



EMODnet Secretariat Phase IV workplan

CINEA/EMFAF/2021/3.4.10/01

EMODnet Secretariat
EMODnet – Copernicus Marine Service
coordination meeting 18 March 2022

emodnet.ec.europa.eu

Fourth EMODnet Secretariat cycle (2022-2023)

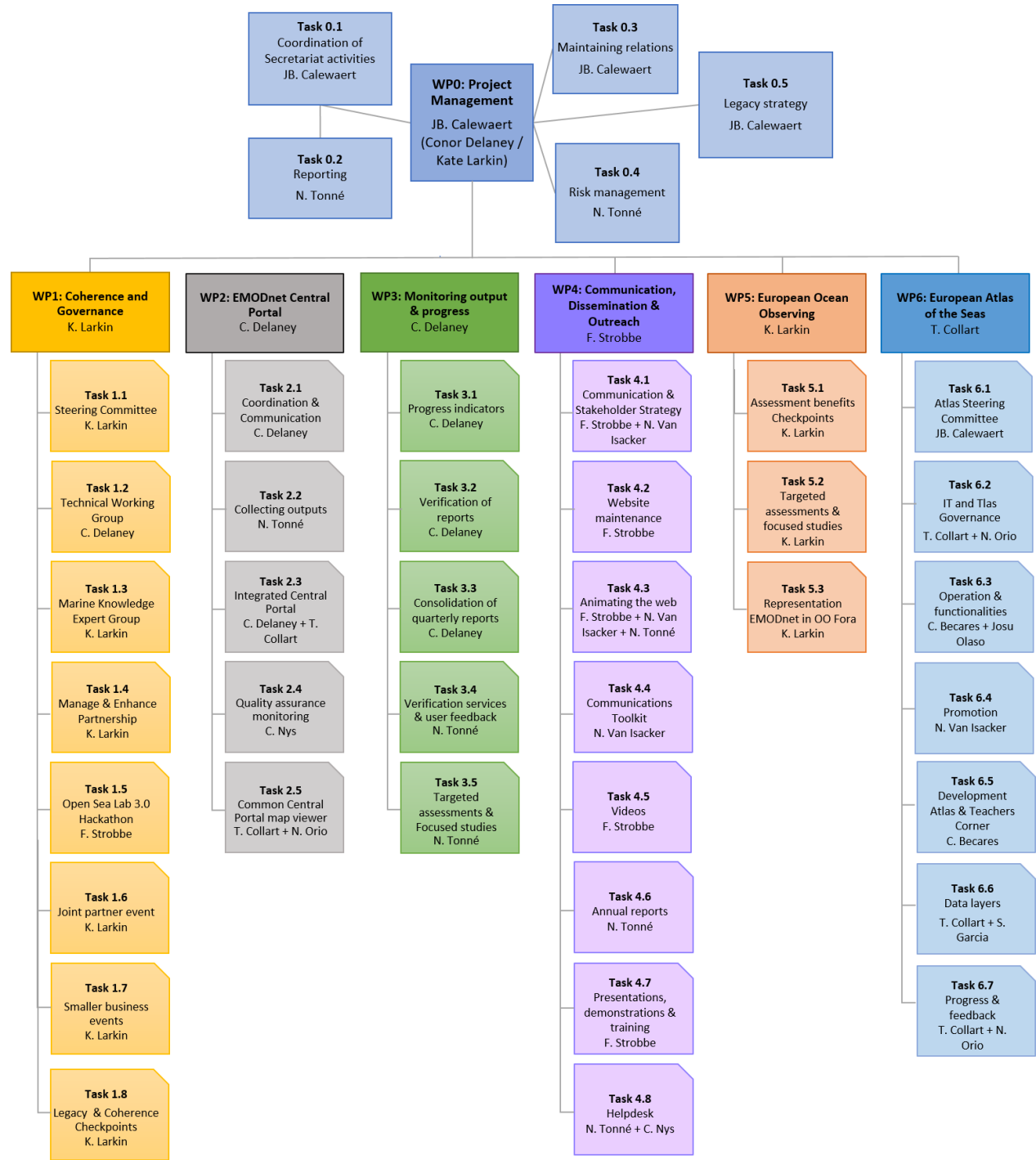
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Phase I - Limited sea basins														
				Phase II - Low resolution all basins										
								Phase III - Multi-resolution						
													Phase IV - Centralisation	

- Consortium



Fourth EMODnet Secretariat cycle (2022-2023)

- **European Marine Observation and Data Network (EMODnet)**
 - *Focus on supporting **centralisation** process, guide transition towards fully integrated online presence via EMODnet Central Portal*
 - *While remaining operational and maintaining/expanding all other essential services and tasks (**consolidation**)*
 - *Resulting in more user-friendly, useful and fit-for-purpose EMODnet*
 - *Will be more coherent, efficient and easier to manage – and ready for supporting Europe’s Green Deal and Digital Agenda – Mission Ocean priorities, Digital Twin Ocean public service etc.*
- **European Atlas of the Seas**
 - *Build on foundations established over the past four years*
 - *Further **development** of the Atlas*
 - ***Expand its impact** across Europe and beyond*
 - *Integrate Atlas in formal and informal **Ocean Literacy** curricula*
 - *Establish Atlas as a **communication tool***
- **EC Ocean Observing initiative**
 - *Dedicated support to DG MARE to advance activities in its work programme related to EOO*
 - *Assess the benefits of the EMODnet Sea-basin Checkpoints*



WP1 – EMODnet Coherence & Governance: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Lead organisation and reporting of EMODnet SC & TWG + [new group EMODnet4DecadeCoordination](#)
- Support organisation and reporting of EC MKEG meetings
- Manage and enhance EMODnet partnerships
- [Organise third Open Sea Lab hackathon \(Q1 2023\)](#)
- [Organised third EMODnet Open Conference and Jamboree \(2023\)](#)
- [Organise events for business sectors](#)
- Promote engagement of Sea-Basin Checkpoint coordinators and partners in EMODnet events

Team:

- Kate Larkin (coordination and implementation)
- Jan-Bart Calewaert (oversight)
- Nathalie Tonné (support)
- Dedicated support from Secretariat team members

WP1 – EMODnet Coherence & Governance: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 1.1 (Steering Committee)
- Task 1.2 (Technical Working Group)
- Task 1.3 (Marine Knowledge Expert Group)
- Task 1.4 (Manage and Enhance EMODnet partnership)
- Task 1.5 (Organisation of an Open Sea Lab hackathon)
- Task 1.6 (Organisation of Joint EMODnet partner and stakeholder event)
- Task 1.7 (Organise smaller EMODnet for business events)
- Task 1.8 (Legacy and coherence of EMODnet Sea-basin Checkpoints)

WP1 – EMODnet Coherence & Governance: Objectives, Tasks, Deliverables & Milestones

Deliverables & Milestones:

Deliverable	Name of Deliverable	Due Date (Month/M)
D1.1	Update to Steering Committee Terms of Reference and Workplan	M5 (updated annually, as required)
D1.2	Agenda and minutes of meetings, including the EMODnet Steering Committee, the EMODnet Technical Working Group, and the EC MKEG	M1-M24 (All minutes will be published on the Maritime Forum within 3 weeks of meeting date (unless otherwise discussed with DG MARE and CINEA) and delivered as a pack at the end of each calendar year (in Month 12 and 24, unless the contracting authority requests otherwise).
D1.3	Technical Working Group Terms of Reference and Workplan	M5 (updated annually, as required)
D1.4	EMODnet Open Sea Lab III Short report	M15 → postponed to March/April 2023
D1.5	Third EMODnet Open Conference and Jamboree Summary report	M24
D1.6	Short report of Sea-basin Checkpoint tele-meetings	M10, M22

Work Package	Milestone	Date due (Month)
WP1 - EMODnet Coherence and Governance	MS1.1 - 16 th EMODnet Steering Committee meeting	M4
	MS1.2 - 11 th Technical Working Group meeting	M4
	MS1.3 - 7 th Marine Knowledge Group Expert (MKEG) meeting	M4
	MS1.4 - 17 th EMODnet Steering Committee meeting	M10
	MS1.5 - 12 th Technical Working Group meeting	M10
	MS1.6 - 8 th Marine Knowledge Group Expert (MKEG) meeting	M10
	MS1.7 - 18 th EMODnet Steering Committee meeting	M16
	MS1.8 - 13 th Technical Working Group meeting	M16
	MS1.9 - 9 th Marine Knowledge Group Expert (MKEG) meeting	M16
	MS1.10 - 19 th EMODnet Steering Committee meeting	M22
	MS1.11 - 14 th Technical Working Group meeting	M22
	MS1.12 - 10 th Marine Knowledge Group Expert (MKEG) meeting	M22
	MS1.13 - Stakeholder Relations Management (SRM) tool operational	M9
	MS1.14 - Open Seal Lab 3.0 (hackathon) - kick-off	M6
	MS1.15 - Open Seal Lab 3.0 (hackathon) - Open Data training workshop and online hackathon package	M6
	MS1.16 - Open Seal Lab 3.0 (hackathon) - 3-day bootcamp (onsite)	M11/M12
	MS1.17 - EMODnet 3 rd Open Conference and Jamboree	M23
	MS1.18 - 1 st EMODnet for Business event	M6
	MS1.19 - 2 nd EMODnet for Business event	M12
	MS1.20 - 3 rd EMODnet for Business event	M18
	MS1.21 - 4 th EMODnet for Business event	M24

WP2 – Consolidation and Development of the EMODnet Central Portal: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Facilitate and support technical teams towards completion Centralisation
- Ensure relevant outputs other WPs feed into centralisation process integration
- Integration and transfer of static content from EMODnet thematic and DIP websites into CP
- Further development of the Central Portal
- Support development common EMODnet Central map viewer
- Review, assess and test the centralised access services from the thematic lots

Team:

- Conor Delaney (coordination and implementation)
- Tim Collart (support)
- Nathalie Tonné (support)
- Cécile Nys (support)
- Francis Strobbe (support)
- Bilbomática

WP2 – Consolidation and Development of the EMODnet Central Portal: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 2.1 (Coordination and communication with DG MARE, CINEA, VLIZ and thematic lots)
- Task 2.2 (Collecting outputs from Secretariat actions that support the centralisation process)
- [Task 2.3 \(Support the successful delivery of the EMODnet integrated Central Portal\)](#)
- Task 2.4 (Quality assurance monitoring for the Centralisation process)
- Task 2.5 (Common Central Portal map viewer)

WP3 – Monitoring EMODnet Outputs, Performance and Progress: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Define and collect progress indicators for EMODnet services
- Verify contractual reports from partners
- Publish consolidated EMODnet progress reports
- Review user-friendliness of the Central Portal at least once a year
- Development targeted assessments and focused studies related to EMODnet development

Team:

- Conor Delaney (coordination and implementation)
- Tim Collart (support)
- Nathalie Tonné (support)
- Cécile Nys (support)
- Trust-IT

WP3 – Monitoring EMODnet Outputs, Performance and Progress: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 3.1 (Progress indicators)
- Task 3.2 (Verification of contractual reports)
- Task 3.3 (Consolidating periodic reports into progress reports)
- Task 3.4 (Verification of EMODnet services and user feedback)
- Task 3.5 (Targeted Assessments and Focused Studies)

WP3 – Monitoring EMODnet Outputs, Performance and Progress

- **D3.6 – Targeted assessment – M12 // Potential topics:**
 - **Is EMODnet data as open and accessible as it could or should be?** Are the existing barriers reasonable and legitimate or can/should they be removed? If so, how could this be achieved?
This would be an assessment targeted specifically at the underpinning technical infrastructures of EMODnet (e.g. OBIS, SeaDataNet, CMEMS INSITU-TAC, ...) with regards to existing barriers to open data with recommendations on how to remove them for EMODnet users;
 - **Is EMODnet scalable?** EMODnet is a Spatial Data Infrastructure based architecture. This assessment would look at the technical architecture of EMODnet to determine how scalable it is to deliver reliable and fast services to an increasing number of users. The study will identify choke points and make recommendations on removing them;
 - **Assess the situation in terms of the data flow processes** between Members States and Regional Seas Conventions and EMODnet in view of streamlining the process.
- **D3.8 – Focused study – M24 // Potential topics:**
 - **The impact on data collection of the Open Data Directive** (Directive (EU) 2019/1024 on open data and the re-use of public sector information), which entered into force on 16 July 2019. Member States had until 16 July 2021 to transpose the new Directive into national law;
 - The Marine Strategy Framework Directive (**MSFD**; Directive 2008/56/EC) and its **relationship with EMODnet**;
 - **The relationship between EMODnet and Horizon Europe projects.** Is EMODnet ready to support Cloud based data driven projects? Is EMODnet ready to underpin the development of digital ocean twins and contribution to Destination Earth?

WP4 – EMODnet Communication, Dissemination and Outreach: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Widely disseminate information about EMODnet progress, outputs and activities
- Support partners to spread coherent messages using effective communication tools

Team:

- Francis Strobbe (coordination and implementation)
- Nathalie Van Isacker (support)
- Nathalie Tonné and Cécile Nys (dedicated support)
- Trust-IT

WP4 – EMODnet communication, Dissemination and Outreach: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 4.1 (Communication Strategy and Plan)
- Task 4.2 (Maintaining and further developing the content for a rich, intuitive, informative and dynamic EMODnet Website)
- Task 4.3 (Feed news items to the EMODnet website and other media outlets)
- Task 4.4 (Updating and further developing EMODnet's Communication and Dissemination Toolkit of printed and digital materials)
- Task 4.5 (Video updates and new releases)
- Task 4.6 (Annual reports)
- Task 4.7 (Delivering presentations, demonstrations and training)
- Task 4.8 (Queries on EMODnet)

WP5 – Supporting EC DG MARE’s activities related to Ocean Observation: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Assess benefits of EMODnet Sea-basin Checkpoints
- Support DG MARE in advancing activities related to Ocean Observation (OO) governance in the EU through targeted assessments and focused studies
- Continue strengthen dialogue with key European OO actors to align EMODnet with EOOS process
- Contribute targeted input, advice and expertise at third EMODnet Conference and Jamboree

Team:

- Kate Larkin (coordination and implementation)
- Nathalie Tonné (dedicated support)
- European Marine Board

WP5 – Supporting EC DG MARE’s activities related to Ocean Observation: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 5.1 (Assessment of the benefits of the EMODnet Sea-basin Checkpoints)
- Task 5.2 (Focused studies and Targeted Assessments on European Ocean Observation governance)
- Task 5.3 (Strengthening the representation of EMODnet at relevant Ocean Observation Fora)

WP6 – Maintain and further develop the European Atlas of the Seas: Objectives, Tasks, Deliverables & Milestones

Objectives:

- Ensure efficient and effective management and governance of the Atlas
- Maintain the operations and functionalities of the Atlas, while ensuring performance and scalability
- Increasing the visibility and use of the Atlas and the Teachers Corner
- Further development of services including the Atlas (GIS web-based viewer) and the Teachers Corner
- Maintain map layers up to date, while identifying needs to improve existing and add new data layers
- Monitoring progress and feedback to continuously improve the services and content of the Atlas and Teachers Corner driven by user needs
- Prepare a full and properly documented handover package at the end of the contract

Team:

- Tim Collart (coordination and implementation)
- Conor Delaney (co-lead)
- Bilbomática

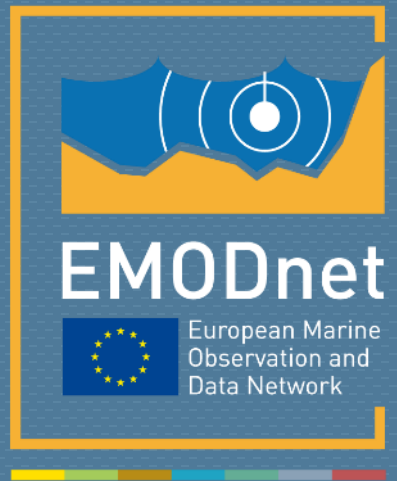
WP6 – Maintain and further develop the European Atlas of the Seas: Objectives, Tasks, Deliverables & Milestones

Tasks:

- Task 6.1 (Atlas Steering Committee)
- Task 6.2 (Ensuring project and IT governance)
- Task 6.3 (Maintaining the operations and functionalities)
- Task 6.4 (Atlas Promotion)
- Task 6.5 (Further development of the Atlas and the Teachers Corner)
- Task 6.6 (Maintaining and developing further the data layers of the portal)
- Task 6.7 (Monitoring progress and feedback)

Deliverables:

- Next slide



emodnet.ec.europa.eu

Your gateway to marine data in Europe





EMODnet

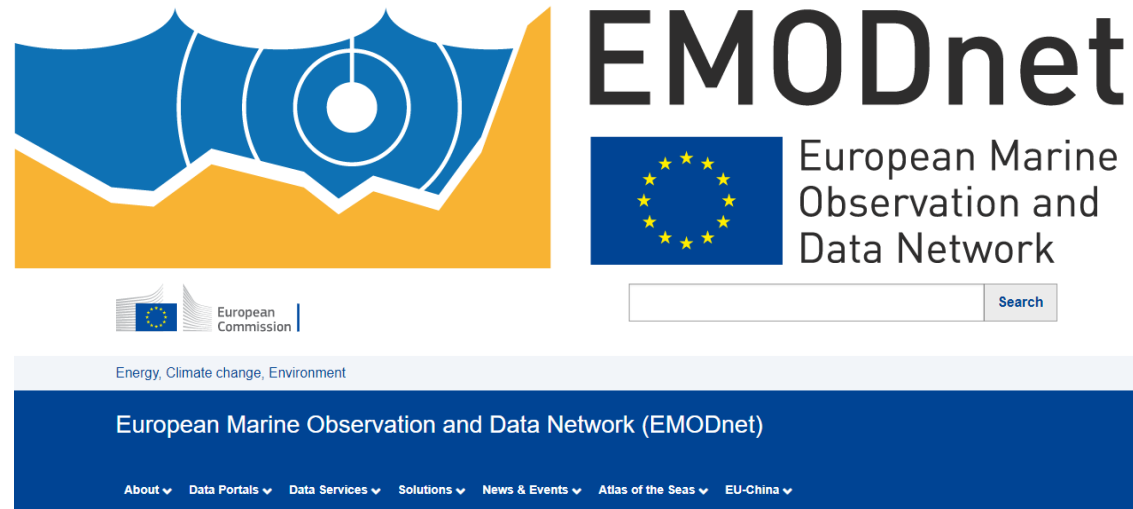


European Marine
Observation and
Data Network

The European Marine Observation and Data Network (EMODnet): Europe's *in situ* marine data service for a green and digital future

Date

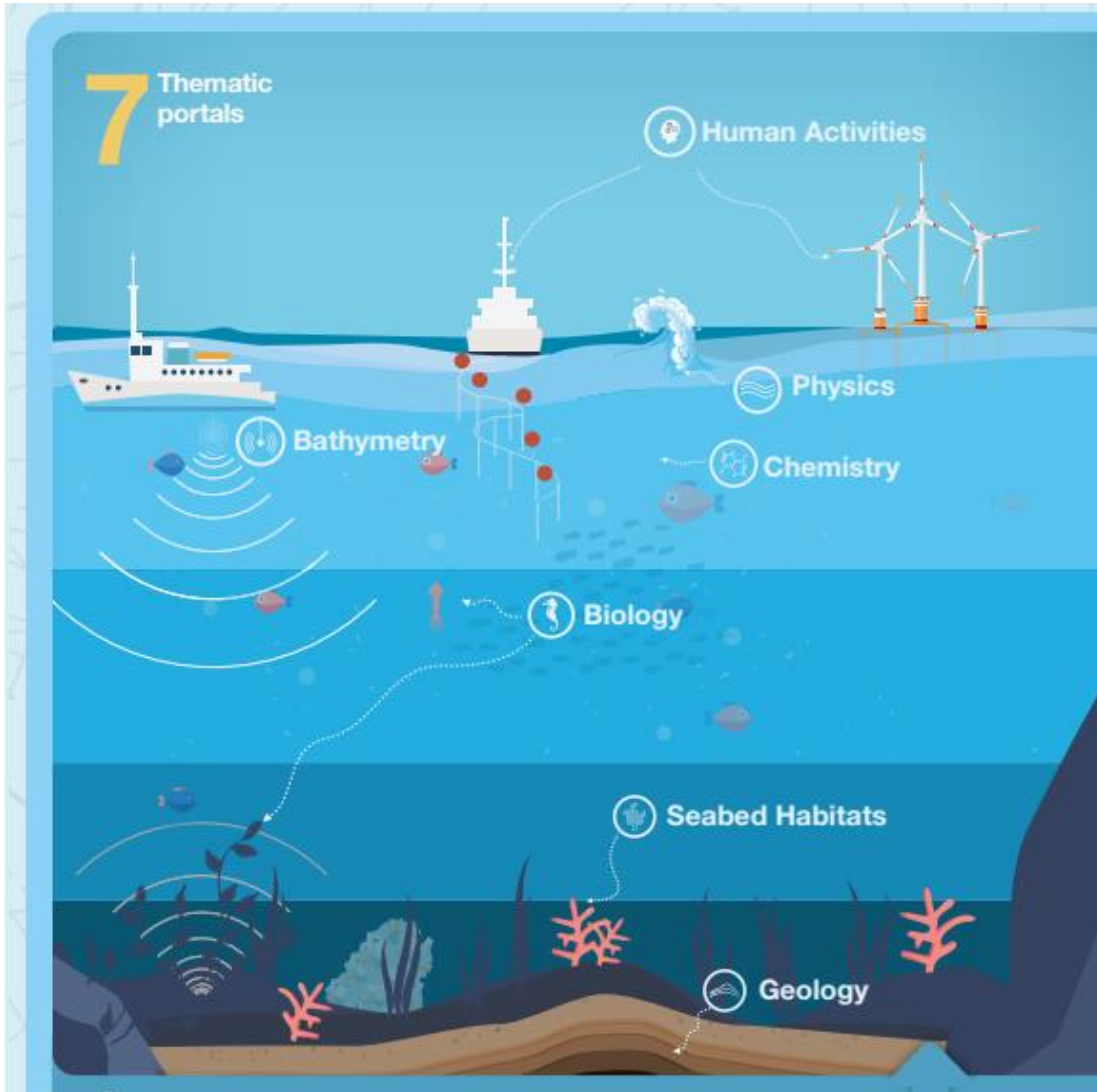
Indicate which Thematic portal
URL



The European Marine Observation and Data Network (EMODnet) is:

- a long-term *public* marine data service and marine knowledge initiative funded by the European Commission (DG MARE);
- a European authority and regional best practice in the marine data domain;
- a key marine knowledge initiative which together with Copernicus Marine Service provides the back-bone for the European marine data space, a key contributor to the Global Ocean Data Ecosystem and digital commons.

EMODnet: A trusted *in situ* marine data service, open and free for all



The **EMODnet Central Portal** offers a single, open and free entry point to all **7 EMODnet thematic**s, which offer:

- Harmonised, standardized and integrated datasets** – each collated from hundreds of data providers - spanning a **large diversity of marine environmental parameters** from the ocean surface to the seabed, and data on **human activities at sea**;
- Data products** (e.g., Bathymetry Digital Terrain model);
- Extensive and harmonised coverage** across European seas and beyond.

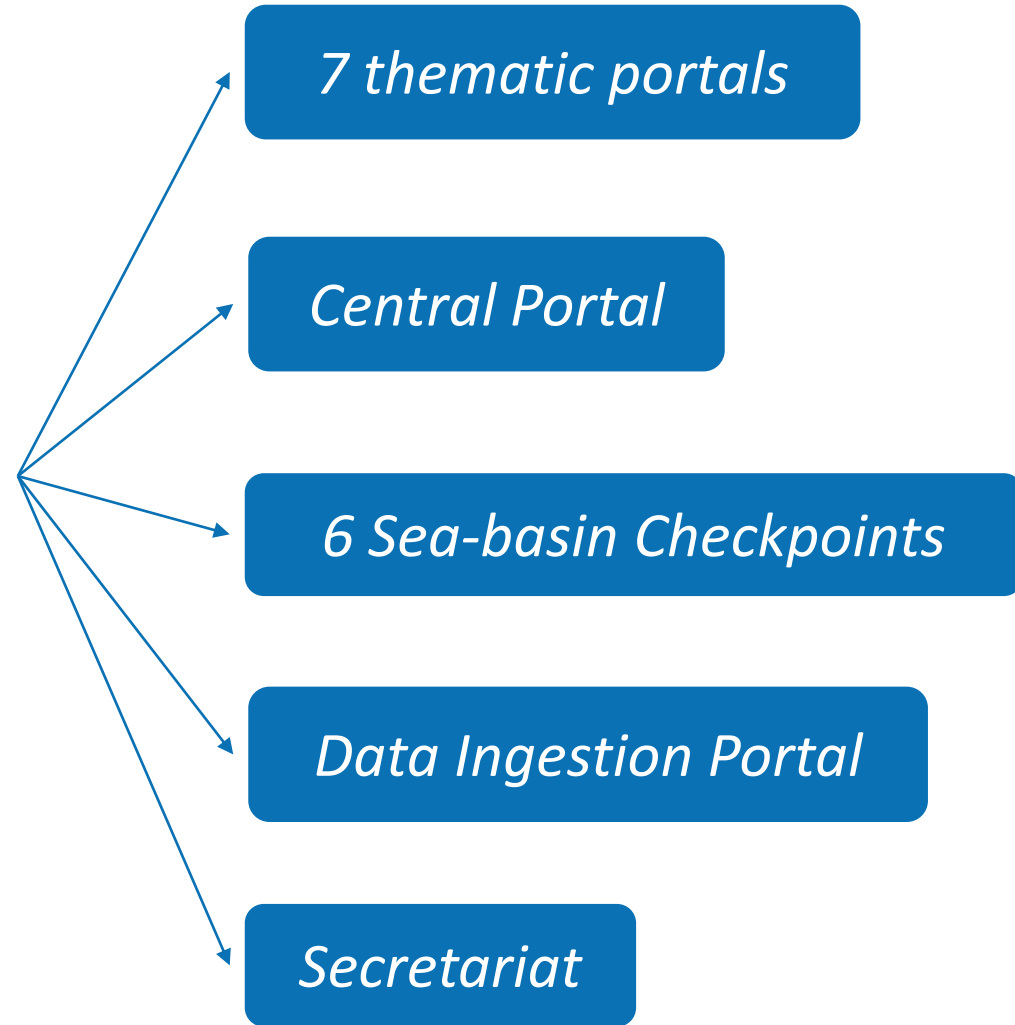
EMODnet Structure



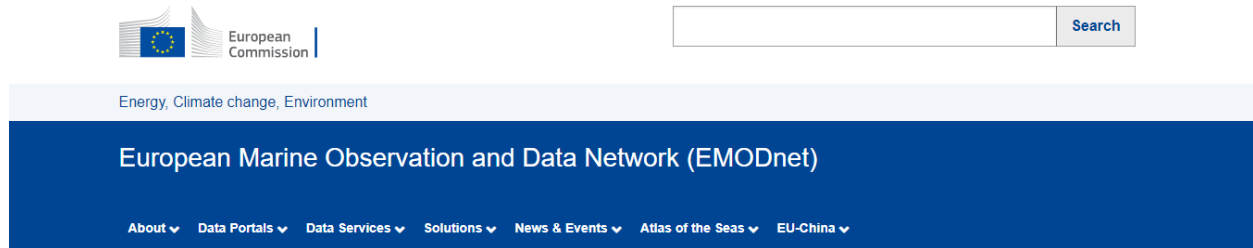
EMODnet



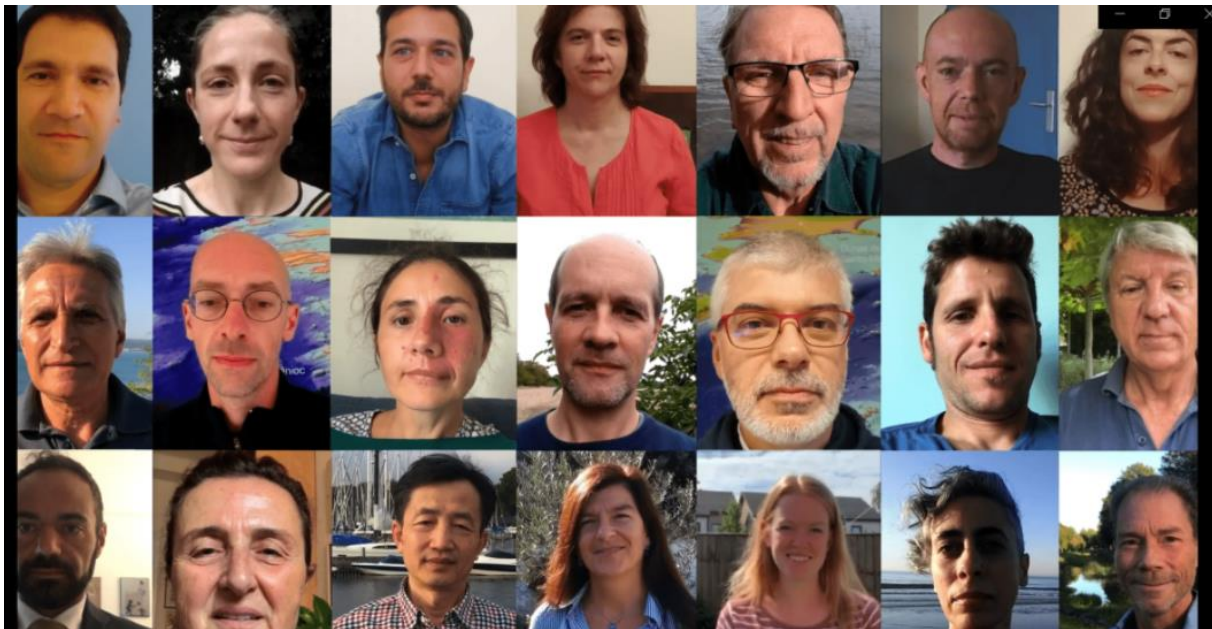
European Marine
Observation and
Data Network



EMODnet: Made possible by a large community of *in situ* marine data experts connecting ocean observations with data infrastructures and users for a user-driven, operational service



More than a decade of partnership, collaboration and excellence



- Large network of >120 organizations and hundreds more across the wider marine data landscape of data producers, providers, users;
- Expert community of thematic and data ingestion experts specializing in data management, visualization, services for *in situ* marine domain data; Close collaboration across the Marine Knowledge Value Chain e.g., EuroGOOS, Marine data infrastructures e.g., SeaDataNet, Research Infrastructures, Copernicus Marine, ICES, User community (research, policy, industry, civil society, citizens), etc;
- A Secretariat of marine domain and data experts for coordination and cohesion (technical to science-policy, ocean observation to data services and users), monitoring progress and impact, partnerships (EU and global), communication, dissemination, ocean literacy.

EMODnet evolution: A decade of achievements

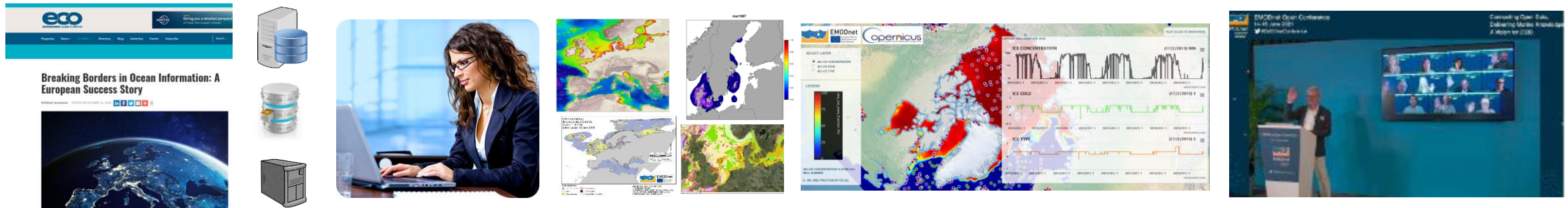
- From regional to pan-European coverage and onwards to global remit



- From a small network to a movement - bringing people & ideas together

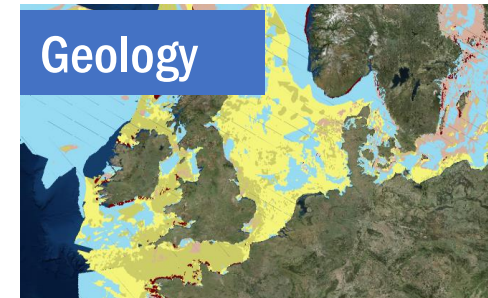
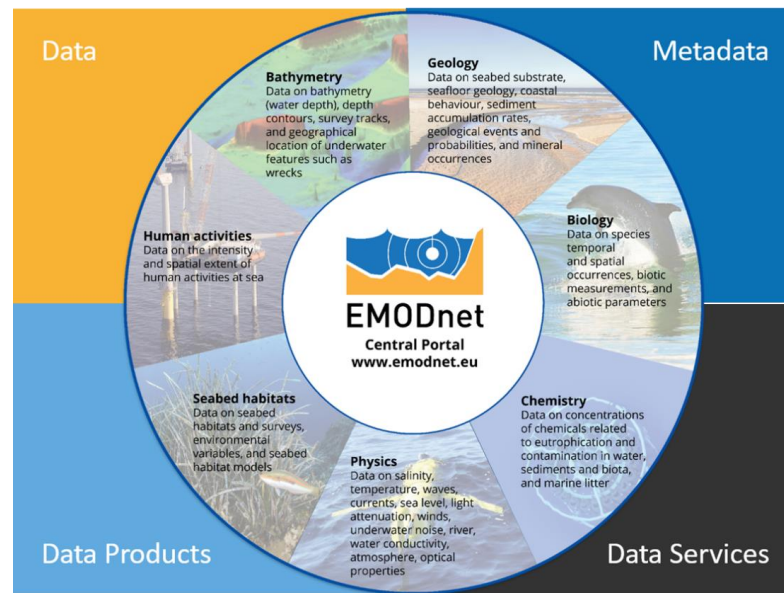
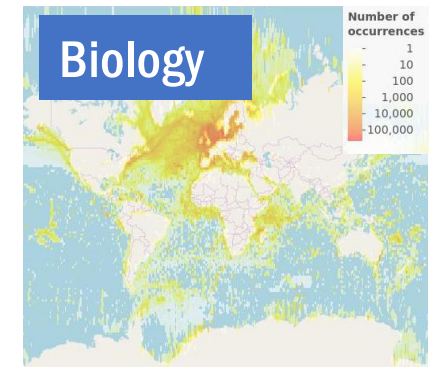
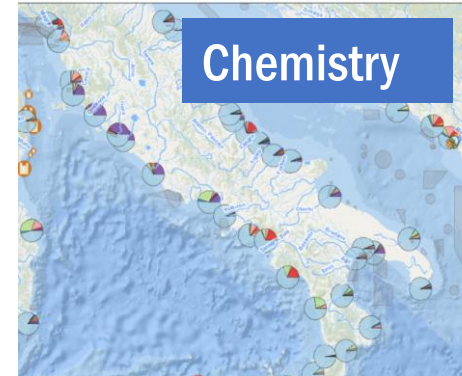
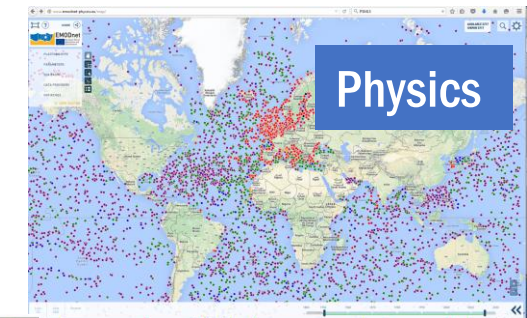


- From prototypes to a fully operational, mature and user-driven distributed infrastructure



EMODnet: Added value

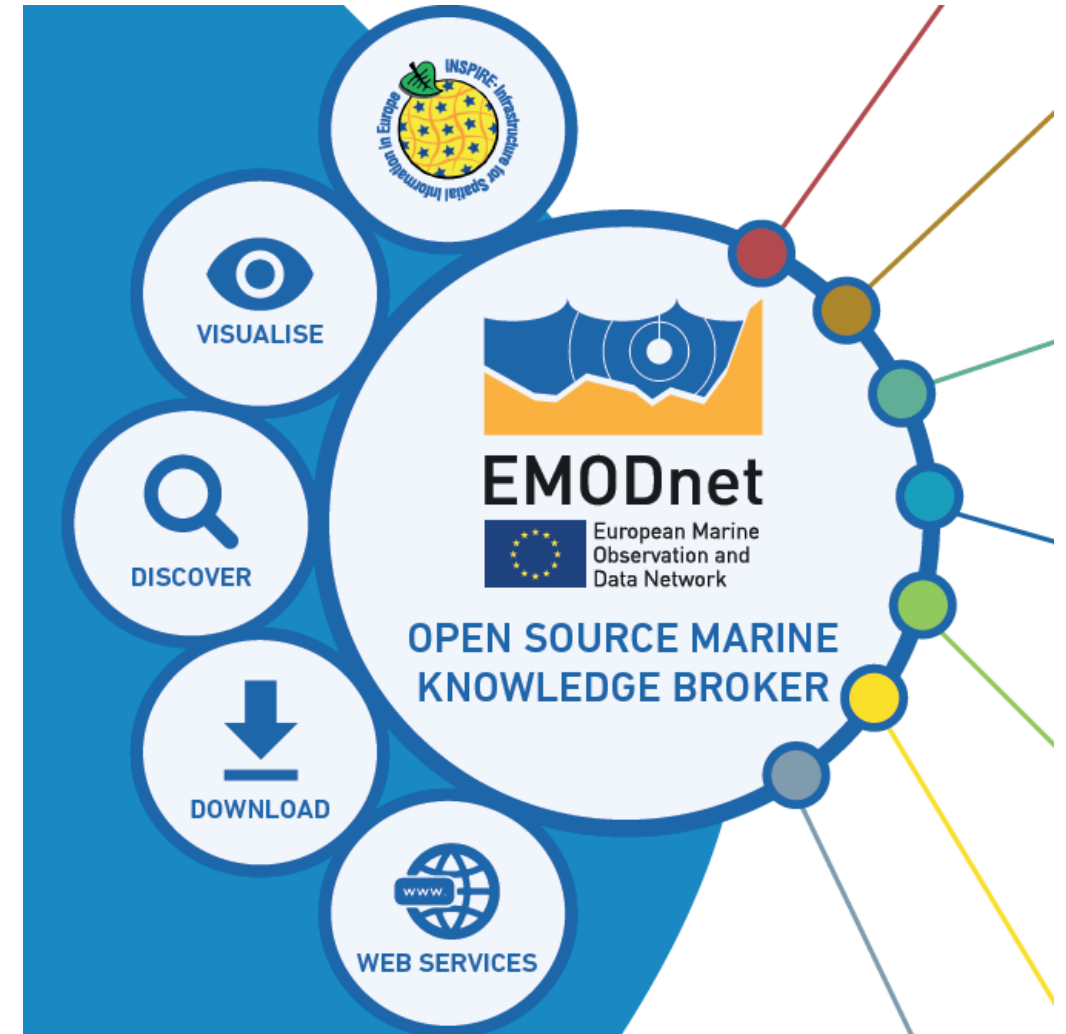
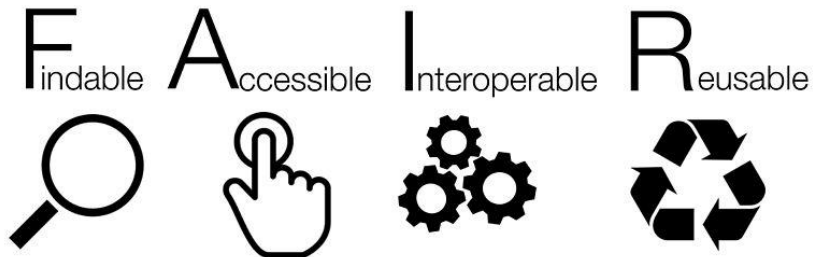
- Most **comprehensive** (parameter diversity, resolution and coverage) *in situ* marine environmental and human activities data and data products service in Europe;
- Added value **marine data products produced by domain experts** that are not offered by other marine data services in Europe or beyond;



EMODnet: Added value

EMODnet data standards, services and web services

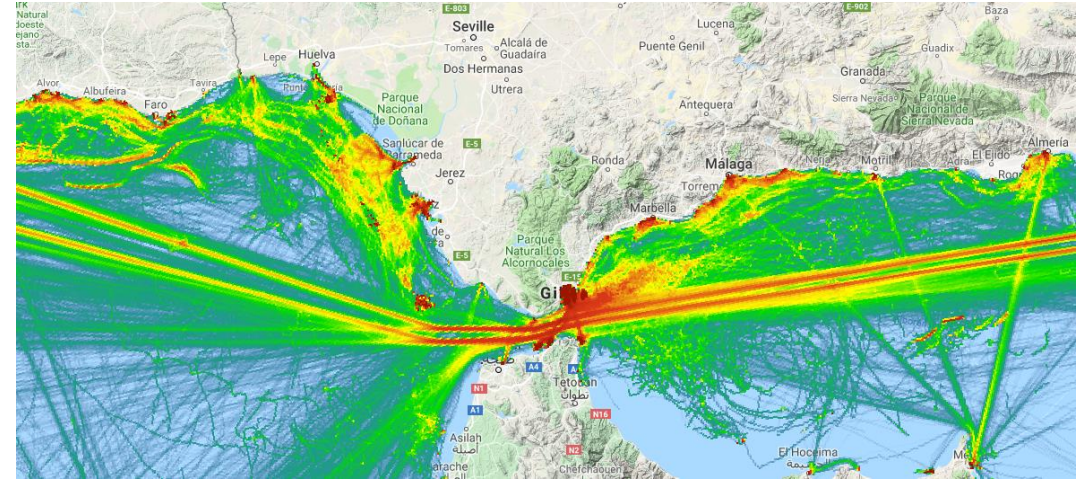
- INSPIRE and FAIR data principles
- Aggregated, harmonized multi-parameter data sets
- Searchable metadata
- Data services (maps, query)
- Integrated data products
- Web services e.g. OGC, machine-machine readability e.g. WMS, WFS, WebS



EMODnet: Added value

Collect data once, use many times.
Visualize and make data come alive.

- reduce uncertainty;
- increase productivity and cost-effectiveness;
- add value and impact to your data;
- stimulate innovation.



HUMAN ACTIVITIES

Vessel density by EMODnet Human Activities. The map is a grid with 1 square kilometre cells, each with a colour gradient for vessel density.

EMODnet: User metrics: Unique visitors to EMODnet services

Number of unique visitors in 2021

89753



EMODnet Central Portal: Users already use EMODnet CP as their principal gateway to EMODnet data and data products, across all thematics

Technical update: the EMODnet Portals are centralising

Starting from 2021, all Thematic Portals (gateways) will be centralised and brought into the EMODnet Central Portal following a stepwise approach (on a portal by portal basis). The Central Portal will become the one-point-of-entry to marine data, data products and services.

23356



9855



21563



8264



26104



9736



6855



3401



HUMAN ACTIVITIES

Aggregate extraction - Algae production - Aquaculture - Cables - Cultural heritage - Dredging - Environment - Fisheries - Hydrocarbon extraction - Main ports - Ocean energy facilities - Other forms of area management/designation - Pipelines - Waste disposal - Vessel density - Wind farms



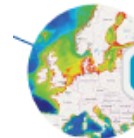
GEOLOGY

Seabed substrate - Seabed accumulation rates - Seafloor lithology, stratigraphy and fault maps - Coastal behaviour - Geological events distributions - Mineral occurrences - Submerged landscapes - Quaternary geology - Geomorphology - Boreholes locations - Seismic tracks



BIOLOGY

Phytoplankton - Zooplankton - Macro algae - Seagrass - Fish - Reptile - Bird - Sea mammals - Benthos - Functional traits - Introduced species - Protected species - Indicator species



BATHYMETRY

Digital Terrain Model - Survey tracks and bathymetric survey data - Source references - Depth contours



SEABED HABITATS

Survey point data - Broad scale seabed habitat map - Environmental variables influencing habitat type - Individual seabed habitat maps from surveys - Modelled maps of specific habitats - Composite data products



CHEMISTRY

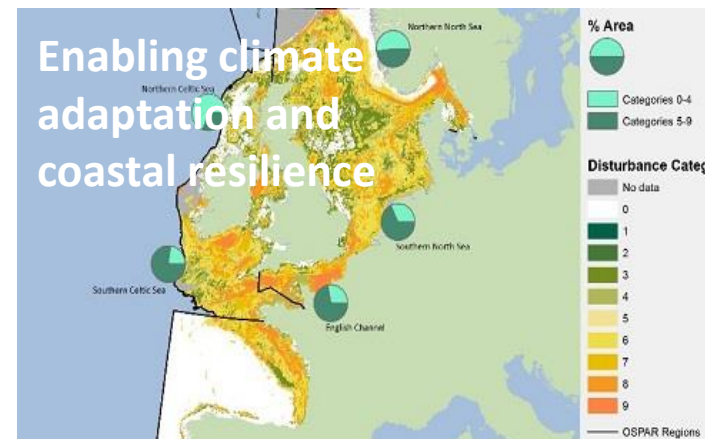
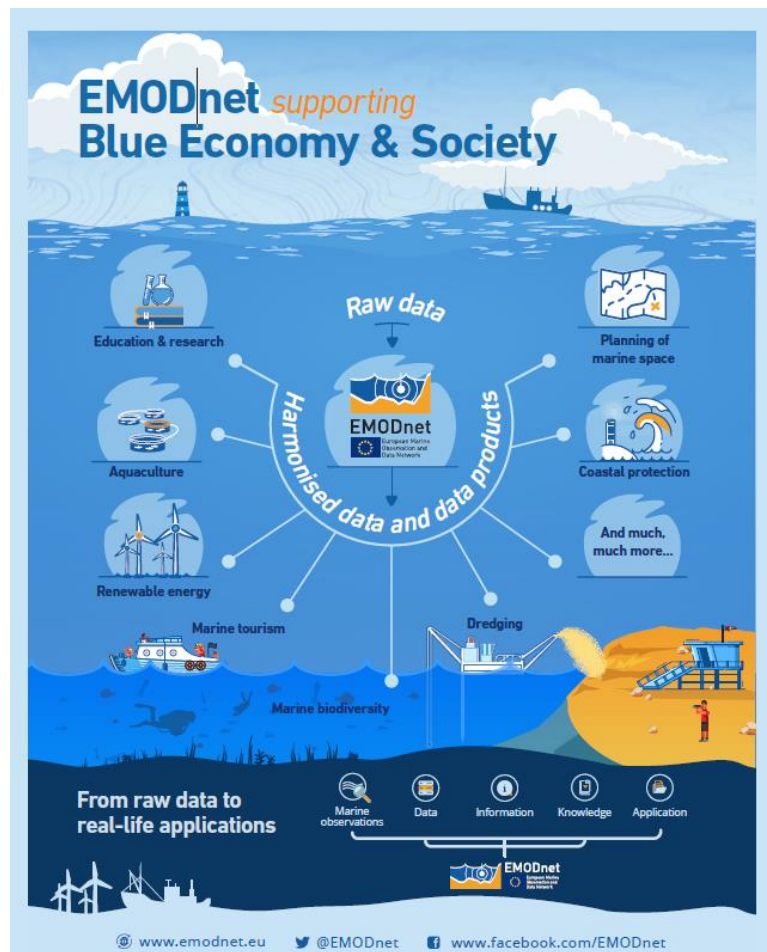
Acidity - Antifoulants - Chlorophyll - Dissolved gases - Fertilizers - Heavy metals - Hydrocarbons - Marine litter (micro, beach, seafloor) - Organic matter - Pesticides and biocides - Polychlorinated biphenyls - Radionuclides - Silicates



PHYSICS

Wave height and duration - Sea temperature - Wind speed and direction - Salinity - Horizontal speed of the water column - Water clarity - Changes in sea level - Inflow from rivers - Water conductivity / biochemical parameters - Atmospheric parameters - Underwater noise

EMODnet: An operational service delivering marine data, information and knowledge for research, policy, blue economy and society



EMODnet Associated Partnership Scheme: A network to connect and enhance dialogue with the private sector to maximise marine data sharing and use by and for all



Get value from ocean data

EMODnet for business:
A wealth of marine data, products and services to support your company

THE BENEFITS

- 1 Save costs**
Collecting marine data can be very costly. By providing access to already existing marine data, EMODnet improves offshore business' and operator's efficiency and saves costs in gathering and processing marine data for operational and planning purposes.
- 2 Develop new products and services**
By providing harmonised open data and products, EMODnet offers the material from which innovative start-ups and companies can leverage new products and services, or improve existing ones.
- 3 Add value to your own data**
Enrich your company's data with datasets available via EMODnet and generate better information to plan and implement your business activities.
- 4 Improve knowledge and reduce risks**
EMODnet data resources are essential for your maritime investment decisions as they help to reduce uncertainty and improve our ability to forecast the behaviour of the sea. They also help you to understand and respond to the impacts that climate change may have on your business.

<https://emodnet.ec.europa.eu/en/associated-partner-organisations>

EMODnet: Flagship data products based on high resolution, standardised and harmonised data from diverse sources

e.g., EMODnet Bathymetry data product: Digital Terrain Model (DTM)



The advanced EMODnet DTM offers **many benefits** to users:

- resolution increased to $1/16 * 1/16$ arc minutes (circa $115*115m$);
- powerful 3D visualisation functionality;
- faster representation of the complexity of the map;
- expanded coverage: European seas + European part of the Arctic Ocean and Barents Sea;
- inclusion of Satellite Derived Bathymetry data products, in particular for coastal stretches of Spain and Greece.

“With its high resolution, quality data & Digital Terrain Model (DTM) easily accessible, EMODnet is the International Marine and Dredging Consultants (IMDC)’s prime source of bathymetry data & data products for projects in Europe

EMODnet: A EU focal point for Marine Spatial Planning data & national plans

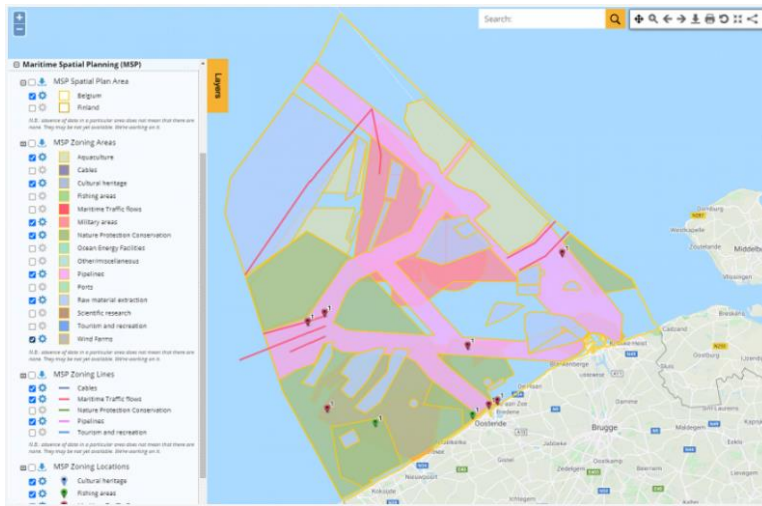
«EMODnet Human Activities is a focal point for EU Member State Marine Spatial plans and in the future this can be expanded to include MSP data products, for examples at the European level».

Joni Kaitaranta, HELCOM



EMODnet provides a EU focal point for:

- Access to transboundary *in situ* marine environmental and human activities data, essential for MSP, as a tool to manage the use of our seas and oceans coherently and to ensure that human activities take place in an efficient, safe and sustainable way;
- European Member State/National Marine Spatial Plans through EMODnet Human Activities (Belgium, Denmark, Finland and Latvia already available, more to follow)
- EMODnet Human Activities works in close co-operation with Regional Sea Conventions, the EC JRC, Technical Group (TG) on Data for MSP towards a technical solution for harmonising EU MSP within EMODnet.



MSP Spatial Plan Area for Belgium, EMODnet Human Activities



EMODnet Human Activities Map viewer and data visualization (centralising by end 2022)

EMODnet: User testimonials

EMODnet for the Blue Economy: Offshore Renewable Energy

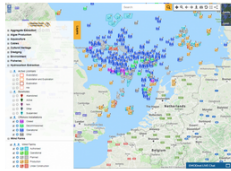
«We realise the importance of EMODnet data and data products e.g. Bathymetry, Physics in reducing uncertainty and improving offshore energy operators costs in micro siting of cables». Gerben de Boer, Van Oord, EC MKEG member



Human Activities

EMODnet wind farm and hydrocarbon extraction datasets to support the development of wind farm projects

The EMODnet Human Activities portal has become a vital tool for C2Wind, a Danish company working in the wind industry. Wind farm and hydrocarbon extraction datasets are the most commonly explored datasets, identifying locations of already existing structures. Additional datasets on occasion are surveyed to provide the full extent of human activities. This crucial information is used in the preliminary phases of projects, determining areas of interest for the development of wind farm projects.



EMODnet for marine policy

«The collaboration between EMODnet Chemistry and EC JRC has led to a common database with harmonised beach litter data from 300 beaches across Europe. This is a key contribution to enable Member States to carry out marine litter assessments for the Marine Strategy Framework Descriptor 10, and as a direct input to develop the EU Single Use Plastics Directive ».

Georg Hanke, EC JRC



Chemistry

11 May 2021

EMODnet Chemistry: a point of reference for management of marine litter data in the context of the EU Marine Strategy Framework Directive

EMODnet Chemistry provided valuable contributions to the completion of a **Joint List of Litter Categories for Marine Macrolitter Monitoring** that includes the litter types occurring in the coastal and marine environment. The list can be used to enable comparable monitoring across the European Seas and beyond, as well as across different compartments of the marine environment.

EMODnet: Use cases

Seabed Habitats

10 Nov 2020

EMODnet Seabed Habitats contributes to the debate on the decommissioning of offshore infrastructure

This study was published by a group of authors, including representatives from a range of universities and research organisations. The lead author is the **University Technology Sydney's fish ecology lab**, which aims to provide novel research to inform on the sustainability of the oceans and their fish populations. They actively engage in public debate on a wide range of issues affecting the marine environment, and also act as a hub for student research training. Their studie

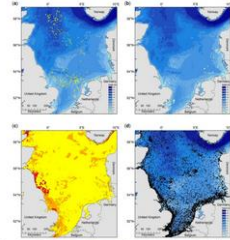


Figure 6. Copernicus Marine Service (CMSS) Seabed Habitats (SbH) data product. The SbH data product is a global map showing seabed habitats derived from satellite altimetry and bathymetry data.

Biology Chemistry Human Activities Physics Seabed Habitats

15 Jun 2021

EMODnet partners with Copernicus Marine for a joint data catalogue supporting evaluation of Good Environmental Status for the Marine Strategy Framework Directive.

A joint Copernicus Marine and EMODnet data catalogue for the Marine Strategy Framework Directive (MSFD) has been developed. It gathers all relevant marine data products from **Copernicus Marine Service** and **EMODnet** for all the MSFD descriptors (except Descriptor 4) in the Baltic Sea.



MSFD-02-03-05-06-07-08-09-10-11

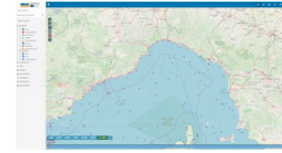
Continue reading

Bathymetry

Physics

EMODnet Bathymetry & Physics data supporting Sea Situational Awareness for tourist navigation

SINDBAD+, is a project co-funded by the European Commission (POR FESR 2014-2020), that aims at providing a service that can predict weather conditions and analyse its consequences on the navigation depending on the characteristics of the boat such as length, width and depth. The service targets luxury and leisure boaters. The SINDBAD partners use EMODnet Physics and EMODnet Bathymetry to initiate and validate data forecast models.



Bathymetry

Improving storm surge modelling in the North Sea

Changes in coastal sea level caused by the combined effect of surface winds and air pressure have the potential to cause widespread coastal flooding, damage to infrastructure and loss of life.

The low-lying lands bordering the North Sea are particularly vulnerable as was seen most notably in the catastrophic events of 1953. It is expected that climate change will increase the frequency and severity of such events.

Physics

31 Jan 2022

Development of a new sea level product covering European Seas and the Global Ocean

The Euro-Mediterranean Center on Climate Change (CMCC) has developed a first version of a web application with the "Total Sea Level" variable from EMODnet Physics. This solution presents a demonstrator of end-user application and decisional support dashboard systems to support public authorities in their daily management activities.

Seabed Habitats

19 Sep 2020

OSPAR intermediate assessments: evaluation the ecological status of the marine environment in the NE atlantic

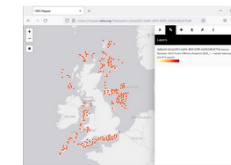
Users identified the main areas where disturbance from bottom-contact fishing was predicted to cause the most significant impact to benthic marine habitats. This work fed directly into the OSPAR Intermediate Assessment (2017) with future implications towards the Marine Strategy Framework Directive assessments.

Biology Seabed Habitats

31 Jan 2022

Holistic, standards-based access and interoperability for marine biodiversity data

Collaboration between EMODnet Biology, EMODnet Seabed Habitats and OBIS (Ocean Biodiversity Information System) has facilitated richer dataset publication and ensured the greatest volume of high-quality species and habitat data are available for reporting, assessments and informed decision making.



Continue reading

Physics

04 Mar 2021

EMODnet-Physics a win-win cooperation with OceanOPS to improve performance monitoring for Ocean Observing Platforms, data and information systems

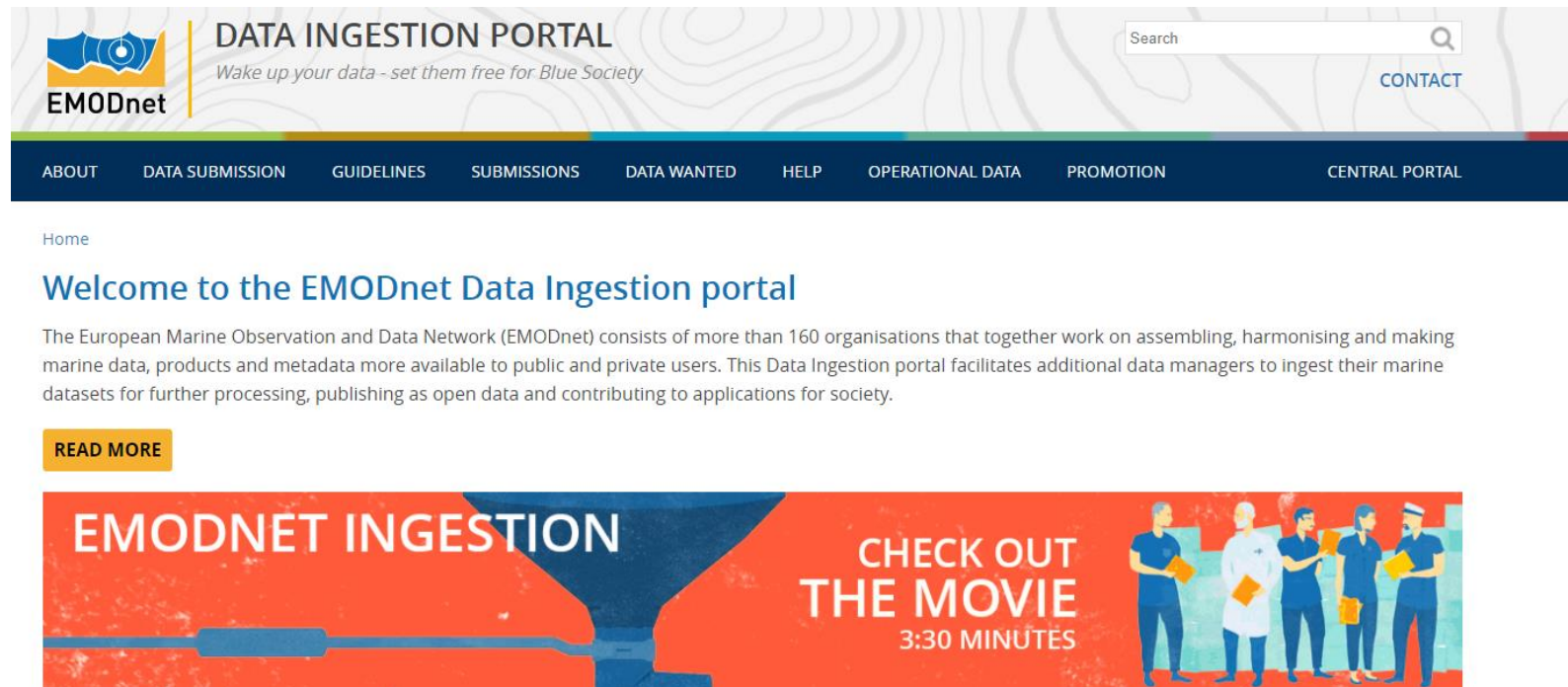
In close collaboration with OceanOPS, EMODnet Physics is connecting multiple data sources with the OceanOPS metadata repository thanks to the unique identification system managed by OceanOPS. This is automatically reducing the duplication issues related to multi data sources and increasing the quality of the information system developed by EMODnet Physics. At the same time, EMODnet Physics is connecting OceanOPS to networks that are not yet under its radar to continuously improve the monitoring of the Ocean Observing systems operating in the global ocean.



Part 1.
Marine habitats

EMODnet Data Ingestion: a public service for ingesting data from diverse data collectors and providers

- EMODnet Data Ingestion is aimed at marine data producers from the private sector and wider society, to help support data sharing by maritime industry, civil society, etc.



The screenshot shows the EMODnet Data Ingestion Portal website. The header features the EMODnet logo, the title "DATA INGESTION PORTAL", the tagline "Wake up your data - set them free for Blue Society", a search bar, and a "CONTACT" link. A dark blue navigation bar contains the following menu items: ABOUT, DATA SUBMISSION, GUIDELINES, SUBMISSIONS, DATA WANTED, HELP, OPERATIONAL DATA, PROMOTION, and CENTRAL PORTAL. Below the navigation bar, the page content includes a "Home" link, a heading "Welcome to the EMODnet Data Ingestion portal", and a paragraph describing the portal's purpose: "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." A yellow "READ MORE" button is positioned below the text. At the bottom of the page, there is a red banner with the text "EMODNET INGESTION" on the left, "CHECK OUT THE MOVIE 3:30 MINUTES" in the center, and an illustration of five people in professional attire on the right.

<https://www.emodnet-ingestion.eu/>

EMODnet data for society: The European Atlas of the Seas

The screenshot shows the European Atlas of the Seas website interface. The top navigation bar includes the European Commission logo, language selection (English), social media links (Follow us, Give feedback), and a search bar. The main content area features a search bar for layers and a list of predefined maps. A map of Europe is displayed, showing regional employment data in the secondary sector. A legend on the right side of the map provides a color-coded scale for the percentage of secondary sector employment relative to the national average (100%).

Employment in the secondary sector
No data
Country border
NUTS 2 region border
< 60 %
60 - 80 %
80 - 90 %
90 - 100 %
100 - 110 %
110 - 120 %
120 - 135 %
> 135 %
No data

Unemployment

Employment in the secondary sector

eurostat Employment in the secondary sector is employment in fisheries related activities, which are not considered as active fishing activities. The secondary sector of the economy produces finished goods from the raw materials extracted by the primary economy. All manufacturing, processing, and construction jobs lie within this sector. This map shows the share of secondary sector employment in overall employment in regions, in comparison with the national average that equals 100. When the indicator's value is below 100, the value in the region is below the national average. When the indicator's value is above 100, the value in the region is above the national average.

Powered by **EMODnet**

- The EC **European Atlas of the Seas** societal communication tool provides maps relating to marine environment, human activities at sea (blue economy) and coastal communities;
- Driven by **EMODnet** and wider marine data services including socio-economic data;
- Raises awareness of Europe's seas and coasts in the context of the EU's Integrated Maritime Policy and EU Green Deal;
- Pre-defined maps with text descriptions and legends, and functionalities for the user to create their own maps;

EMODnet data for society: The European Atlas of the Seas

The image displays three overlapping screenshots of the European Atlas of the Seas website, demonstrating its multilingual capabilities. The top screenshot is in English, the middle in Dutch, and the bottom in French. Each screenshot shows the website's header with the European Commission logo, navigation links, and a search bar. The main content area features the title of the atlas in the respective language and a call to action to explore the seas and coasts of Europe. The bottom screenshot also shows a search bar and a grid of predefined maps for 'Europe', 'Tourisme', and 'Nature'.

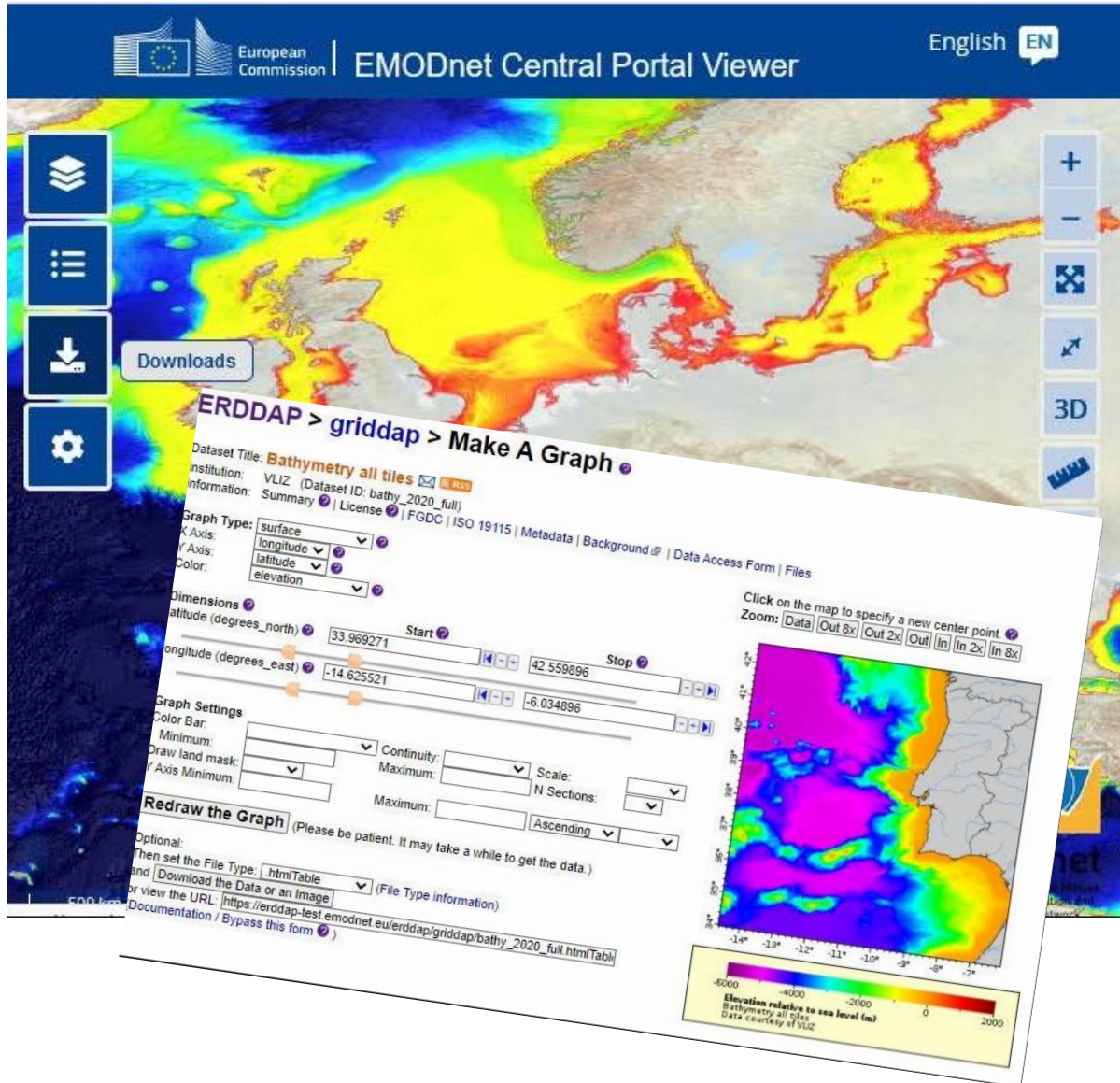
- Available in 24 EU languages;
- A tool for education and ocean literacy with a teachers' corner with resources developed with education professionals;
- Contributing to the EU4Ocean European Ocean Literacy Network;
- User tutorial:

<https://www.youtube.com/watch?v=QdsZUIqAlns>



<https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1482>

EMODnet: Evolution of services towards a **simplified** user experience



In 2021-2022 EMODnet is centralising all its services

What will EMODnet Centralisation look like for users?

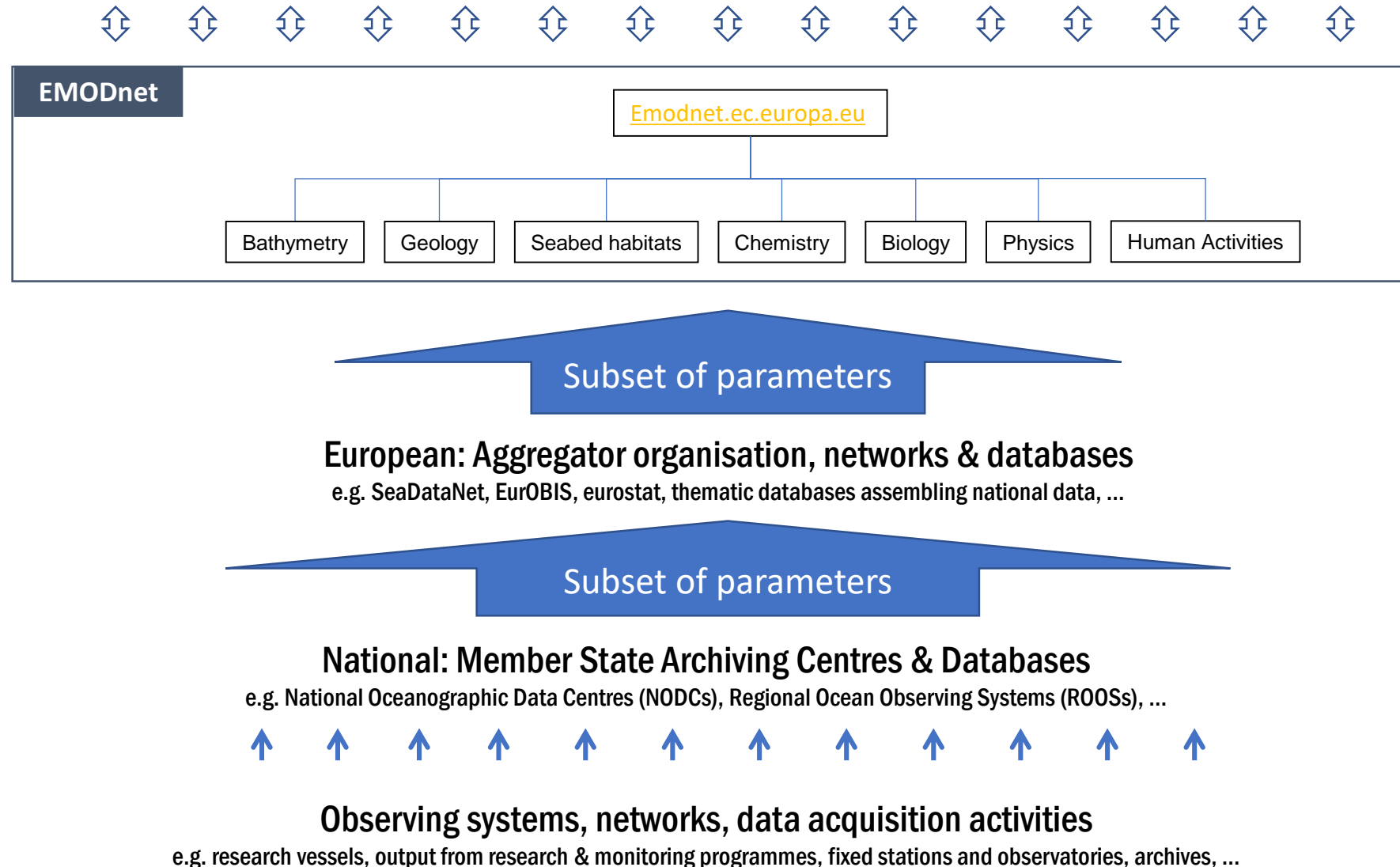
- Common Map viewer
- Central Portal Catalogue (GeoNetwork)
- New EMODnet Central Portal ERDDAP server

How will the user experience be simplified?

- Easier access to all EMODnet data and data products through a Common Map viewer
- Direct downloads possible from the ERDDAP server (no logins required)

Centralisation of all EMODnet services is a major technical upgrade which is ongoing until end 2022.... watch this space for updates and announcements!

EMODnet: Connecting ocean observations and marine data to users



EMODnet: Connecting ocean observations and marine data to users

The screenshot displays the EMODnet website interface. At the top, there is a navigation bar with the European Commission logo, a 'Log in' button, a language selector set to 'English', and a search bar. Below this, a breadcrumb trail reads 'Law > Ocean observation – sharing responsibility'. The main content area is titled 'About this initiative' and contains a 'Summary' section. The summary states that ocean observation is essential for the Green Deal and that the initiative aims to achieve a common EU approach. It lists two key proposals: joint planning of observation activities and a framework for collaboration. To the left of the main content is a sidebar with a vertical timeline. The 'Roadmap' section shows a 'Feedback period' from 22 October 2020 to 19 November 2020, with a 'FEEDBACK: CLOSED' status. Below the main content, there is a video player showing a virtual meeting titled 'EC Ocean Observation event (18 June 2021)'. The video player shows a grid of participants in a virtual meeting. The page also features a search bar, a 'EU Login' button, and various sidebars for 'Related issues', 'Related links', and 'More like this'.

- The EMODnet Secretariat and wider network support the EC Ocean Observation – sharing responsibility initiative that aims to promote more coordination in ocean observation and marine monitoring and data collection at the national Member State level;
- EMODnet co-organize community events e.g., large Conferences (EOMS Conference 2018), expert workshops (EC Ocean Observation workshop, 18 June 2021), studies and targeted assessments (2022-)

[ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12539-Ocean-observation-sharing-responsibility_en](https://webgate.ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12539-Ocean-observation-sharing-responsibility_en)

<https://webgate.ec.europa.eu/maritimeforum/en/node/6188>

EMODnet: Strategic partnerships for an interoperable European and Global Data Space



Services Opportunities Access Data Use Cases User Corner About

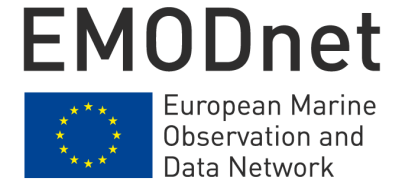
Copernicus Marine and EMODnet: a fruitful collaboration for the benefit of users

Home > News > Copernicus Marine and EMODnet: a fruitful collaboration for the benefit of users

- Copernicus Marine Service is a domain leader in satellite-derived data, modelling capability, forecasting and prediction and utilizes *in situ* marine data as validation for remote-sensing and as input to models;
- Copernicus Marine Service and EMODnet have strong collaboration at coordination and operational levels as two key, long-term marine data initiatives of the European Union with operational data flows, cross-validation of data, joint events, use cases, etc.



EMODnet Physics – Copernicus Marine Service



- Collaboration since the programmes started > decade ago (and MoU since 2016)
- Collaboration for ingesting new operational sources
- Promotion of common standards to facilitate interoperability (FAIR)



2015 HFR side event EuroGOOS conference

2016 HFR integrated in EMODnet Physics

2018 CMEMS SE INCREASE → CMEMS uptake

2019 EU HFR NODE

2020 HFR integrated into INSTAC products



2019 Fishing vessels sensors identified as potential new source

May 2020 *Fishing for Data* Workshop

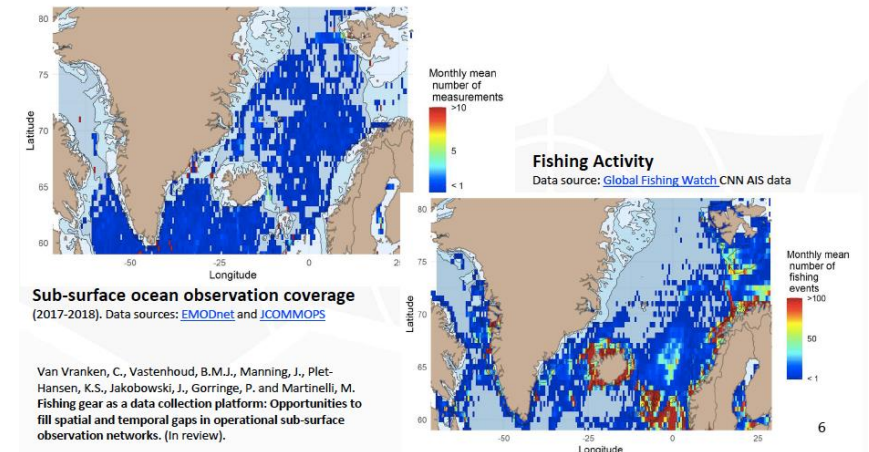
June 2020 Data ingested/linked in EMODnet Physics INSTAC took over for phase 2

Oct 2020 OceanOPS to assign unique WMO Id to BDC sensors

Jan 2021 INSTAC completed phase 2 process and BDC data included in GLO_013_030



158 sites



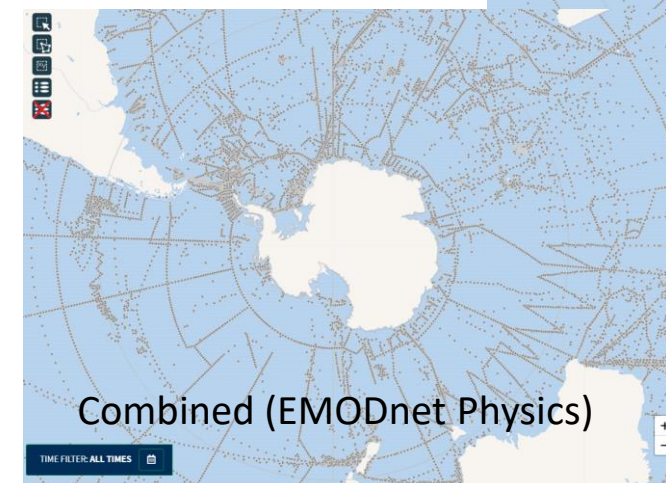
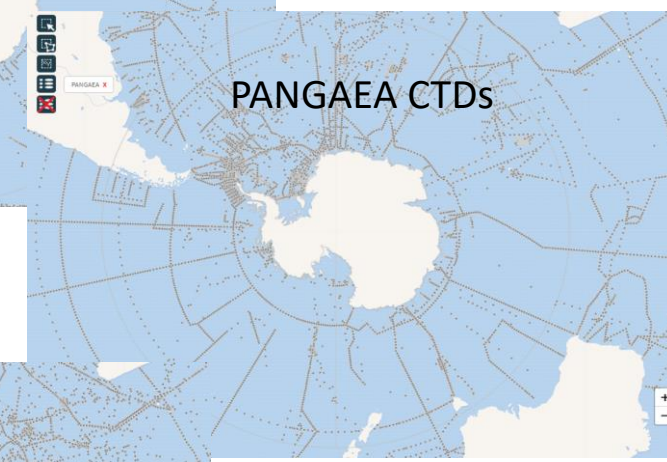
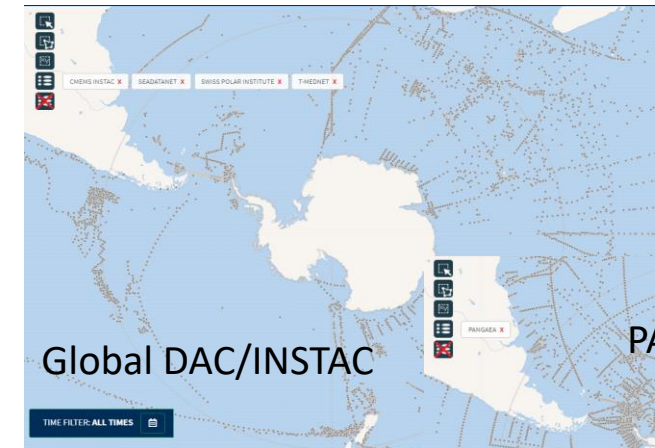
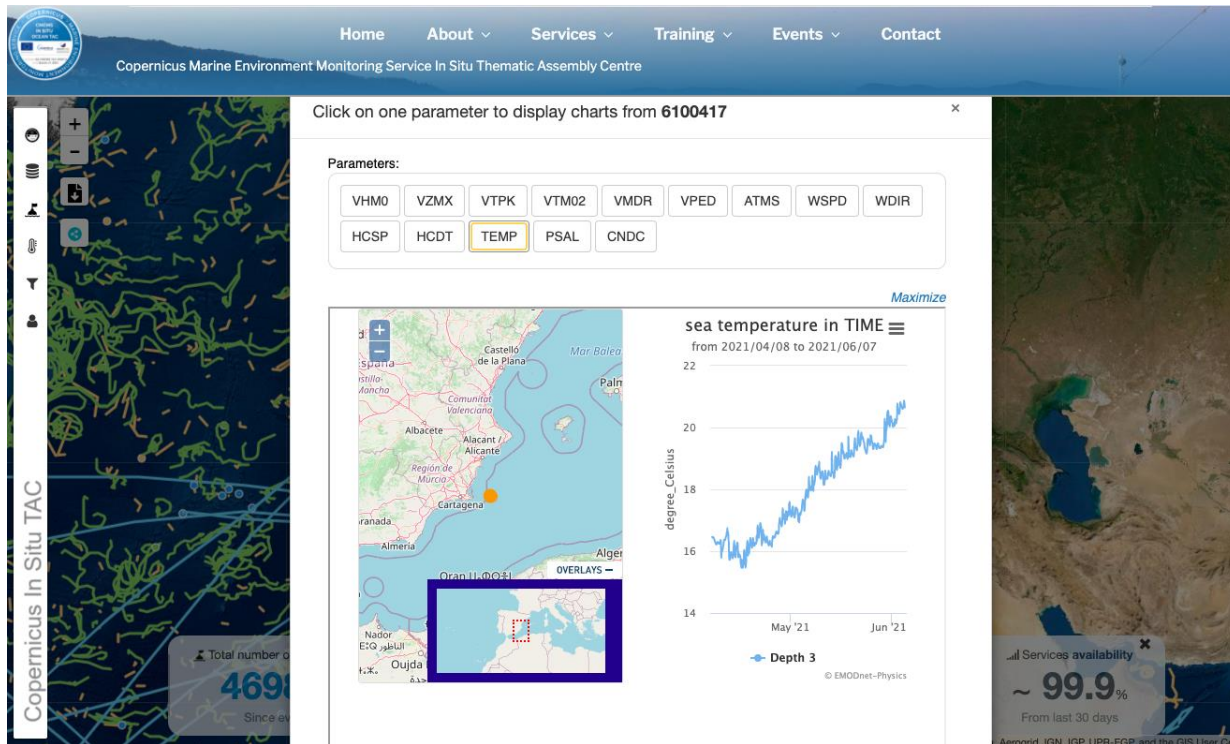
EMODnet Physics – Copernicus Marine Service



EMODnet



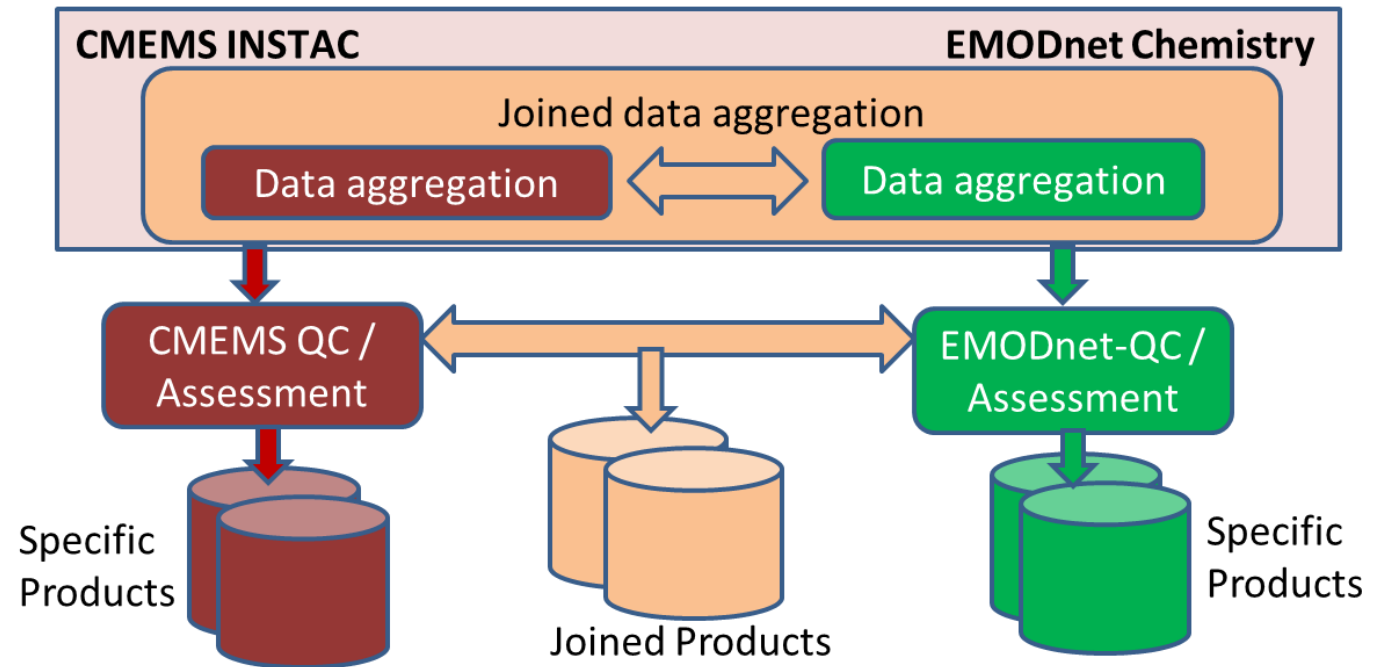
- Complementary datasets, products and services
- Joint actions on common users/stakeholders
- Mutual provision of data products and services



EMODnet Chemistry – Copernicus Marine Service

In 2019, a **Memorandum of Understanding** was signed between EMODnet Chemistry and CMEMS for:

- exchanging **metadata and data**
- sharing and enhancing **quality controls**
- developing **joint products**



EMODnet Chemistry – Copernicus Marine Service



Gathering EMODnet & Copernicus marine data products in the Baltic sea (released 9 June 2021)

Achieved thanks to fruitful collaboration between EC DG Defis, CMEMS, EC DG MARE, EMODnet

Next: **test** the fit – for - MSFD purpose

enlarge to all European Seas and release **on-line**.



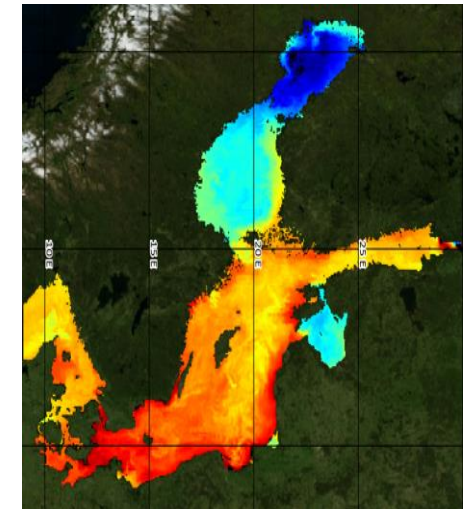
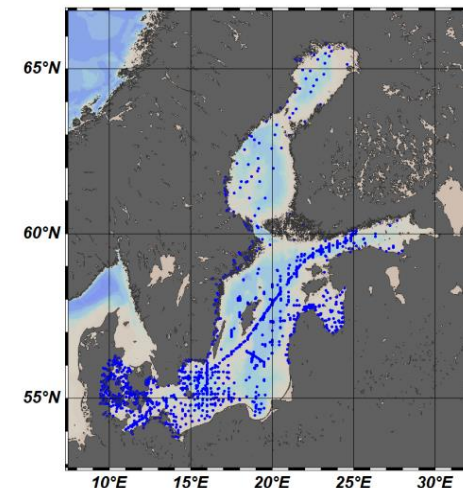
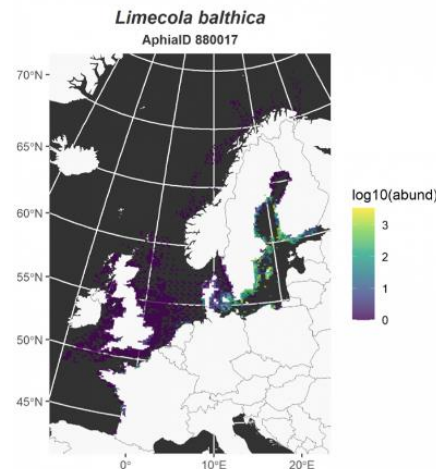
Good Environmental Status



MSFD D1, D2, D3, D5, D6, D7, D8, D9, D10, D11

Habitat

Product name: Baltic seabed habitat predictive multi-scale map
Type: model
Service source: EMODnet Seabed habitats
Name ID: [EMODnet broad-scale seabed habitat map for Europe \(EUSeaMap\)](#)
Variables: habitat type following the MSFD broad habitat types (as defined in Commission Decision (EU) 2017/848)
Scale: multi-scale, vector format file
Temporal coverage: n/a
Temporal resolution: n/a
Update frequency: biannual
Product relevancy: from coast to open sea
[Viewer](#)



EMODnet: A key contributor to the Ocean Decade

EMODnet is relevant to all 6 Ocean Decade objectives:

- A safe **ocean**
- A sustainable and productive **ocean**.
- A transparent and accessible **ocean**.
- A clean **ocean**.
- A healthy and resilient **ocean**.
- A predicted **ocean**.

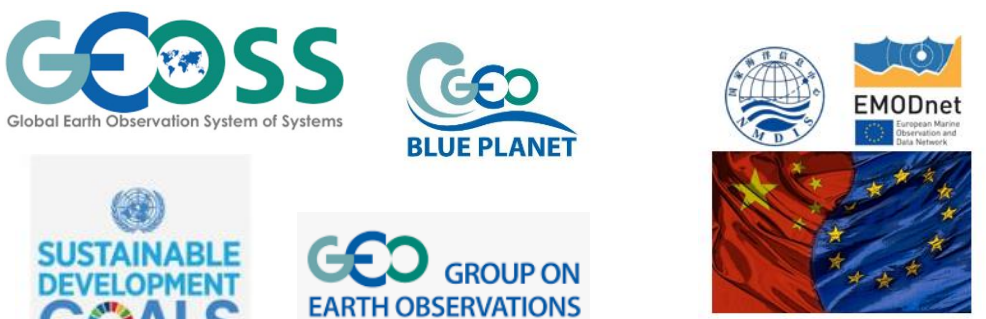
«EMODnet – a true hallmark in Marine Observations, Data and networking – is hugely important, not only for Europe, but as an example for other regions, and a valuable partner for IOC of UNESCO». Vladimir Ryabinin, Executive Secretary of the Intergovernmental Oceanographic Commission (IOC-UNESCO)



EMODnet has a key role to play – together with other marine knowledge actors across the world - to realise a truly transparent and accessible ocean whereby all nations, stakeholders and citizens have:

- **simplified access to ocean data, information and knowledge**, through user-driven interfaces and online data discovery and access services based on machine-machine communication;
- **trust in the provenance of the data** (through standardized, rich metadata) to increase the uptake and use and;
- **the capacity and knowledge to use marine data services and web-based collaborative spaces/digital ecosystems** where marine data can be utilized for solution-oriented applications and informed decisions.

EMODnet: Strengthening Partnerships for International Interoperability and Impact

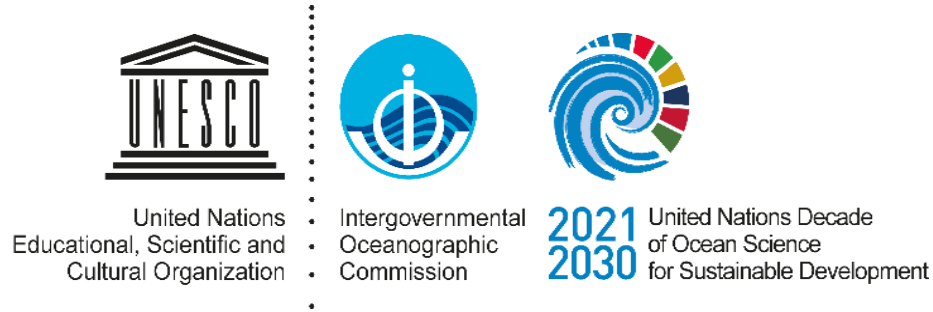


- A key partner for open data, open science, data diplomacy and digital data stewardship in Europe, and beyond;
- Interoperable data discovery and access, in collaboration with other key data services
- Further diversifying data parameters and sources (e.g. industry, citizen science)
- Extending FAIR to FAIR, CARE and TRUST



Transparency,
Responsibility,
User focus,
Sustainability and
Technology

EMODnet: A regional marine data, information and knowledge service directly contributing in diverse ways to the UN Ocean Decade



"We want global data and information systems and EMODnet's guidelines are great for community of practice. The network is also a role model for other regions."
Peter Pissierssens, IOC-IODE UNESCO

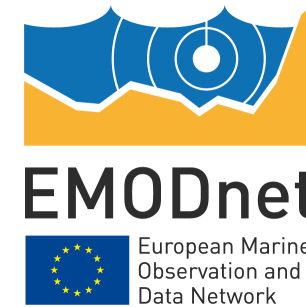
- Co-Chair of the UN Ocean Decade (OD) Data Coordination Group (EMODnet Secretariat);
- Contributor and expert to the IWG-SODIS Intersessional Working Group Strategy on Ocean Data and Information Stewardship for the UN Decade (EMODnet Coordinators);
- Multiple inputs to UN OD Actions:
 - DITTO (Digital Twins of the Ocean, Steering partner)
 - COAST PREDICT (Advisor role)
 - Ocean Best Practices (EMODnet referenced)
- Ocean Data and Information System (ODIS): All EMODnet thematic portals/central portal are registered on ODIS catalogue. Additional records will be added from the EU-China EMOD-PACE marine data project;
- IOC Ocean InfoHub Project (OIH): EMODnet is a European focal point & technical advisor to the development of ODIS architecture & interoperability with EMODnet.

Key messages

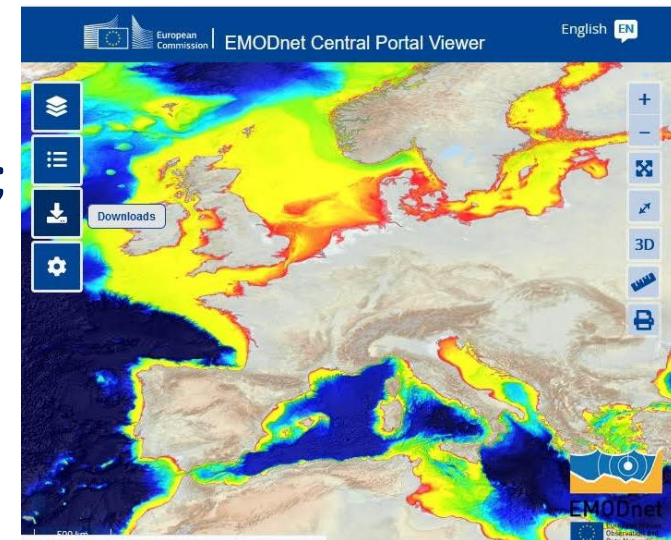
EMODnet today is a trusted EU public service for marine data, information and knowledge, in Europe and beyond;

EMODnet new phase (by end 2022) will complete the consolidation stage to deliver a fully centralized service with:

- A simplified single entry point to all data/data products;
- A data cache approach more suited to today's data driven world towards next phase ocean data and information management;
- an enhanced data discovery service using a central metadata catalogue and machine-machine search engine;
- a central map viewer;
- interoperability across the digital (marine data) commons.



emodnet.ec.europa.eu



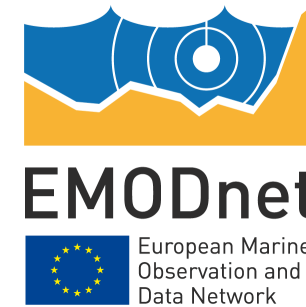
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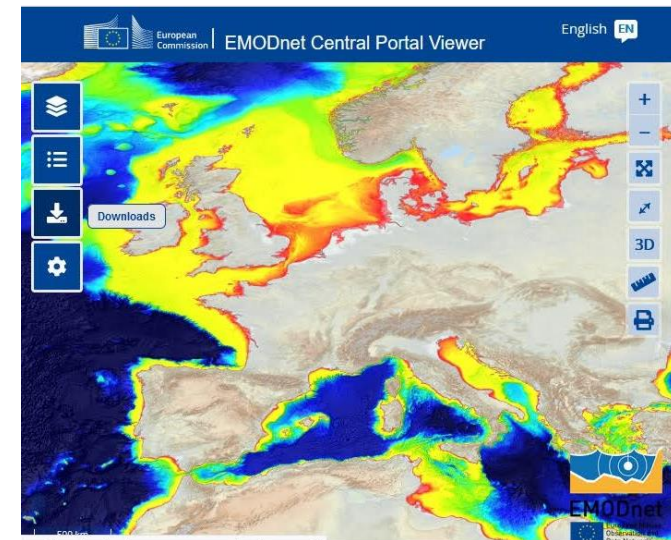
Key messages

EMODnet new phase (by 2023) will:

- Further **expand and diversify the EMODnet “offer”** including partnerships with citizen science, industry & regions beyond Europe;
- Further **connect with actors across the marine knowledge value chain**, including the **EU and global Ocean Observation capacity**;
- Continue to **strengthen strategic EU partnerships** e.g., with Copernicus Marine Service to ensure European marine data services are “future-fit” for the EU marine data space, the EU Green Deal Space, the Digital Twin Ocean and Destination Earth.



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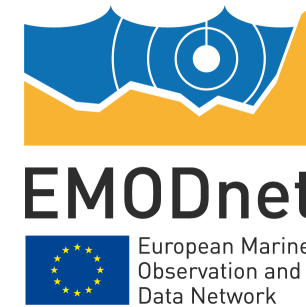
emodnet.ec.europa.eu



Key messages

In the coming decade, EMODnet by 2030 will:

- Strengthen the **implementation of the Digital Commons** within Europe and beyond;
- **Forge new collaborations worldwide** (at regional and global levels) to move towards a fully interoperability data sharing framework at Ocean Basin level e.g., the All Atlantic Data Space, and across the Global Ocean Data Ecosystem;
- **Expand its contribution to the UN Ocean Decade and its partnership with IOC-UNESCO, IODE and other actors**, including:
 - A EMODnet UN Ocean Decade Coordination Group;
 - EMODnet key recommendations and principles for supporting the Data Vision Under the UN Ocean Decade;
 - EMODnet input to UN Ocean Decade Actions, Collaborative Centres (e.g., for Ocean Prediction);
 - EMODnet leadership in Ocean Best Practices;
 - Enhance EMODnet contribution to demonstrations and training in ocean data and information stewardship;
 - Alignment and optimized tagging of EMODnet data for UN 2030 Sustainable Development Goals, Essential Ocean / Biodiversity Variables etc. **And much more!**



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United Nations
Educational, Scientific and
Cultural Organization

Intergovernmental
Oceanographic
Commission

2021-2030
United Nations Decade
of Ocean Science
for Sustainable Development



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Thank you for your attention!



EMODnet

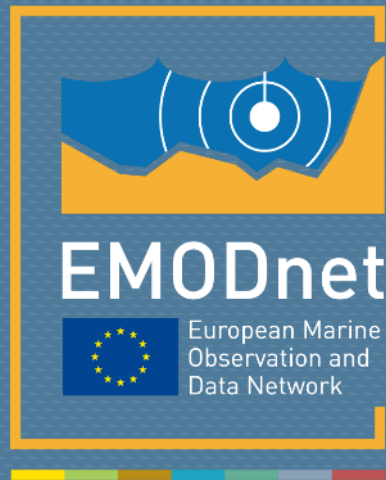


European Marine
Observation and
Data Network

- **Discover the EMODnet Central Portal** and see what EMODnet services can do for you;
- Learn more about EMOD-network of experts, user testimonials, achievements and partnerships via the EMODnet Conference 2021 recordings and resources: <https://emodnetconference2021.eu/>
- **Connect with the online EMODnet community**
 - @EMODnet (Twitter);
 - EMODnet monthly Newsletter;
 - Ask questions and submit feedback via the EMODnet Central Portal and via online surveys
- **Contact us via the EMODnet Central Portal** to discuss data sharing, data/data product use, queries on data/web services, and to explore partnerships.



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Your gateway to marine data in Europe

