Overview of main evolutions EMODnet Thematic Assembly Nodes – PHASE IV (2021-2023)

- Centralisation of thematic DDAS and visualisation services into Central Portal
- Integration of thematic websites into Central Portal
- Extension of coverage (geographic, data types/parameters, …)
- New developments (products, tools, services, deployments, …)
- New priorities to address specific challenges (e.g. coastal area)

Type of specification 2021-2023	Details
All thematic lots	
Expansion of geographical coverage	Caribbean Sea
Focus on centralisation!	
Further updating existing data products	e.g. increasing resolution where possible, focus on coastal areas, new confidence assessments, etc.
Further expansion of database	e.g. to include other European regions
EMODnet Bathymetry	
Expansion of geographical coverage + development new product	Detailed tidal bathymetry for Venice Lagoon
Expansion of geographical coverage + development new product	Regional DTM for the Caribbean region, will have multi-resolution grid (1/16 to ¼ arc minutes)
Tool	Making the prototype Collaborative Virtual work Environment (CVE) fit-for-validation of the regional DTMs
EMODnet Biology	
Expansion data type/standard	Expansion of DarwinCore to other types of data, e.g. genetics and image
Activity	Establish EMODnet Biology as the European Node of the MBON network.
Data product refinement	Expansion of the taxonomic, geographic and temporal extent of presence-absence maps.
Data product refinement	Refining Machine Learning interpolation and distribution modelling approaches.
Data products	Turning products into fully-documented software packages.
New server technologies	Evaluation (and if feasible, implementation) of OPeNDAP, ERDDAP, THREDDS Data Server (TDS), others to be defined.
New technical formats	Investigation of (and offered as a standard) NetCDF, Cloud Optimised GeoTIFF, Linked Open Data (LOD)
EMODnet Chemistry	
Expansion data types	Proposal of new formats for expanding data collection to floating macro-litter in open sea and micro-plastics data in the sediments
Data product generation	Eutrophication maps: workflow will be updated to new Julia tool "DIVAnd"
Expansion geographical coverage of products	Generation of higher resolution DIVA maps for nutrient loads near river mouths, in selected pilot areas.
Further technical developments (to serve CP)	API (for download service) OGC-CSW (for CDI metadata exchange) CDI API (for data access)
Further technical development activities	Expansion Marine Litter database system

Expansion geographical extent products	More dedicated contaminants maps will be designed along the coasts
Outreaching activities	Possible synergies will be explored: - International Ocean Carbon Coordination Project (IOCCP) and the Carbon Dioxide Information Analysis Center (CDIAC) - NOAA/NCEI – World Ocean Atlas
EMODnet Geology	
Expansion geographical coverage	Complete coverage of the Caspian Sea
Expansion geographical coverage of products	Application of novel Machine Learning methods to expand sediment composition and sediment rate maps to new areas of the European continental shelf (< 200m)
Expansion geographical coverage of products	Products on coastal behaviour: focus on new areas
EMODnet Human Activities	
Product: Vessel density maps	New method will be implemented to replace steps currently performed with ArcGIS, with PostgreSQL + PostGIS.
Product: Fishing effort	Extend to other sea basins
Proposition new product	Human Pressure Index
EMODnet Physics	
Data products	- Maps updated to increase resolution and quality in time and space. - Focus on development products that easily can be integrated in EAS.
Real-Time data streams	Improve metadata management of RT streams
EMODnet Seabed Habitats	
Expansion geographical coverage	Complete coverage of the Caspian Sea
Development tool	Transform the workflow that was developed in Phase III in the form of a script, to automate calculation of environmental layers, into an Open Source language (R or Python). Will receive support from CMEMS for this.
New library	Creation new library of Essential Fish Habitats (EFH) maps and models (Baltic Sea, NE Atlantic and Med Sea).
Collaboration EurOBIS	Streamline flow of habitat data into international systems, by developing a new infrastructure and workflow to publish data into EurOBIS.
Collaboration GCRMN-Caribbean	Work with Global Coral reef Monitoring Network – Caribbean, for coral habitat types
New composite data products	e.g. - contributing to the Mangrove Cover and Composition EOV layer; - Vulnerable Marine Ecosystems layer on top of broadscale habitat types; - habitat change over time for coastal habitats e.g. seagrass beds; - etc.
Collaboration	Apply to become provider under European Open Science Cloud (EOSC).