets might be found.
- The **Data Wanted service** has been launched at the portal allowing any user to formulate and post requests for data sets they are looking for.
- The **EMODnet Ingestion portal** has been upgraded, integrating the 2 new services (View Submissions and Data Wanted) and adopting the new EMODnet styling instructions as received from the EMODnet Secretariate.
- Additional promotion material has been designed and delivered to project partners for use in their marketing and promotion activities which are well underway, resulting in the publishing of the first 10 data submissions and > 30 more submissions in progress.

## 2. Work package progress

### ***WP0 – Project Management:***

In the quarterly reporting period the coordinator or members of the EMODnet Ingestion consortium have participated in the following relevant meetings:

Date	Location	Topic	Short Description
7-9 September 2017	Constanta - Romania	ProMare 2017 Symposium	Presentation of EMODnet Ingestion project to Black Sea research community by partner NIMRD
13 – 15 September 2017	Rome - Italy	EMODnet Steering Committee meeting	Presenting progress on the project and contributing to discussions by MARIS
22 September 2017	Antwerp- Belgium	EMODnet's Open Sea Lab Kickoff Event	Presentation of EMODnet Ingestion project by partner RBINS

The coordinator prepared the 4th quarterly progress report which was accepted by the EU (EASME and DG MARE). The coordinator gave a follow-up to the payment received by the EU for the 1st year, gathering bank details and arranging bank transfers for all partners and subcontractors.

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





The **Data Submission service** is a core service of the EMODnet Ingestion portal and it was launched in February 2017. The submission process has 2 phases: phase 1 for describing and publishing submitted datasets 'as is' and phase 2 for elaborating (parts of) the submitted datasets for making them fit for inclusion in EMODnet portals. Recently the Data Submission service has been upgraded by HCMR and MARIS for handling also the phase 2 workflow and related metadata. Last quarter also a TEST Submission service has been launched in order to allow cooperating Data Centres to train themselves in the submission process and what is expected from them. This has already been followed up by several Data Centres and this brought forward a number of requests for improvements that have been implemented in both the test and the production data submission service.

The **Viewing Submissions service** development has been finalized by MARIS and HCMR and this service, aka Summary Records service, has been launched at the portal end September 2017. This service weekly harvests and imports completed data submissions for phase 1 and 2 from the Data Submission service and publishes these by means of a Discovery and Access service. This then allows public users to search for submitted data and to download these 'as is'. Moreover it gives users the URLs for phase 2 completed submissions, where the elaborated datasets can be found. The Viewing Submissions service has been implemented as a facet search as this makes it easy for users to oversee and drill down.

#### View submissions

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		Results (10)	
Input string	<input type="text"/>	southstream observation	
Date [yyyymmdd]	<input type="text"/>	Period: 2014-10-18 - 2015-10-15	
Date from	<input type="text"/>	Observation type: Currents,Other physical oceanographic measurements,Water column temperature and salinity	
Date to	<input type="text"/>		
Geobox		CTD Cumnija Bay	
North	<input type="checkbox"/>	Period: 1996-09-17 - 1996-09-22	
West	<input type="checkbox"/>	Observation type: Dissolved gases,Other inorganic chemical measurements,Water column temperature and salinity	
East	<input type="checkbox"/>		
South	<input type="checkbox"/>	Currents Cumnija Bay	
RESET	SEND	Period: 1996-05-29 - 1996-09-30	
Sea areas		Observation type: Currents	
Strait of Sicily	(3)	Ferry box data	
Black Sea	(2)	Period: 2015-04-01 - 2015-10-31	
Skagerrak	(2)	Observation type: Water column temperature and salinity	

*Image: impression of the new View Submissions service*

In addition a test viewing service has been deployed that harvests from the test data submission service and that will facilitate Data Centres in their training activities.

The **Data Wanted service** development has been completed by MARIS and this service has also been launched at the portal end September 2017. It facilitates anyone seeking certain types of datasets to specify its needs and to post these. This might challenge potential owners of matching datasets to come forward and as follow-up to ingest their datasets. Also it gives direction to the operators of the Ingestion portal in their searches for additional datasets as they will try to match the posted data requests.

### Data Wanted service


[SUBMIT A REQUEST](#)
[DISBAND MY POSTS](#)

The Data Wanted service facilitates anyone seeking certain types of datasets to specify its needs and to post these.

This might challenge potential owners of matching datasets to come forward and as follow-up to ingest their datasets. Also it gives direction to the operators of the Ingestion portal in their searches for additional datasets as they will try to match the posted data requests

Posting requires registration as [Marine-ID user](#). A registered user can submit multiple posts and, if needed, can disband its posts. All submitted posts are validated before publishing; this might take some time.

Filter  in  [FILTER](#) « < 1 > »



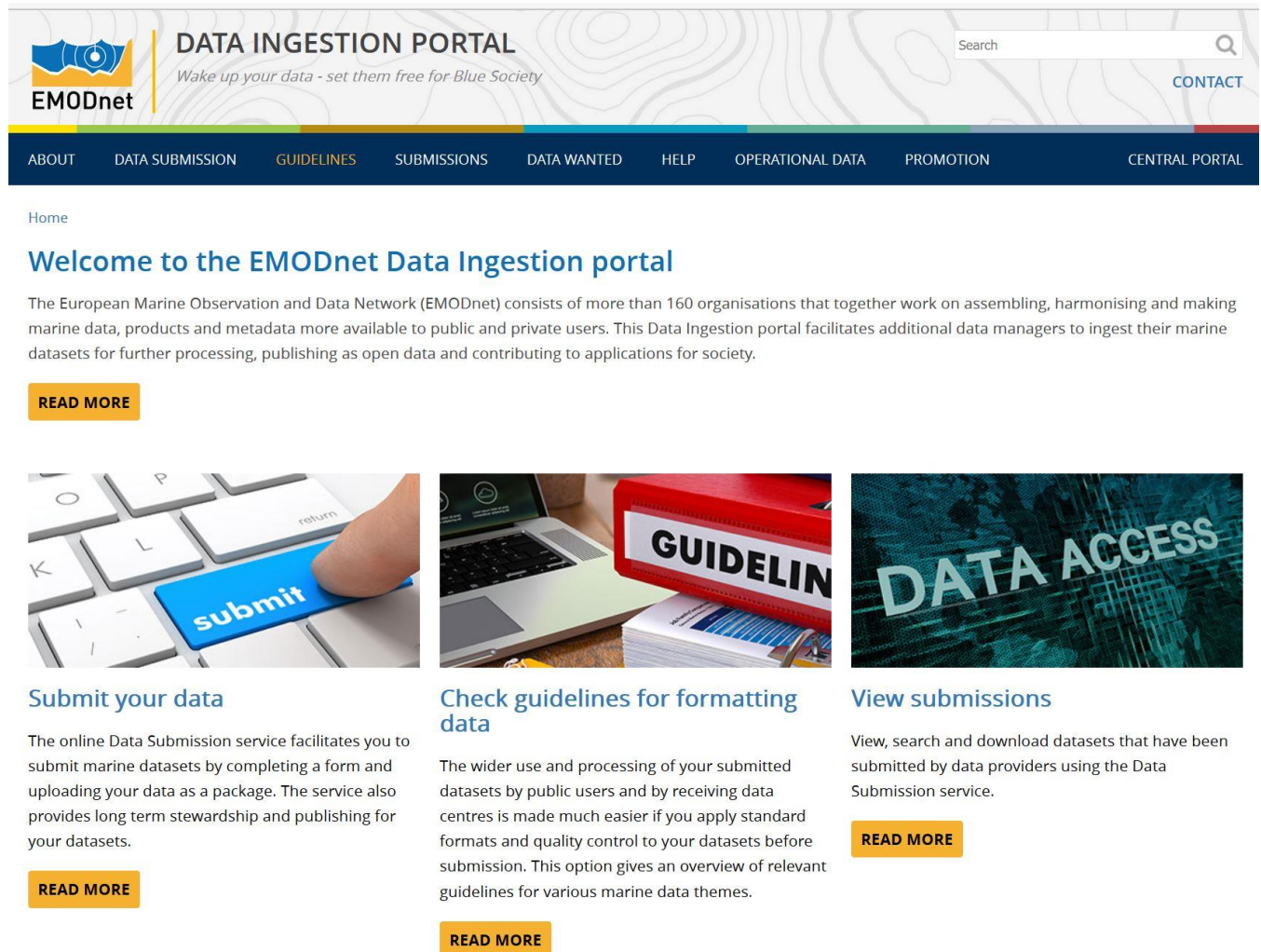
The screenshot shows the Data Wanted service interface. At the top, there is a filter bar with a dropdown menu set to 'Observation Type', a text input field containing 'Sea Region', and a 'FILTER' button. To the right of the filter bar are navigation arrows and a page number '1'. Below the filter bar, there is a map background with two yellow sticky-note-like cards. The left card has a blue pin and contains the following text: 'What? Gravity, magnetics and bathymetry', 'Where? Alboran Sea, Arctic Ocean, Baltic Sea, B...', 'When? From 1900 - 2017', 'Why? In the framework of EMODnet Bathymetry we are searching for additional bathymetric survey datasets f...', '2017-10-04', 'Read more...→', and a 'Respond' button. The right card has a red pin and contains: 'What? Metal and metalloid concentrations, Nutr...', 'Where? Arctic Ocean, Baltic Sea, Barents Sea, B...', 'When? From 1990 - 2017', 'Why? The chemical data are to be included in the products of EMODnet Chemistry which concern validated an...', '2017-09-30', 'Read more...→', and a 'Respond' button.

*Image: impression of the new Data Wanted service*

A registered user can submit multiple posts and, if needed, can disband its posts. All submitted posts are validated by the webmasters before publishing. Viewers can respond to the posts by an email form, e.g. indicating that they might have the wanted data and would like to be contacted for further ingestion support.

The 2 new services have been integrated by MARIS in the EMODnet Ingestion portal, which required an upgrade of the homepage and menu. Moreover upgrading was done on the portal for adopting the new styling that was developed by TRUST-IT in assignment by the EU for better harmonising the look & feel of the EMODnet portals. Changes included inter alia an updated logo, new topbar and menu

design, and adoption of ‘open-sans’ as font. The following image gives an impression of the upgraded EMODnet Ingestion portal.



*Image: impression of the upgrade EMODnet Ingestion portal*

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

Earlier MARIS had asked the thematic coordinators to engage their networks in the pathways for EMODnet Ingestion. This has led to EMODnet Ingestion presentations at the kick-off meetings of the different thematic lots. And an introduction was given by their coordinators, who are also engaged in the EMODnet Ingestion consortium, towards their members to become Data Centres in the pathway network for EMODnet Ingestion. This implicates that Data Centres are to be registered in the Data Centre Matrix as part of the Submission Service and will be actively involved in the processing of data



submissions that are relevant for their expertise and country. The registration process of Data Centres in the Data Centre Matrix is ongoing. It also includes giving instructions and training in the submission procedures. For that purpose HCMR has drafted concise manuals for Data Submitters and Data Centres for using the Data Submission service. These manuals are posted at the EMODnet Ingestion portal and are very useful as instruction material to users of the Submission service.

In the reporting months further arrangements have been made with JNCC as coordinator of the EMODnet Seabed Habitats lot. Together activities have been undertaken for registering the Seabed Habitats network as Data Centres in the EMODnet Ingestion pathways. Furthermore JNCC has planned an Ingestion presentation by HCMR at its coming Kick-off meeting in Athens – Greece and to hold a training workshop using the test submission service. The approach of a training, organised by the thematic coordinator, might be followed-up towards the other thematic networks (in particular Bathymetry, Biology and Geology) as it will their members more aware of the practical requirements and procedures.

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

The **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 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 has been included. This promotion and invitation has been quite successful and through the collaboration of EMODnet Ingestion and EMODnet Physics the following new NRT stations and operators have come forward and been included by partner ETT in the EMODnet Physics portal.

NRT stations	Operator
30 tide gauge stations of the Italian TideGauge network	ISPRA, Italy
4 fixed stations, 2 gliders, 2 turtles	SOCIB, Spain
High Frequency Radar data at Brest bay: Pointe de Brézellec- Pointe de Garchine	Shom – France
23 FerryBox lines (Stenalines)	SMHI - Sweden

In addition several historical datasets for physics have been identified by ETT as coordinator of EMODnet Physics and these have been ingested in the Data Submission service for further processing.

Historical physics datasets	Origin
>1100 sea mammals data, 2004 – 2015,	MEOP group
3 fixed buoys (Civitavecchia, Gaeta), 2012 -2017	University of Tuscia - Italy
HFR data (Naples, Manfredonia, Trieste), RITMARE project	CNR ISMAR - Italy
HFR data (MESA, VADE), 2014-2015	SMH - Sweden

These submissions are being processed in contact between assigned Data Centres and the data originators. The HFR data for SMHI (last entry) are already done and published in the View Submissions service.

The **Sensor Web Enablement (SWE) pilot** concerns real time monitoring systems, allowing direct standardised access to selected data types from selected monitoring instruments. This activity is executed by BODC, IFREMER, ETT and OGS. The formulation of SWE profiles for the related platforms and sensors has recently been finalised. 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. Distinction is made in platforms and sensors. Additional distinction is made on models and instances of platforms and sensors. Work is underway for setting up a pilot SOS service at the EMODnet Physics portal. Once operational, this demonstrator service and the SWE profiles will be 'advertised' at the EMODnet Data 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 / early November 2017.

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

The marketing and outreach activities as planned in WP4 continued and require involvement of all consortium members in the remaining duration of the project. The overall inventory of EMODnet Ingestion members was further developed. The WP4 leader instructed EMODnet Thematic Coordinators to prioritise specific high potential datasets for their theme. All EMODnet thematic coordinators went through the Survey list and gave datasets that look promising and interesting an **A, B, C, D** or **E**. This updated list was sent to all partners with a strong message to undertake action focusing on these datasets. It was asked to provide feedback (positive or negative) from all partners to be able to compose a general overview of the success of EMODnet Data Ingestion. These best practices will be shared with the whole consortium in the next months.



In addition WP4 undertakes promotion. All follow-up activities are supported by the central promotion campaign and a set of promotion materials has been made available by RBINS. A roll-up infographic and a leaflet have been designed. Both items are available as PDF on the project extranet and in the promotion section of the portal. Two roll-up banners have been printed and can be used by partners if they want to use the infographic during a workshop, an event or a conference. The second roll-up banner is hosted at the EMODnet Secretariat office. The leaflets are printed (4.000) on a high quality paper and will be sent to all partners in October 2017. The animation movie is making good progress and the launch is scheduled for end of October, on the EMODnet Secretariat youtube channel. A teaser has been put on twitter (<https://twitter.com/franvispanvis/status/911177585232678912>). This has been retweeted by @EMODnet Secretariat (> 1900 followers) and @RBINSmuseum (> 9000 followers).

The earlier contact with the BONUS programme secretariate was activated again and it is considered how several data collections as acquired during BONUS might be ingested in the Data Submission service and worked up to be included in the Data Centres and EMODnet portals. The BONUS secretariate is asked to identify which BONUS datasets might not have been incorporated yet in established Data Centres and thus would have a value as new datasets for the community. An extra difficulty is that the BONUS secretariate only has metadata, while for the data submission support will be required from the data owners in the Baltic region.

The use case for the Netherlands concerning monitoring data from renewable energy projects in the North Sea is making good progress. Partners Deltares and Rijkswaterstaat have retrieved biological monitoring datasets which will be ingested soon in the Data Submission service and worked up for uptake in EurOBIS and EMODnet Biology. Furthermore Deltares, Rijkswaterstaat and MARIS are exploring options for retrieving and ingesting physical monitoring datasets from the windfarms which will be interesting for SeaDataNet and EMODnet Physics.

The use case for the United Kingdom with Crowne Estate concerning renewable energy projects is also making good progress. Partner BODC has identified a number of interesting datasets in the Crowne Estate portal which have been submitted into EMODnet Ingestion. This concerns physical observations and also GIS maps for various renewable energy sites in UK waters. These submissions are being processed by COGEA as Data Centre for Human Activities data.

In addition, several partners have leads towards potential data providers, which require time and care for achieving results. Successes will lead to submissions and later publishing at the portal.

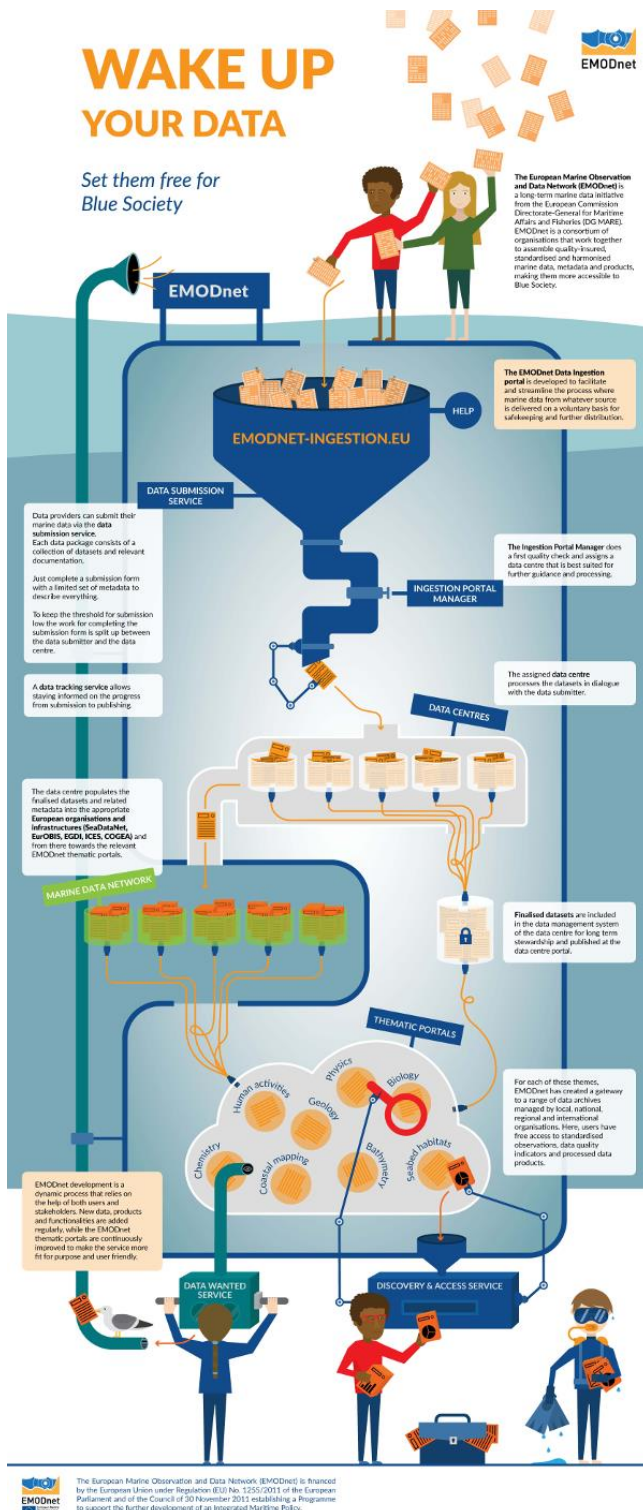


Image: EMODnet Data Ingestion Infographic



# EMODnet Ingestion and safe-keeping of marine data 5th Quarterly report

## WAKE UP YOUR DATA

Set them free for  
Blue Society



### About EMODnet

The European Marine Observation and Data Network (EMODnet) is a long-term marine data initiative of the European Commission's Directorate-General for Maritime Affairs and Fisheries (DG MARE) underpinning its Marine Knowledge 2020 strategy. EMODnet is a consortium of organisations assembling and harmonising European marine data, metadata and data products from diverse sources. The main purpose is to unlock fragmented and hidden marine data, and to make these available to individuals and organisations (public and private). Improved access to quality-assured, standardised and harmonised marine data, that are interoperable and free of user restrictions, will facilitate investment in sustainable coastal and offshore activities.

EMODnet provides a gateway to marine data in Europe across eight discipline-based themes: high resolution seabed mapping, geology, physics, chemistry, biology, seabed habitats, human activities and coastal mapping. For each of these themes, EMODnet has created a portal to a range of data archives managed by local, national, regional and international organisations. Through these thematic portals, users have free access to standardised observations, data quality indicators and processed data products, such as basin scale maps.

The EMODnet data infrastructure is developed through a stepwise approach in three major phases. Currently EMODnet is in the third phase of development that will offer higher resolution seabed maps and new parameters such as river inputs and marine plastic distribution.

EMODnet development is a dynamic process that relies on the help of both users and stakeholders. New data, products and functionalities are added regularly, while the EMODnet thematic portals are continuously improved to make the service more fit for purpose and user friendly.

More background and information about EMODnet can be found on the website:

[EMODNET.EU](http://EMODNET.EU)



### About EMODnet Ingestion

The EMODnet Data Ingestion portal activities are undertaken by a large European network that is geographically anchored in the countries bordering all European marine basins, and covers all EMODnet data themes. The EMODnet Data Ingestion members are national and regional marine and oceanographic data repositories and data management experts. The coordinators of the EMODnet thematic portals are also part of this new initiative.

The EMODnet Data Ingestion portal facilitates submission of sleeping marine datasets for further processing. Open Data publishing and contributing to applications for society. It aims at streamlining the data ingestion process so that data holders from public and private sectors that are not yet connected to the existing marine data management infrastructures can easily release their data for safekeeping and subsequent distribution through EMODnet.

The EMODnet Data Ingestion portal helps to wake up your data so it can serve Blue Society, based on the principle of 'collect once and use many times'. This idea – a guiding principle of the Marine Knowledge 2020 strategy – benefits all marine data users, including policy makers, scientists, private industries and the public, and opens up new opportunities for innovation and growth.

The involved data centres have been actively engaged in data management for many decades. They have the essential capacities and facilities for data quality control, long-term stewardship, retrieval and distribution. They are involved in national research and monitoring activities and have established arrangements for managing the resulting data on a national and thematic basis. Moreover the data centres work together on pan-European and international scales in organisations such as IOE, ICES, EuroGeographics, EuroGOOS and IMO, and for pan-European marine data management infrastructures such as SeaDataCloud and EuroBIS. The latter are feeding into several EMODnet thematic portals.

More background and information about the EMODnet Data Ingestion portal can be found on the website:

[EMODNET-INGESTION.EU](http://EMODNET-INGESTION.EU)

## Use cases

### Monitoring data from windfarms in the Dutch North Sea sector



In the Netherlands a number of offshore wind farms is already operational and new developments are well underway. As establishing and operating an offshore windfarm requires licenses from the Dutch government, windfarm operators are expected to undertake long-term monitoring activities in the fields of physical oceanography and marine biology. This ecological data collection is conditional for the license and serves studies of possible effects of the construction and exploitation of windfarms on their environment. The license also includes that these data are to be shared with public authorities for possible re-use and analyses.

These monitoring datasets were falling outside the calibrated paths and did not reach the national marine data management infrastructure. Therefore Rijkswaterstaat (Public Works Department) and Deltares made an arrangement for safeguarding the datasets, organised under the 'Wind at Sea Ecological Monitoring Program' (Wozep).

In practice, Deltares undertakes activities for processing and documenting the monitoring data from the offshore windfarms using its OpenEarth tools and prepares the datasets for long term stewardship and availability. The collected data concern species distributions (mammals, birds, fish and benthos) and datasets resulting from e.g. flight-pattern studies of birds and bats, noise effects, and collision models.

These processes are now underway. The EMODnet Data Ingestion portal will then provide an attractive way to share the datasets and make them available for the overarching European marine data infrastructures such as SeaDataCloud and EuroBIS, and from there for EMODnet thematic data portals.

### Renewable energy development data in the United Kingdom



The Crown Estate in the United Kingdom is an independent commercial business, created by Act of Parliament. Its role is to ensure that the land and property are sustainably worked, developed and enjoyed to deliver the best value over the long-term. It governs the seabed out to the 12nm limit, which represents 850,000 km<sup>2</sup> – 3 times the size of the terrestrial surface of the United Kingdom. Since 2004 it also licenses operators with rights to generate renewable energy within the EEZ (200nm).

The Crown Estate plays a crucial role in enabling the advancement of the UK offshore renewable energy industry by managing the leasing process for renewable energy projects. A data clause within this lease agreement stipulates that all marine environmental data collected by the offshore wind industry in UK waters is provided to the Crown Estate. Commercial confidentiality of some datasets restricts these data sets from being publicly available for a set period of time.

Data collected concerns bathymetry, sidescan, seismic/chirp (sub-bottom), water levels, flows, waves, sediment, water/sediment quality, weather, benthic, birds, fish, mammals habitat characterisations and maritime archaeology data.

Offshore renewable energy developers provide data to the Crown Estate through the Marine Data Exchange project. Making this data easily accessible provides crucial support for those looking to develop in the marine environment as well as enhancing the sustainability of marine businesses and furthering our understanding of Europe's coastal areas.

A selection of datasets is being submitted to the EMODnet Data Ingestion portal for further processing and inclusion in the national UK data centres (BODC and BGS), partners in EMODnet ingestion.



Image: EMODnet Data Ingestion Leaflet, recto (About EMODnet, About EMODnet Ingestion) and verso (Use Case 1: Monitoring data from windfarms in the Dutch North Sea sector, Use Case 2: Renewable energy development data in the United Kingdom)

Most of the EMODnet Thematic portals and the Central EMODnet portal have included references and links to the EMODnet Ingestion portal. This leads to very good visiting statistics of more than 8.000 visitors in September 2017, which is quite high, also considering that EMODnet Ingestion portal was launched in February 2017.

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
Jun-17	5,754	6,206	49,675	53,944	852.16 MB
Jul-17	5,789	6,175	51,582	57,601	1.14 GB
Aug-17	7,121	7,563	53,292	59,510	1.05 GB
Sep-17	8,139	8,762	54,858	69,300	1.65 GB

Further central promotion activities are planned at the EuroGOOS conference, 2 – 5 October 2017, in Bergen – Norway, where partner RBINS will present the project at an Information Booth. MARIS will present the EMODnet Ingestion portal at the coming ODIP II Workshop, 2 – 5 October 2017, in Galway – Ireland. JNCC will have an EMODnet Ingestion presentation and training exercise at its kick-off meeting, 3 October 2017, in Athens – Greece.

Work is underway for setting up and finetuning key indicators for the EMODnet Ingestion portal, following the proposal by TRUST-IT and the discussions at the EMODnet Technical meeting in Genua – Italy and EMODnet Steering Committee meeting in Rome – Italy. The next quarterly report will include a key indicator section now that the View Submissions service is operational and output from the ingestion activities can be analysed.

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

---

Nothing to report.