

EMODnet



European Marine
Observation and
Data Network

Your gateway to marine data in Europe



**CPMR
CRPM**

EMODnet: your gateway to marine data in Europe

Protecting our coasts: how to anticipate and monitor coastal risks?

The contribution of coastal data

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EMODnet Secretariat



The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.

Marine data: why is it important?

- Rapid access to reliable and accurate marine environment data is vital in
 - addressing threats to marine environment
 - developing policies and legislation to protect vulnerable coastal & ocean areas
 - understanding trends and forecasting future changes
 - supporting sustainable economic development ('blue growth')

Global Ocean Observing System



Marine data in Europe: what is the challenge?

The process of marine data



Fragmented

The role of EMODnet (European Marine Observation and Data Network) ...

... is to unlock hidden and fragmented marine data resources



The beginning of EMODnet

- Launched by DG-MARE in 2009 (Directorate-General for Maritime Affairs and Fisheries)
- Supported by EU's Integrated Maritime Policy

OBJECTIVES

- **Reduce** uncertainty in knowledge of the oceans and the seas
- **Increase** competition and innovation
- **Reduce** costs



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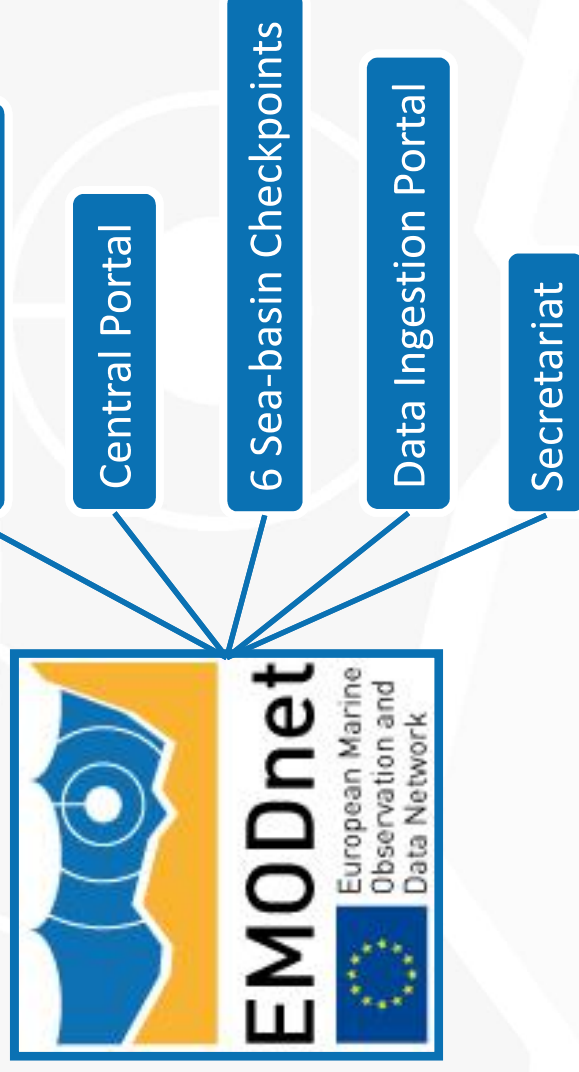


The core principles of EMODnet

- 1 Collect data once, use it many times
- 2 Develop data standards across and within disciplines
- 3 Process and validate data at different European levels
- 4 Extract maximum value from efforts of Member States
- 5 Build on existing efforts from data communities
- 6 Develop a user-driven decision-making process
- 7 Provide statements on data ownership, accuracy and precision
- 8 Recognise marine data are a public good

EMODnet consists of 5 strands

 Network of >150 organisations





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The development of EMODnet in different phases

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase I – Limited sea basins											



- Phase 1 — 59 institutions, budget €6.45 million
 - Prototype of Thematic data portals
 - Limited selection of parameters and sea-basins
 - Low-resolution data products



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The development of EMODnet in different phases

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase I – Limited sea basins											
				Phase II – Low resolution all basins							

Phase 1 — 59 institutions, budget €6.45 million

Prototype of Thematic data portals

Limited selection of parameters and sea-basins

Low-resolution data products

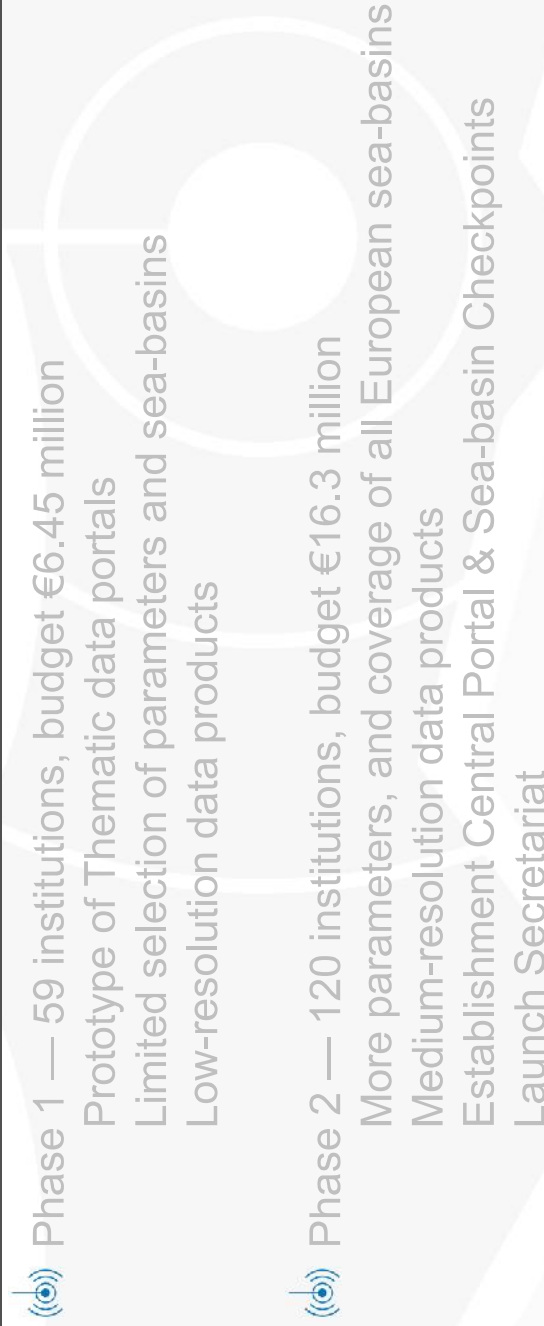
Phase 2 — 120 institutions, budget €16.3 million

More parameters, and coverage of all European sea-basins

Medium-resolution data products

Establishment Central Portal & Sea-basin Checkpoints

Launch Secretariat



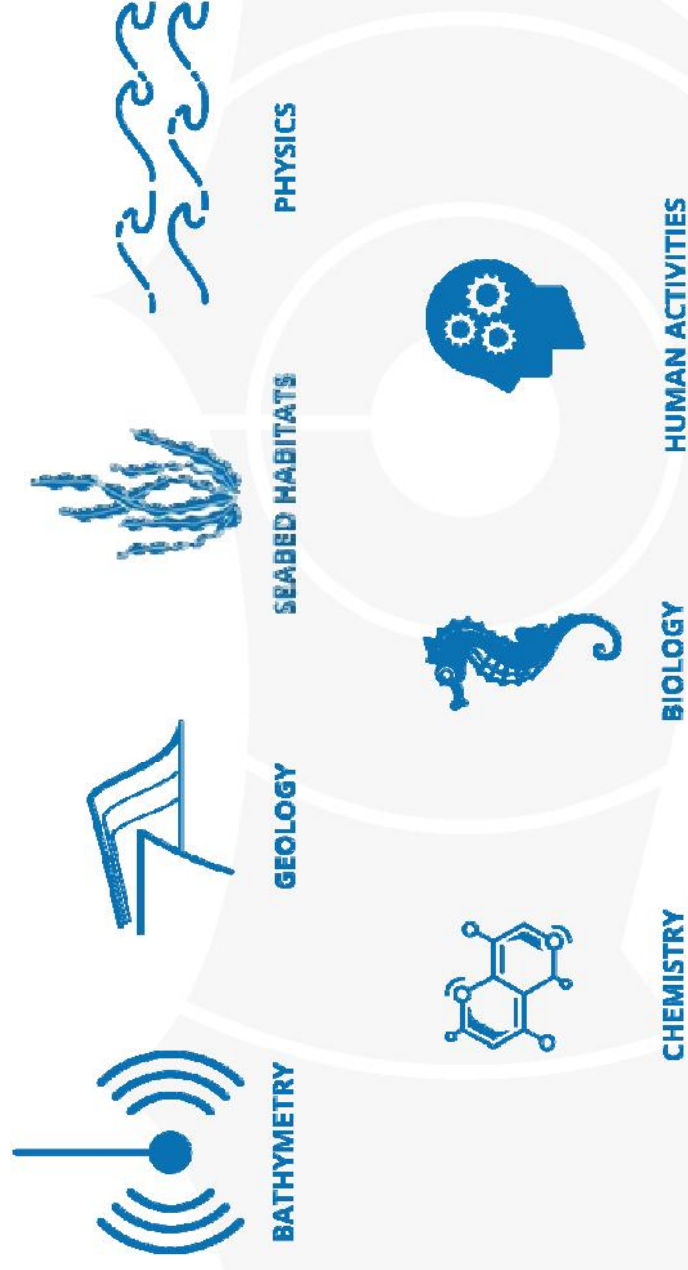
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Multi-resolution digital map of entire European seabed by 2020



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EMODnet created portals, giving access to a range of data archives across 7 disciplines

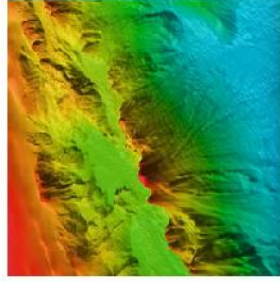




Seven thematic groups/portals



Thierry Schmitt



SEABED HABITATS

Data on modelled seabed habitats based on seabed substrate, energy, biological zone, and salinity.

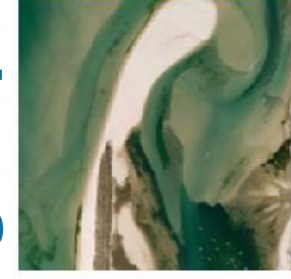


Helen Lillis



BATHYMETRY

Data on bathymetry (water depth), positions, and geographic location of underwater features, wrecks.



GEOLOGY

Data on seabed substrate, sea-floor geology, coastal behaviour, geological events, and minerals.



Henry Vallius



CHEMISTRY

Data on the concentration of nutrients, organic matter, pesticides, heavy metals, redox indicators, and antifoulants in water, sediment and biota.



Alessandra Giorgetti



BIOLOGY

Data on temporal and spatial distribution of species abundance and biomass from several taxa.



PHYSICS

Data on salinity, temperature, waves, currents, sea-level, light attenuation, and tides.



Antonio Novellino



HUMAN ACTIVITIES

Data on the intensity and spatial extent of human activities at 200m.



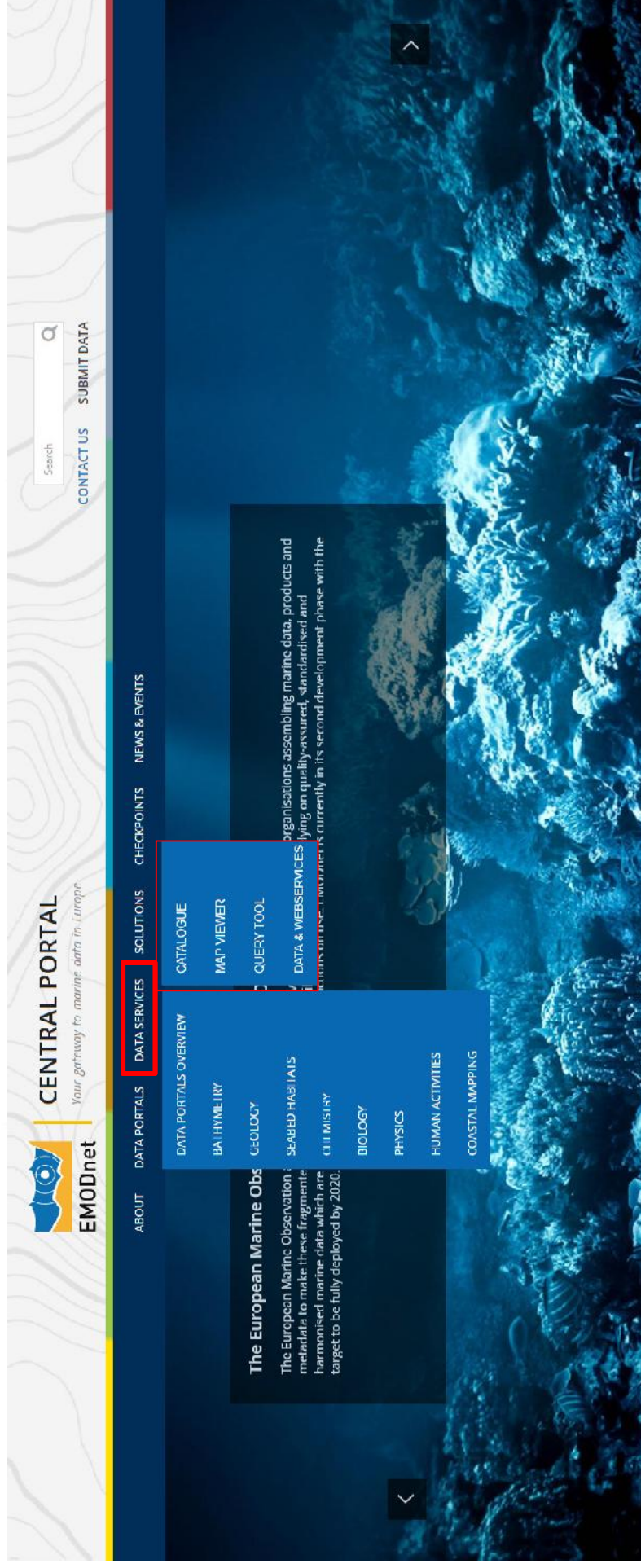
Alessandro Pittito



Simon Claus

The Central Portal provides a single point of access to the 7 thematic portals

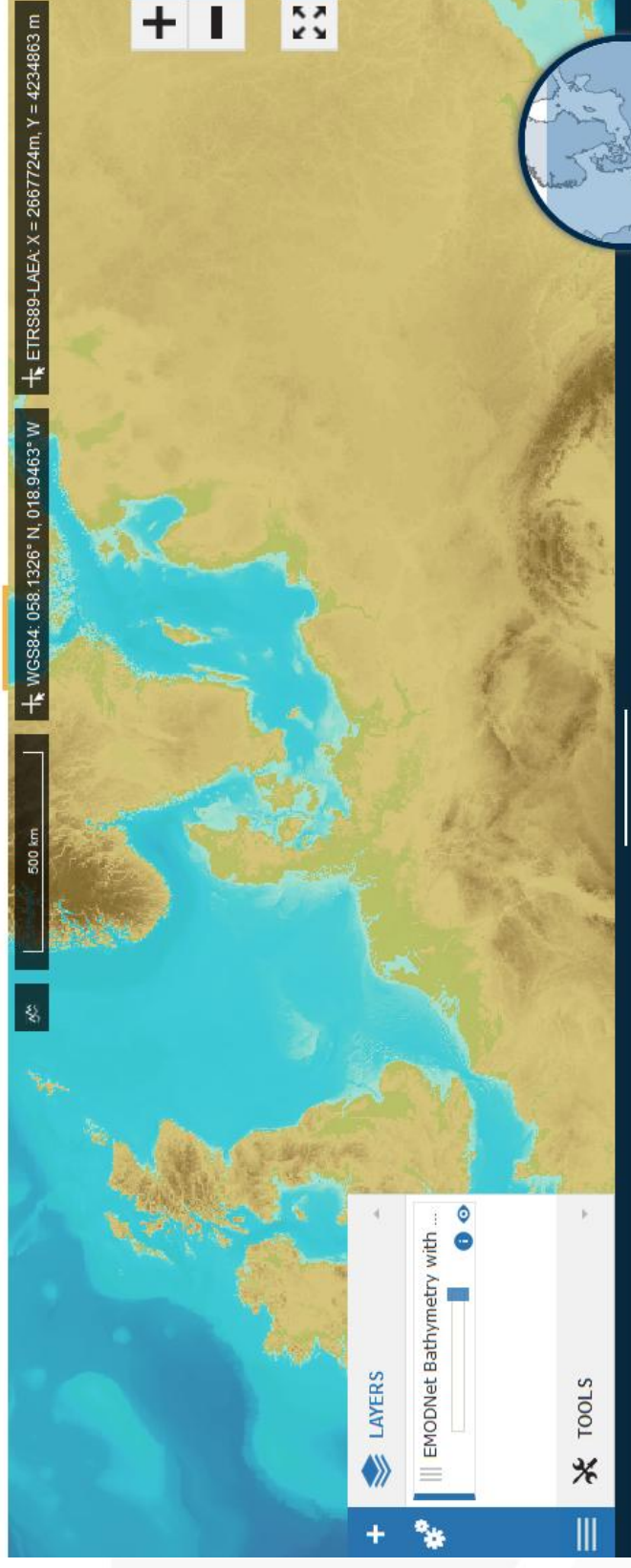
www.emodnet.eu



The screenshot shows the EMODnet Central Portal website. The header features the EMODnet logo and the text "CENTRAL PORTAL Your gateway to marine data in Europe". Below the header is a navigation bar with links: ABOUT, DATA PORTALS, DATA SERVICES (highlighted with a red box), SOLUTIONS, CHECKPOINTS, NEWS & EVENTS. A dropdown menu is open under "DATA SERVICES", showing links: DATA PORTALS OVERVIEW, DATA HYDROLOGY, GEOLOGY, SEA-BED HABITATS, CLIMATE, BIOLOGY, PHYSICS, HUMAN ACTIVITIES, and COASTAL MAPPING. Another dropdown menu is open under "SOLUTIONS", showing links: CATALOGUE, MAP VIEWER, and QUERY TOOL. A text box on the right states: "The European Marine Observation and Data Network (EMODnet) is currently in its second development phase with the aim of providing a single point of access to the 7 thematic portals assembling marine data, products and services on a quality-assured, standardised and harmonised platform." The background of the website is a blue underwater scene with various marine life.



Coastal mapping project, also part of EMODnet family



Data

Metadata

Bathymetry

Data on bathymetry (water depth), coastlines, and geographical location of underwater features such as wrecks

Geology

Data on seabed substrate, seafloor geology, coastal behaviour, geological events and probabilities, and minerals

Human activities

Data on the intensity and spatial extent of human activities at sea

Biology

Data on temporal and spatial distribution of species abundance and biomass from several taxa

Seabed habitats

Data on modelled seabed habitats based on seabed substrate, energy, biological zone and salinity

Physics

Data on salinity, temperature, waves, currents, sea level, light attenuation and FerryBox data

Chemistry

Data on concentrations of chemicals (pesticides, heavy metals, antifoulants) in water, sediments and biota



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Central Portal

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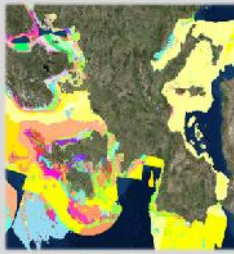
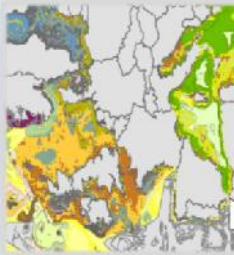
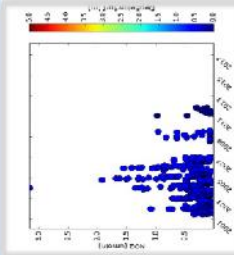
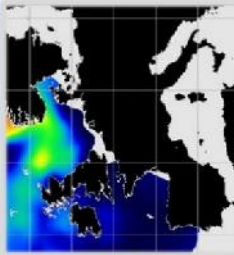
Data Products

Data Services

Thematic DATA coverage by the portals

Country	Geology	Seabed habitats	Physics	Chemistry	Biology	Human activities
d	Seabed substrate	Seabed habitat maps (broad-scale and specific per basin)	Wave height and duration	Acidity	Occurrences and abundances of species of:	Aggregate extraction
	Sediment accumulation rates	Individual seabed habitat maps from surveys	Sea temperature	Antifoulants	Phytoplankton	Aquaculture
	Seafloor lithology	Environmental variables influencing habitat type (depth, salinity, currents, light, ...)	Wind speed and direction	Chlorophyll	Zooplankton	Cultural heritage
	Seafloor stratigraphy		Salinity	Dissolved gases	Macro-algae	Dredging
es	Coastal behaviour		Horizontal speed of the water column	Fertilisers	Angiosperm	Fisheries
	Geological events and probabilities		Water clarity	Hydrocarbons	Fish	Hydrocarbon extraction
a	Mineral occurrences		Changes in sea level	Heavy metals	Reptile	Traffic in main ports
			Inflow from rivers	Organic matter	Benthos	Ocean energy facilities
			Ice cover	Polychlorinated biphenyls	Bird	Pipelines and cables
			Underwater noise	Pesticides and biocides	Sea mammal	Protected areas
				Radionuclides		Status of bathing sites
						Vessel density
						Waste disposal (solids)
						Wind farms

Thematic DATA PRODUCT coverage by the portals

Geology	Seabed habitats	Physics	Chemistry	Biology	Human activities
					
Maps of:	EMODnet broad-scale seabed habitat map for Europe (EUSeaMap)	Time series	Concentration maps using DIVA software	Map viewer of:	Map viewer of:
Seabed substrate	Confidence maps	Dynamic plots	Dynamics plots	Phytoplankton	Aggregate extraction
Sediment accumulation rates	Maps of:	Profiles	Profiles of:	Zooplankton	Aquaculture
Seafloor lithology	Seabed habitat maps (broad-scale and specific per basin)	Statistics (trends, max, min, average, ...)	Acidity	Macro-algae	Cultural heritage
Seafloor stratigraphy	Individual seabed habitat maps from surveys	Maps of:	Antifoulants	Angiosperm	Dredging
Coastal behaviour	Environmental variables influencing habitat type (depth, salinity, currents, light, ...)	Wave height and duration	Chlorophyll	Fish	Fisheries
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		Salinity	Hydrocarbons	Bird	Ocean energy facilities
		Horizontal speed of the water column	Heavy metals	Sea mammal	Pipelines and cables
		Water clarity	Organic matter		Protected areas
		Changes in sea level	Polychlorinated biphenyls		Status of bathing sites
			Pesticides and biocides	Benthos	Vessel density
			Radionuclides	Birds	Waste disposal (solids)
				Fish	
				Sea mammals	
				Micro-organisms	



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The concept and aim of the Sea-basin Checkpoints

Still shortcomings with marine data availability & accessibility

Sea-basin Checkpoints launched in 2013 and 2015

Stress tests → test data against specific end-user challenges

AIM | to assess the fitness for purpose of marine monitoring data



Sea-basin Checkpoints coordinators



ARCTIC



ATLANTIC



BALTIC



BLACK SEA



MED SEA



NORTH SEA



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Data Ingestion Portal allows contributing data in an easy way

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



Home

Welcome to the EMODnet Data Ingestion portal

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.

[READ MORE](#)



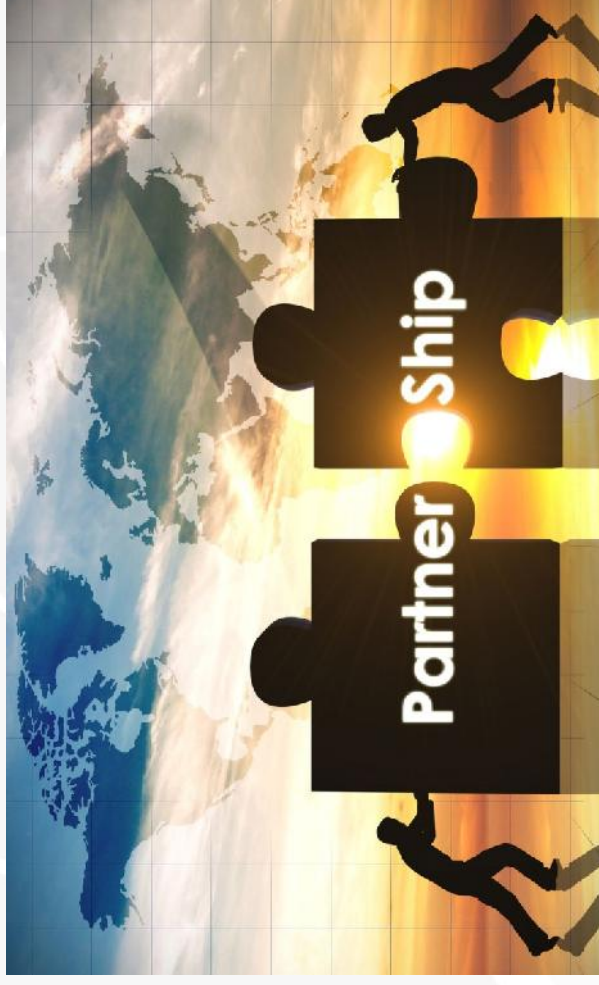


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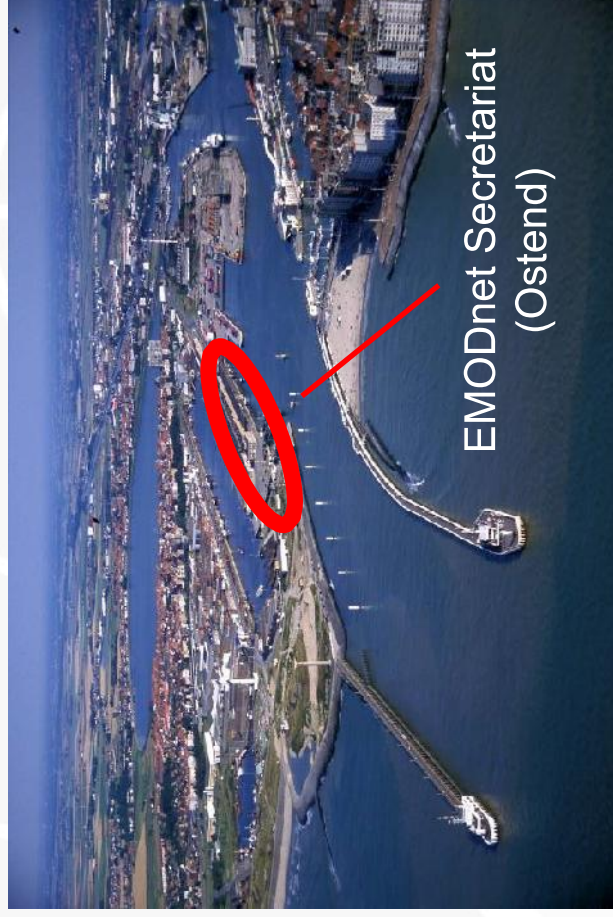
Organisations wish to join EMODnet?

- EMODnet Associated Partnership Scheme
- Flexible, transparent and straightforward
- Allows to contribute to and benefit from EMODnet



The role of the EMODnet Secretariat

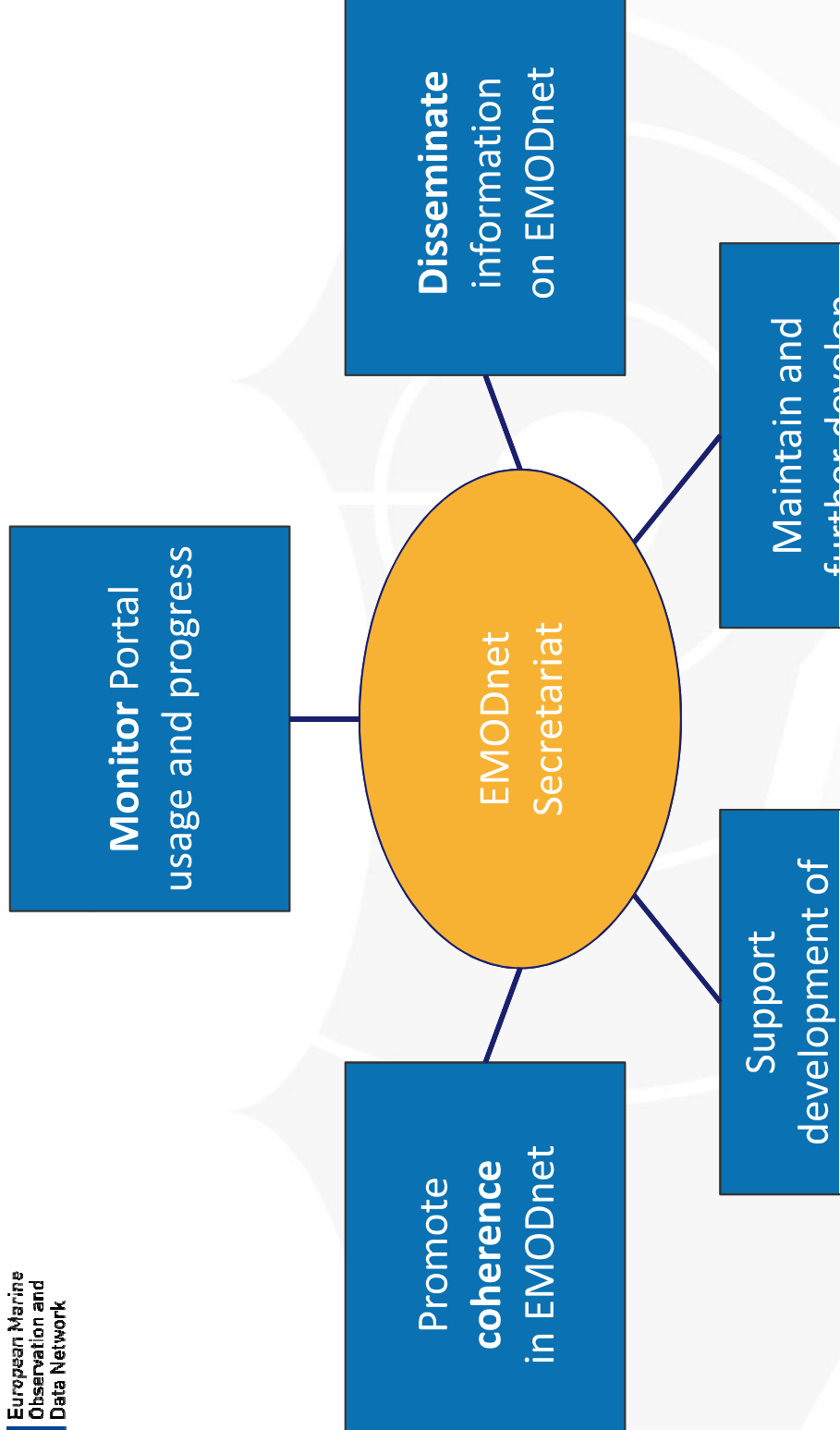
 **AIM** | To develop a more coherent, effective, efficient and fit for purpose EMODnet, and to stimulate its use by industry, policy and scientific data users.

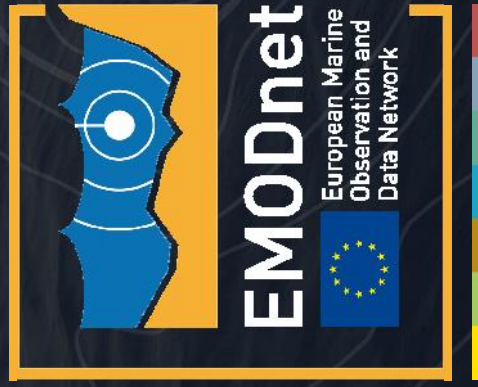




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EMODnet Secretariat's main tasks





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