DATA INGESTION PORTAL

Wake up your data - set them free for Blue Society

EMODnet

EMODnet Data Ingestion: EU public service supporting the Blue Economy towards FAIR marine data sharing

EMODnet marine data for the offshore renewable energy sector in the Northeast Atlantic, North Sea and Baltic Sea

20-21 September 2022 Virtual event

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EMODnet Ingestion Objectives

Addressing marine data sharing

◉ To **identify**, **encourage** and **support data holders** (from public and private sectors) to **share their data** with EMODnet by teaming up with EU data management infrastructures.

◉ To maintain the **EMODnet Ingestion portal** to **facilitate data holders submitting marine data** sets for publishing, further processing and safekeeping by expert data centres, and subsequent **distribution through EMODnet** thematic portals as **open data**.

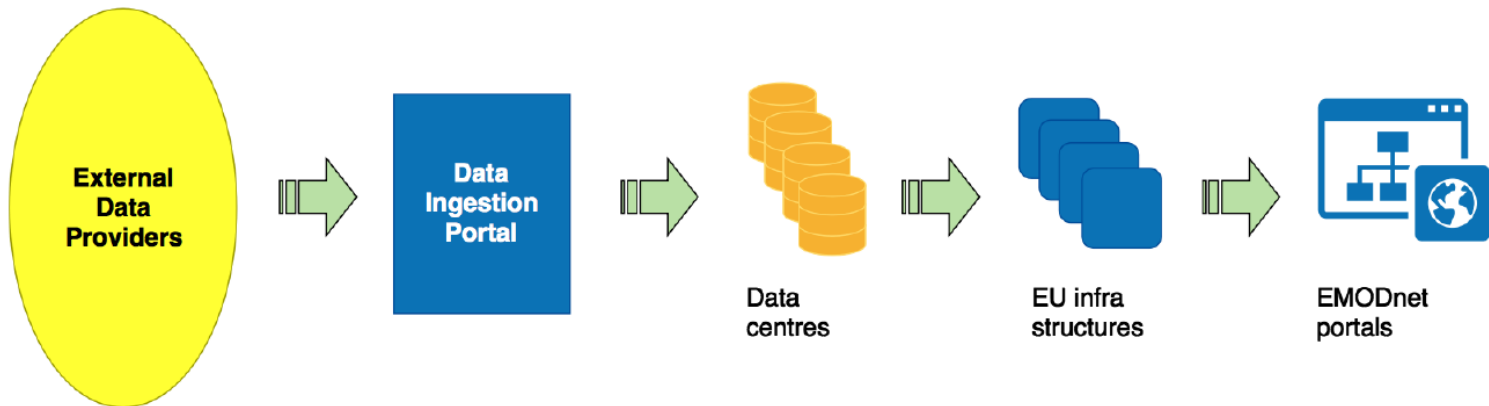# Principle data flow

Harmonization, standardisation, integration
Making data FAIR

Use is made of standards, best practices, and existing marine data management infrastructures, data centres and pathways* towards the EMODnet data portals

Workflow from submission to elaborating and processing for publishing in EMODnet

* Data Centres, SeaDataNet, EurOBIS, EGDI, ICES, CMEMS, and others

FAIR data

◉ **F A I R** : a set of principles applied to the data. It is about sharing them in a way that enables others to:

◉ FIND

◉ ACCESS

◉ INTEROPERATE

◉ RE-USE

◉ The goal of applying the FAIR Data Principles is to **enable** and **enhance** the **reuse** of data **by both humans and machines**.

FAIR Principles

Findable 🔍
Accessible 🖱️
Interoperable ⚙️
Reusable ♻️

F – "Your data can be discovered by others"

- Assigned **persistent identifier** for unique identification and versions management
- Rich descriptive **metadata** for searching and finding

A – "Your data can be made available to others"

- Accessible on the **internet** or by other applications
- **Access restrictions and conditions** should be clearly specified

I – "Your data can be integrated with other data"

- Open **standards (formats, vocabularies)** should be applied to (meta)data
- **Identifiers** for linking with other data, metadata, information

R – "Your data can be reused by others"

- Clear **license** to specify the reuse conditions and permissions (CC-read, understood by machines)
- **Provenance** information on how the data was created

5

The Portal and its services
(operational since Feb. 2017)

www.emodnet-ingestion.eu

- **Data Submission service**
  *(following **ISO 19115-2 standard**, compliant with the **INSPIRE** model)*

- **Discovery and Access service**
  (publishing completed submissions as-is and elaborated)

- **Services for integrating operational data**
  (together with EMODnet Physics)

- **Help Desk**

- **Guidelines**

Our network

- ◉ **50 Data Centres and specialized marine centres** covering all EMODnet data themes.

- ◉ Including Coordinators of **all EMODnet Thematics**
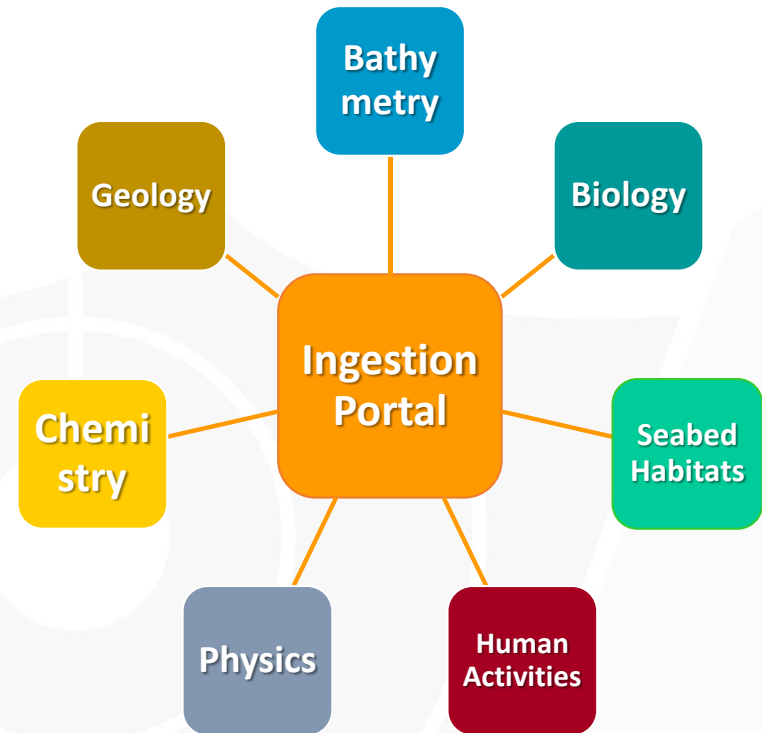
Data Submission process overview with the support of experts

Distinction between 2 phases in the life cycle of a data submission:

◉ **Phase I**: from data submission to publishing 'as is'.

   ◉ **Step 1**: **Data submitter** completes a number of key fields of the submission form and uploads a zip file with the datasets and related documentation.

   ◉ **Step 2**: **Data Centre** is assigned who reviews and complete the submission form for publishing '**as is**' in **Summary Service.**

◉ **Phase II**: further elaboration and integration (of subsets) by assigned Data Centre in national, European and EMODnet thematic portals (if possible).

Making data FAIR

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Data Submission Service

| 🏠 DASHBOARD | BACK TO LIST | WELCOME ATHANASIA IONA (M) | LOGOUT

Dataset Identification

Process Info — Organizations — Dataset Identification — Data Types — Locations & Dates — Data Links & Finish
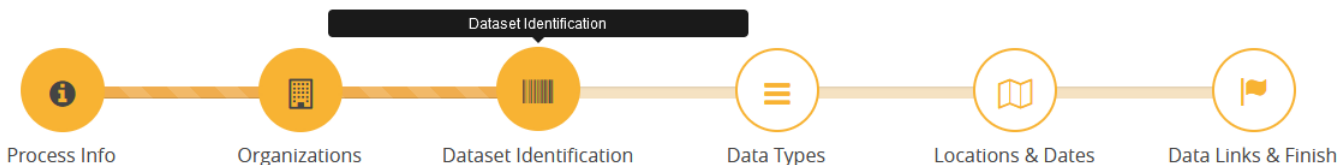
Dataset Identification

* = Required

DATASET GENERAL INFORMATION

Title of dataset * ❶ Carbon parameters in the Western tropical Atlantic

Narrative summary of dataset * ❶ Surface alkalinity and total inorganic carbon (in μmol/kg) were measured by closed-cell potentiometric titration during PIRATA Brazilian cruises. Important Note: This submission has been initially submitted to SEA scieNtific Open data Edition (SEANOE) publication service and received the recorded DOI. The metadata elements have been further processed (refined) in EMODnet Ingestion Service in order to conform with the Data Submission Service specifications.

DATASET FORMATS

Dataset format * ❶ ASC

Language used in dataset ❶ English

9

On-line Summary service

A viewing & downloading service for publishing the data and for making them Findable and Accessible

Making more data available

Establishing automatic (M2M) exchanges with other data repositories

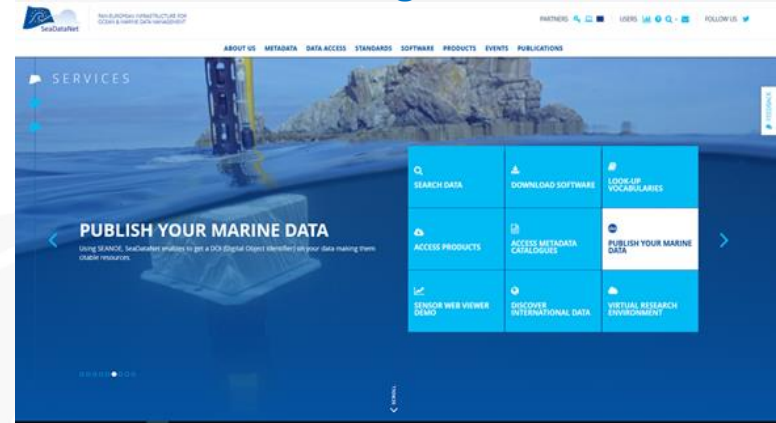- **Coupling with the SeaDataNet/ SEANOE data citing service**:
  - Dynamic exchange has been deployed (already 190 entries)

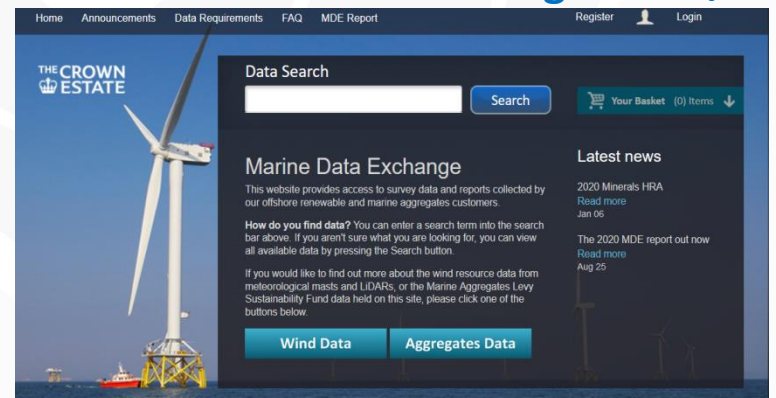- **Coupling with The Crown Estate (TCE) Marine Data Exchange (MDE)** is under development
  - MDE stores, manage, share data of offshore renewable energy projects in UK North Sea sector.

publish and get a DOI for your data

www.seadatanet.org/Software/SEANOE

www.marinedataexchange.co.uk/

Making operational data available faster

Establishing M2M transfers (together with EMODnet Physics)

◉ Identifying, convincing and supporting operators of oceanography observation platforms and networks to **connect & share** their **NRT data streams to the EU operational Oceanography data exchange**

  ◉ Already > 450 platforms have been added to this NRT exchange

  ◉ EU operational exchange is manged by Copernicus Marine, EuroGOOS, and SeaDataNet

map.emodnet-physics.eu
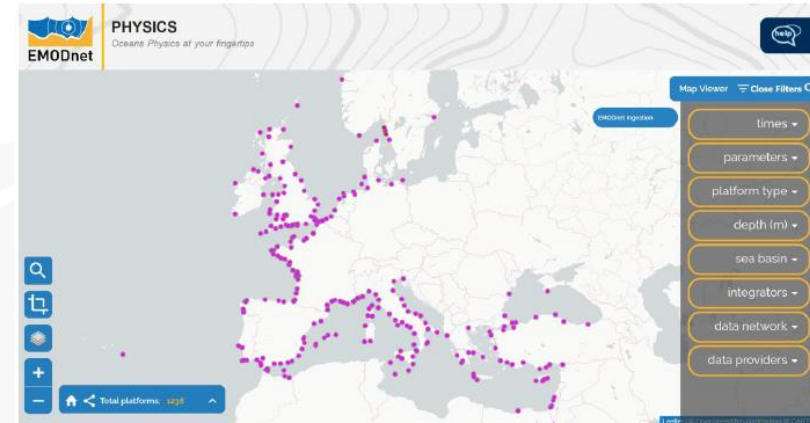
View of EMODnet Physics Mapviewer of NRT sources added with EMODnet Ingestion

Engagement of coastal & offshore license data

◉ Extra emphasis will be given to **improve** and document the **availability of data provided for coastal and offshore licensing** (for aquaculture, offshore energy, …):

  ◉ Identify stakeholders (license authorities per country and sector)

  ◉ Analyse license procedures for data monitoring and reporting, and long-term data management

  ◉ Discuss findings with stakeholders, aiming at a more harmonised and effective approach, benefitting the European marine data exchange.

Submission progress

> 1200 submissions in total, Phase I-II

Submissions and processing in time

Start of DIP3
End of DIP1
End of DIP2

Legend: —Submissions —Published 'as is' —Elaborated phase II
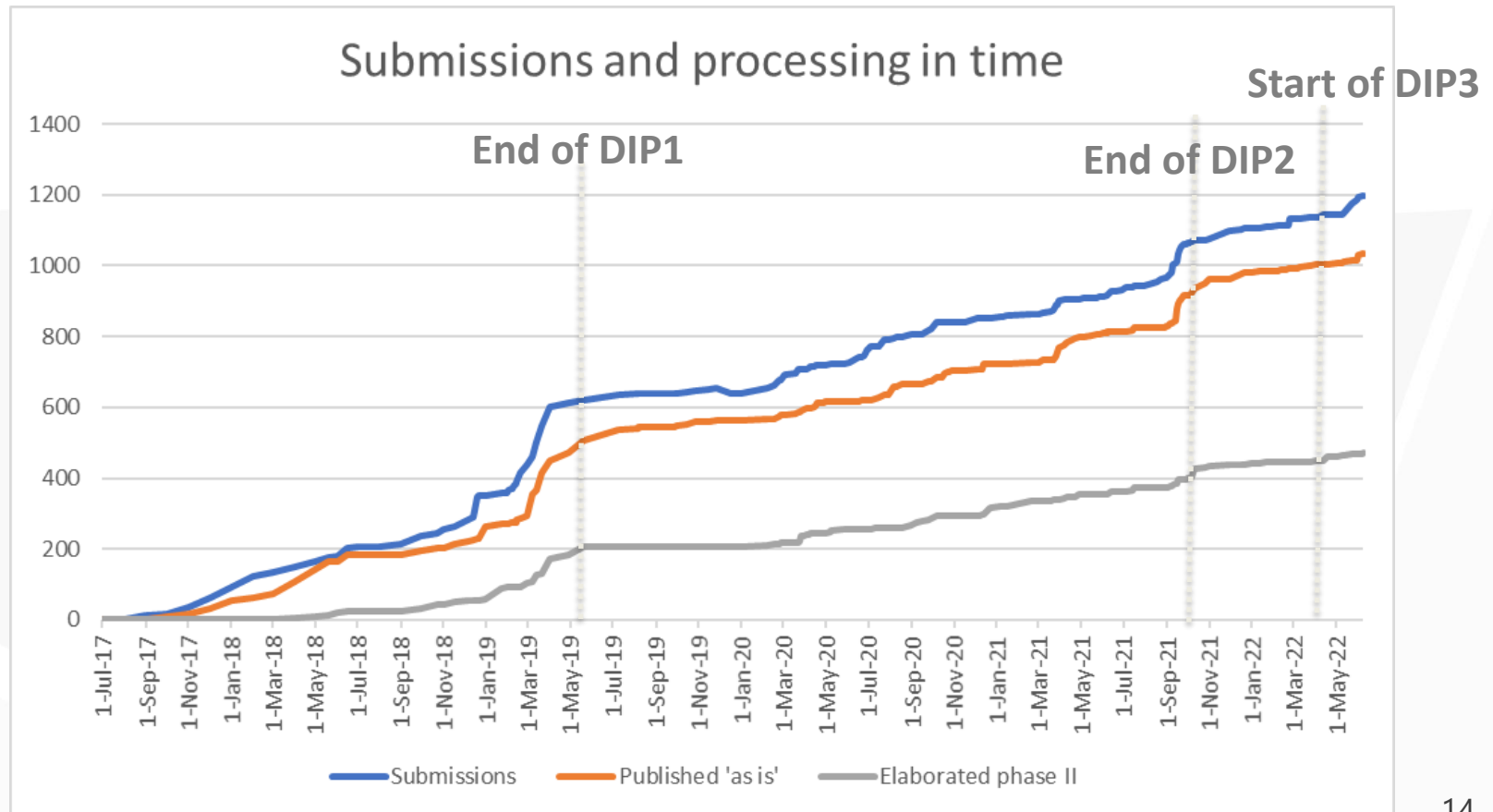
Published Submissions by sector

	Organizations (data originators and holding centres)
DIP2	149
DIP3 Kick off (9 Jun'22)	175

Division of Organisations per sector

Division of Submissions per sector
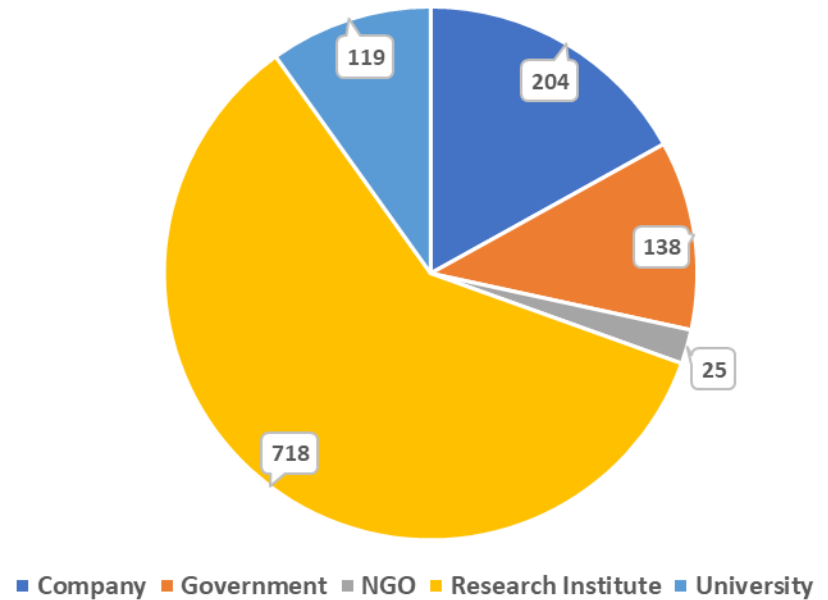
Types of organisations

University 19%
Company 17%
Government 20%
NGO 5%
Research Institute 39%

No of submissions per sector

119
204
138
25
718

■ Company ■ Government ■ NGO ■ Research Institute ■ University

Examples of monitoring data from Windfarms

- MEP-NSW Fish community: Fish community surveys for the Monitoring and Evaluation Programme of the North Sea OWEZ wind park between 2003 and 2011:
  - NoordzeeWind BV
  - Rijkswaterstaat Water, Traffic and Environment

- Published at EMODnet Ingestion

- Ingested into EMODnet Biology

Examples of monitoring data from Windfarms

- MEP-NSW Bivalves: Bivalves surveys for the Monitoring and Evaluation Programme of the North Sea OWEZ wind park in 2007:
  - NoordzeeWind BV
  - Rijkswaterstaat Water, Traffic and Environment

- Published at EMODnet Ingestion

- Ingested into EMODnet Biology

Examples of monitoring data from Windfarms

- 2012, Partrac Ltd, Islay Offshore Wind Farm, Metocean Survey :
    - SSE Renewables
    - Partrac , Head office

- Published at EMODnet Ingestion

- Ingested into EMODnet Physics

Other Originators from offshore renewable energy sector

◉ **Fugro GeoConsulting Limited, UK:** rock & sediment biota data

◉ **Centrica Energy Renewable Investments, UK:** rock & sediment data

◉ **The European Marine Energy Centre Limited, UK:** waves

◉ **Gardline Geosurvey Limited, UK:** bathymetry

Benefits of data sharing

◉ **Safeguarding long-term data availability** for wider use

◉ **Better return on investments** made in data observation

◉ Contributes to generating **better knowledge of the marine environment** and **higher quality data products,** which benefits all marine stakeholders

◉ **Satisfying funding requirements** for open access of data

◉ Making data **FAIR**

◉ Proper **acknowledgment** and increase of **citation** scores

◉ **Prevent duplication** of effort, reduce costs for operators and environmental impact
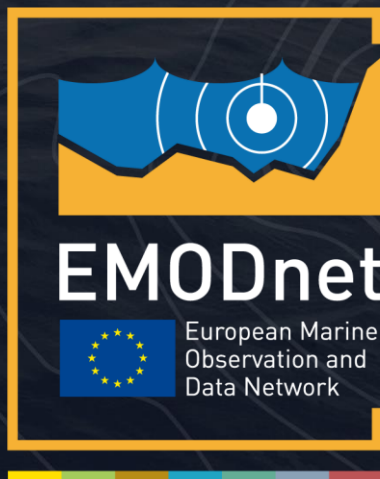
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Your gateway to marine data in Europe