

# 8<sup>th</sup> EMODnet-Copernicus Marine coordination meeting

**Date:** 20 October 2023 13:30-16:30 CEST

**Location:** Online (EMODnet webex)

**Invited Participants:**

- EMODnet: Secretariat, thematic and data ingestion Coordinators
- Copernicus Marine Service : Mercator Ocean International (MOi) and Copernicus Marine Service INSTAC
- European Commission: DG MARE, DG DEFIS, CINEA

**Main aims of the workshop:** The meeting aims to bring together EMODnet, Copernicus Marine, and inter-DG representation to discuss marine data and data products and information. Objectives include assessing existing capabilities and emerging areas for collaboration across EMODnet themes and between EMODnet and Copernicus Marine.

**Co-chairs:** Kate Larkin (EMODnet Secretariat), Pierre-Yves Le Traon (Mercator Océan international)

**Platform:** Online platform hosted by EMODnet Secretariat via Webex

**Note:** The meeting report and all presentations will be made available on the EC Maritime Forum as pdf files.

Agenda and list of participants are given in annexes below.

## ***Brief minutes, conclusions, main messages & topics for follow up***

### **Welcome and overview of agenda, key aims of the meeting and opening addresses**

**Kate Larkin (EMODnet Secretariat) and Pierre-Yves Le Traon (MOi, Copernicus Marine Service)** opened the meeting as co-Chairs.

**Zoi Konstantinou (DG MARE) and Tim Lemmens (DG DEFIS)** opened the meeting and reaffirmed the importance for both DGs to continue the collaboration between EMODnet and Copernicus Marine.

Tim Lemmens mentioned that a new person will arrive in November 2023 at DG DEFIS to replace Fabienne Jacq.

Zoi Konstantinou noted the context of the collaboration between EMODnet and Copernicus Marine Service had been framed and changed by the EU Digital Twin of the Ocean. She added this provides an opportunity for more common goals, encouraging both Copernicus Marine Service and EMODnet to continue the collaborations, working together to resolve any issues to enable even better work into the future.

*Post-meeting note: Alessandra Cacciari is joining DG DEFIS and will assume the role of principal contact for Copernicus Marine Service's partnership with EMODnet, with Tim Lemmens and Richard Gilmore remaining involved.*

**Marine data service updates: Copernicus Marine and EMODnet: Kate Larkin and Pierre-Yves Le Traon** presented an overview of EMODnet and Copernicus Marine Service current status and evolution respectively.

Kate Larkin presented the EMODnet unified service, highlighting the key functionalities and features of the central map viewer and common metadata catalogue, following the centralisation of all seven thematics into the single EMODnet Portal in January 2023, noting this was externally promoted from the end of January 2023 and she noted this has been a game-changer for users, with > 15,000 unique visitors per month following unification. Referring to the common web services and ERDDAP services across EMODnet thematics are very useful to users. The centralised services were also tested at the OpenSeaLab 3.0 which took place in Spring 2023 and the EMODnet Open Conference 2023 would showcase this more and look to the further evolution.

She explained that EMODnet publishes data in a pan-European scale harmonised into FAIR data on the basis of > 610 data providers from the *in situ* ocean observation community, spanning research, operational oceanography, hydrographic offices, geological surveys, private sector, NGOs, citizen science and data infrastructures e.g., via established data pipelines e.g., National Oceanographic data centres, SeaDataNet ICES etc. EMODnet also produces open access data products combining parameters and Bathymetry Digital Terrain, Vessel Density composite maps, with each thematic producing multiple data products. She reiterated the EMODnet coastal offer, referring to some examples across different thematics and noting this is an evolving area for EMODnet, also in dialogue with Copernicus Marine to ensure complementarity.

She noted the unification of thematic services was the first upgrade, and in 2023-2024 EMODnet continues to evolve based on EMODnet expert innovations and user feedback, with progressive seamless updates being made to the map viewer and to the metadata catalogue and web services. EMODnet Coordinators and wider experts are also directly contributing to the development of the European Digital Twin Ocean and the common data lake, including the testing of these services.

She noted that EMODnet Data Ingestion is being centralised into the EMODnet Portal, which is ongoing to be completed in 2024. In addition, EMODnet continues to expand its offer in a number of areas:

- The coastal and land-sea interface;
- Geographical resolution and parameter gaps. Biodiversity in the full Mediterranean basin;
- Expanding sources of data building on established pipelines, also via EMODnet Data Ingestion, including emerging areas of NGOs, citizen science and others;
- EMODnet's core mandate remains high resolution multi-disciplinary *in situ* marine data services for European regional seas, and also Overseas territories which is an area currently being expanded upon by a number of thematics e.g., Caribbean Sea. Worldwide, EMODnet also has data sharing and stewardship partnerships with other regions, including China via the EMOD-PACE and CEMDNET projects that finished in early 2023;
- At the global level, EMODnet is now systematically harvested by GEOSS and the OceanInfoHub, made possible by the EMODnet united service.

Pierre-Yves Le Traon presented the Copernicus Marine Service, noting its main ongoing activities/evolutions include:

- Re-enforced governance with a Marine User Forum;
- Planning and delivering : four releases of Copernicus Marine portfolio since the start of Copernicus 2: Nov. 2021, July 2022, Nov. 2022 and March 2023. New one in Nov 2023. Many improvements in observation and model products;
- Development of a completely overhauled Marine Data Store (MDS) system carried out in synergy with the European DTO. The new MDS will be put in operation from Fall 2023.
- Enhancements to the Copernicus Marine MyOcean Viewer and Catalogue;
- Update of the Copernicus Marine Service product quality dashboard;
- Publication of the Ocean State Report 7 in a new Journal (State of Planet);
- Development of a new offer for coastal marine: improved or new (e.g. satellite derived bathymetry) satellite products, modelled river discharges in cooperation with the Copernicus Emergency Management Service, more in-situ data in cooperation with JERICO

and EMODnet and co-development/co-design with member states of coastal marine forecasting systems fully interfaced with Copernicus Marine Modelling and Forecasting Centers;

- Development of first prototypes for Copernicus Coastal and Arctic Thematic Hubs.

He noted specific large Horizon Europe projects on Copernicus Marine Service evolution, including NECCTON (biology and biodiversity) and FOCCUS (coastal marine).

Activities are on-going to revise Copernicus Marine requirements for *in situ* data (EOOS framework in interaction with EuroGOOS) and for satellite data (Sentinel expansion and Sentinel New Generation).

### **Common communication: EMODnet and Copernicus Marine Service**

Zoi Konstantinou reaffirmed the need to work on communication aspects to better explain the marine landscape, in particular with regard to the offers and complementarities of the two EC marine data services EMODnet and Copernicus Marine Service, the flows of data and how the services are working together, capitalising on existing links in an understandable way for expert and less expert users. She noted Copernicus Marine INSTAC plays an important role internally to serve Copernicus needs and services, providing important data in the European and Global level. EMODnet has a larger scope for *in situ* at the European level, which needs to be explained. We need to invest more in showing the European investments are consolidated, to maximise the investments of the Member States.

It was noted there are two working documents circulating: one is a more detailed description of what the two entities are doing, including *in situ* data pipelines into the services, and one high level summary. The final objective is to have a short high-level document for clear and short communication in 2023 (if possible by the EMODnet Open Conference 2023). The document should also discuss ocean observing activities (link with EOOS). And in 2024 to have a more complete document describing more technical components of the pipeline, noting for EMODnet this is very diverse with many data pipelines for each of the seven thematics. EMODnet and CMEMS will also discuss producing a new infographic.

**Action Kate Larkin and P.Y. Le Traon: to have a short meeting to agree on the structure of the high level document.** *Post-meeting note: This meeting took place in October 2023, with an agreement to produce a short (ideally 2 page) joint communication on the in situ marine data requirements of EMODnet and Copernicus Marine Service, with a view to explaining the core mandates of the 2 EC marine data services, the pipelines of in situ data into these services and their complementarities.*

### **Presentations from EMODnet and Copernicus Marine INSTAC**

**Dominique Obaton (Ifremer, Copernicus Marine *In Situ* Thematic Assembly Centre)** presented Copernicus Marine *in situ* TAC, started with the list of *in situ* marine platforms taken into account, then the oceanographic data nodes plugged and the service developed. Ongoing and emerging collaboration with EMODnet covers EMODnet physics (near real-time / NRT), EMODnet chemistry (delayed mode /DM), with both EMODnet thematics.

**Antonio Novellino (ETT, EMODnet Physics)** presented the joint Marine *In Situ* Collaboration (MIC) group that was set up and coordinated by EMODnet and Copernicus Marine, also engaging EuroGOOS and other experts. He explained the MIC organisation and tools, including machine-machine interoperability implemented. He noted a key goal is to coordinate approaching new data providers and establish data flowing into EMODnet and Copernicus Marine Service, which are sometimes required by common users and in other cases, specific users unique to Copernicus Marine or EMODnet. He also noted that Data Ingestion provides capacity training e.g., to add an ERDDAP docker etc to enable the ingestion of data.

The different EMODnet thematics were presented by the following Coordinators:

- EMODnet Physics: **Antonio Novellino, ETT**

- EMODnet Chemistry: **Alessandra Giorgetti, OGS**
- EMODnet Bathymetry: **Dick Schaap, MARIS**
- EMODnet Geology: **Anu Kaskela, GEUS Denmark**
- EMODnet Human Activities: **Alessandro Pititto, COGEA BIP Group**
- EMODnet Biology: **Joana Beja, VLIZ**
- EMODnet Seabed Habitats: **Ville Karvinen, SYKE**
- EMODnet Data Ingestion: **Dick Schaap, MARIS**

Highlights from the thematics included the dialogues undertaken by all thematics with the Regional Sea Conventions to optimise the data sharing and streamlining to EMODnet; the specific sharing of Member States data e.g., on marine litter with EMODnet (Chemistry); the sharing of EMODnet FAIR pan-European data with Copernicus Marine Service e.g., some biogeochemical parameters used by Copernicus Marine modelling activities; EMODnet Digital Terrain Model updates including the continual improvements in terms of data providers (next full update expected in 2024) noting the >60 tiles that allow sub-setting for downloads; EMODnet Human Activities which currently has limited interaction at this point with Copernicus Marine due to the nature of the human activities parameters and data layers which are unique to EMODnet, and which is expanding its offer for Maritime Spatial Planning and is also discussing with DG MARE about increasing certain fisheries management data and information (beyond the fish catch data for some individual species that are already available); EMODnet Geology whose offer now includes seabed erosion, quaternary geology with the development of geotechnical data in progress, noting the coastline migration and types are perhaps the most interesting and useful for Copernicus Marine Service; EMODnet Biology workflow priorities for the latest workplan started in May 2023 include addressing gaps in terms of species groups and marine regions with workshops planned for EU Mediterranean countries and one on the use of citizen science platforms and data requiring digitisation, and a partnership with ICES on fisheries data; EMODnet Seabed Habitats noted that there are no specific links with Copernicus Marine Service except for the utilisation of Copernicus Marine bottom-water current in EUSeaMap, although he noted that EMODnet seabed habitats are moving into providing information on wetlands which could be interesting for Copernicus Land; EMODnet Data Ingestion is active sourcing new data, including beyond the current established pipelines so that data can be ingested and used for EMODnet products. This includes working with EMODnet Ambassadors at National level to source and some automatic exchanges including with SeaDataNet SEANOE and the Crowne Estate (UK private sector), EU projects and more, nothing there would be a webinar in February 2024 on this topic. EMODnet's input to the Blue-Cloud web-based open science workbenches and virtual research environments was also noted e.g., for nutrients, eutrophication and chlorophyll that combine EMODnet and Copernicus Marine data, with data products ultimately for ingestion into EMODnet and Copernicus Marine.

**Identified actions include:**

- ***Pierre-Yves Le Traon: to organise a meeting between EMODnet bathymetry and the team selected to work on the coastal satellite derived bathymetry call.***
- ***EMODnet geology and Copernicus Marine / Land to resume interactions on topics of common interests, noting that Anu Kaskela should be included for EMODnet Geology going forward.***
- ***EMODnet Biology and Copernicus Marine to maintain a dialogue on the offer of both services related to fisheries data and information in the context of the NECCTON project (plus interaction with Human Activities if needed for fisheries management data and information)***
- ***Dominique Obaton: in relation to animal borne data ingested by in situ TAC (Temperature & Salinity profiles) to check if Copernicus Marine could have access to more data regarding sex, species, weight of the sea mammals. This is not part of Copernicus Marine but could be of interest to EMODnet biology.***

**European Atlas of the Seas:** A short discussion took place on the European Atlas of the Seas, noting that there is ongoing dialogue between the EMODnet Secretariat and Mercator Ocean International,

to identify societally-relevant open data layers from Copernicus Marine Services to be recommended to add to the European Atlas of the Seas.

**Events:** Kate Larkin presented some slides on the EMODnet Open Conference 2023, noting that Copernicus Marine Service has been invited to speak in many Sessions spanning the digital twin ocean collaboration, data flows and more.

Preparation of the UN Ocean Decade Conference next year in Barcelona:

- A joint (Copernicus Marine & EMODnet) training side event is currently being discussed
- A joint Booth is also proposed

*Post-meeting note: CMEMS and EMODnet colleagues exchanged on representation and joint proposals for UN Ocean Decade Conference were submitted in October 2023, led by MOi.*

**Setting date for next meeting:** The next coordination meeting (+6 months) will be a smaller one, between coordination parties. Then (+12 months) with wider experts, organised in person.

## **Annex I – Agenda**

### **EMODnet & Copernicus Marine Service - 8<sup>th</sup> Coordination meeting**

**Date:** 20 October 2023, 13:30 – 16:00 CEST **Location:** Online meeting

- **Welcome and overview of agenda, key aims of the meeting** (meeting Co-Chairs) 5'
- **Introduction from EC** (DG DEFIS and DG MARE) 5'
- **Marine data service updates: CMEMS and EMODnet** 10' (5' per service)
  - **Copernicus Marine Service Phase #2** (Pierre-Yves Le Traon, MOi)
  - **EMODnet 2023-2025** (Kate Larkin, EMODnet Secretariat)
- **Common communication: EMODnet and Copernicus Marine Service** (EC DG MARE, DEFIS, meeting co-Chairs and all) 25'
- **Presentations from EMODnet and CMEMS INSTAC** 90'  
including short discussion after each talk as follow up on specific areas of collaboration
  - **Copernicus Marine Service INSTAC** (25', timing tbc) (*overview of CMEMS INSTAC: current phase, key areas of service development, areas for ongoing and emerging collaboration with EMODnet*)
  - **Joint Marine *In Situ* Coordination Group (MIC): latest activities, emerging areas** 20'  
Suggested speakers MIC co-Chairs Dominique Obaton (Ifremer) and Antonio Novellino (ETT, EMODnet Physics), scope (i.e. thematic), latest activities and see areas for further collaboration
  - **EMODnet** 60' (*overview of each thematic by Coordinators: current phase, key areas of service development, areas for ongoing and emerging collaboration with CMEMS e.g., parameter data flow, data use, joint use case, other*). 5' per EMODnet thematic with short Q&A after each
- **Further discussion on EMODnet and Copernicus Marine Service: Areas of common interest e.g., coastal, *In Situ* data provision, other** 10' (if needed)
- **Data Ingestion service** 15'
  - EMODnet Data Ingestion (Dick Schaap and Sissy Iona)
  - Short discussion
- **European Atlas of the Seas** 10'
- **Events** 20'
  - **Copernicus Marine Service**

- EMODnet
- External events (including UN Ocean Decade Conference 2024)
- Set date for next Coordination meeting 3'
- Final reflections from EC (DG DEFIS and DG MARE) 5'
- Any Other Business 5'

Close of meeting

### ***Annex II – List of Participants***

<b>EU marine data service representation/role</b>	<b>Participant</b>	<b>Affiliation</b>
Copernicus Marine Service	Pierre-Yves Le Traon	MOi
	Laurence Crosnier	MOi
	Stephanie Guinehut	MOi
	Alain Arnaud	MOi
Copernicus Marine Service INSTAC	Dominique Obaton	Ifremer, France
EMODnet Bathymetry & EMODnet Data Ingestion	Dick Schaap	MARIS, The Netherlands
EMODnet Geology	Anu Kaskela	GTK, Finland
EMODnet Seabed Habitats	Ville Karvinen	Syke
EMODnet Chemistry	Alessandra Giorgetti	OGS, Italy
EMODnet Biology	Joana Beja*	VLIZ, Belgium
EMODnet Physics	Antonio Novellino	ETT, Italy
	Patrick Gorrings	SMHI, Sweden
EMODnet Human Activities	Alessandro Pititto	COGEA/ BIP Group, Italy
EMODnet Central Portal	Frederic Leclercq	VLIZ, Belgium
EMODnet Secretariat	Kate Larkin	EMODnet Secretariat
	Conor Delaney	EMODnet Secretariat
	Nathalie Tonné	EMODnet Secretariat
	Vicente Fernandez	EMODnet Secretariat
EC, DG MARE	Rémy Denos	DG MARE A1
	Zoi Konstantinou	DG MARE A1
EC, DG DEFIS	Tim Lemmens	DG DEFIS
CINEA	Carlos Fernandez	CINEA
	Fabrice Pourceau	CINEA

\*Also EMODnet Central Portal