

Powering the European Marine Data Ecosystem

For a digital and green future

EMODnet OPEN CONFERENCE 2023



IODE and the Global Ocean Data Ecosystem

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My talking points

- 1.The IODE re-organization and transformation 2023-...
- 2.The Ocean Data and Information System (ODIS)
- 3.ODIS in the wider context of the Decade, Challenge 8 (DCO data sharing, strategy,....)
- 4.EMODnet cooperation with ODIS
- 5.EMODnet cooperation with OBIS
- 6.EMODnet cooperation with OBPS
- 7.EMODnet cooperation with OTGA

Starting points

- Network of 100 Data Centres in 68 member states
- Mostly stand alone National Data systems (except OBIS, WOD)
- Data difficult to find and use (lack of interoperability)
- Digital divide North/South with limited or no access by LDCs, SIDS
- Training limited to IODE operations
- Limited integration with other IOC and UNESCO programmes
- Often project based actions supported by member states exb contributions only.

- Global Ocean Data and Information System operational (ODIS) including marine biodiversity (OBIS)
- Easy and equitable sharing of data and information
- Easy data discovery and access
- Easy development and sharing of products and services, operational methods, and technology, at global, regional and local level
- Operational and sustained data systems and programmes
- Support science informed solutions, based on quality data for sustainable development and related global frameworks (CBD/GBF, SDG, BBNJ, WOA, IPBES)

2024-2025 and beyond

- Reinforced data management support across IOC and UNESCO programmes
- Capacity development across all IOC programmes (OTGA) through a global network of training centres and aspects of the IOC value chain including decision support
- Increased focus on inclusion (also local & indigenous knowledge)
- Active participation in development of UN Ocean Decade federated digital ecosystem
- Coordinated networks, partnerships and co-design

2023: The new IODE structure

3 Programme component, programme activities and projects

OBIS

Global open-access data and information clearing-house on marine biodiversity for science, conservation and sustainable development

- 33 OBIS nodes
- PacMAN
- eDNA Expeditions
- MARCO-BOLO
- DTO-BioFlow
- MPA Europe
- eDNAquaPlan
- BioEcoOcean

- GOOS BioEco Portal
- HAB portal

ODIS

Federated digital ecosystem

- 28 partners
- World Ocean Database
- GODAR
- GTSP
- GOSUD
- IQuOD
- AquaDocs
- OceanExpert
- ICAN
- OBPS (jointly with GOOS)
- QMF

OTGA

Federated training ecosystem with joint content platform and network of training centres

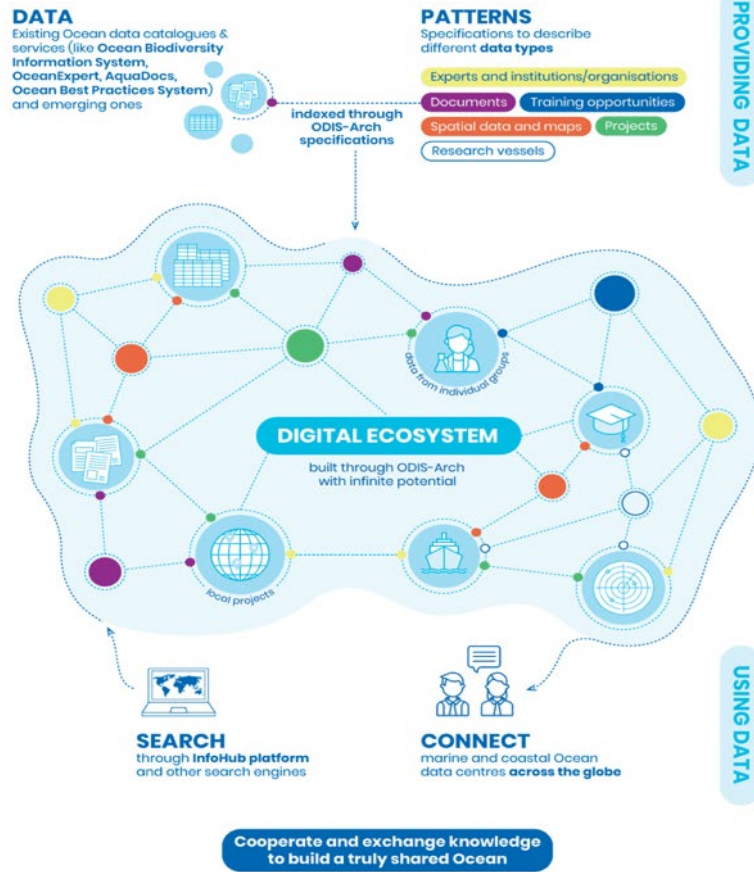
- 17 regional and specialized training centres
- Close cooperation with IOC Capacity development Unit

Ocean Data and Information System (ODIS)

And its Ocean Information Hub

Worldwide sources of Ocean information and knowledge

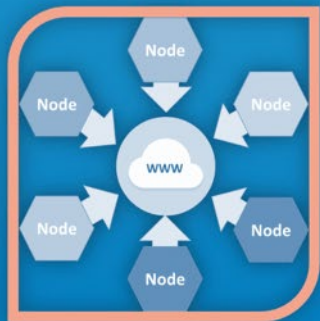
- Ocean data and digital resources are **exponentially increasing** daily, in both volume and diversity of data types and sources.
- Local, national, and regional digital systems and infrastructures **need to be interlinked** to strengthen science, technology, innovation systems, and policies for the sustainable use and management of marine areas.
- Independent digital initiatives **need to be connected** to form a diverse, but interoperable and inclusive Ocean Data and Information System.



What is our objective with ODIS

The ODIS/OIH Mission

To build a sustainable, interoperable, and inclusive **digital ecosystem** for all ocean stakeholders



- Improve discovery and interoperability of existing information systems across sectors (private, public, etc)
- Improve access to global ocean information, data, and knowledge products for sustainable ocean management
- Link and anchor a network of regional and thematic nodes that will share the metadata that they choose to expose;
- Provide capacity building to support contributors and end-users of the global OIH
- Connect independent digital initiatives to form a diverse, but interoperable and inclusive, Ocean Data and Information System



Ocean Data and Information System (ODIS)

Partners currently indexed by ODIS/OIH

Strait of Georgia Data Centre	Peace Boat US	POLDER	South African Institute for Aquatic Biodiversity (SAIAB)	Anthropocene Institute	IDEM-DHN Brazil	SDG Federated Data System
Protected planet	NOAA OneStop	OpenOceanCloud	Marine Information Management System (MIMS)	NOAA / Open-GTS / GOOS Observations Coordination Group	Global fishing watch	Hakai Institute
MarCOSIO (formerly MarCoSouth)	Aquatic Sciences and Fisheries Abstracts (ASFA) + FAO	MEDIN (Marine Environmental Data and Information Network)	Research Data Australia	Better Biomolecular Ocean Practices (BeBOP) as part of Ocean Biomolecular Observing Network (OBON)	Population Health domain (cross-domain interoperability)	IOOS
CCLME Eco-viewer	Blue Planet / BIOPAMA (RCMRD)	EMODnet	CLME+ training portal	OBIS	WIO Symphony project	DOOS (Deep Ocean Observing Strategy)
OBON (Ocean Biomolecular Observing Network)	Leibniz Center for Tropical Marine Research (ZMT)	EUROCEAN	SeaDataNet	Caribbean Marine Atlas	ICAN	Digital Earth Africa
IUCN (International Union for Conservation of Nature)	GEO Bon-in-a-box	INVEMAR (LAC regional portal)	OceanScape Project	CORDIO / MASPANIO	World Environment Situation Room (WESR)	PICES
Nairobi Convention (clearinghouse)	Heimholtz (PLB)	BCC data portal (Benguela Current Commission)	Flanders Marine Institute (VLIZ)	Aquadocs	Copernicus Marine Environment Monitoring Service (CMEMS)	HUB Ocean
DITTO	IW_Learn 5	Canadian Integrated Ocean Observing System	Indonesian NODC	Sargassum Hub	Foundation for Industrial and Technical Research (SINTEF)	BCO-DMO (Biological & Chemical Oceanography Data Management Office)
Argentina, NODC	CODATA	OBPS	Marinetraining.eu	SPC (Pacific Data hub)	Australian Ocean Data Network (AODN)	Mozambique Oceanographic Institute
Colombia DIMAR NODC	GEMS Ocean (UNEP)	OceanExpert	IOC/Africa data portal	SPREP (Pacific Environment Data Portal)	Integrated Marine Observing System (IMOS)	Global Platform for Marine Litter (GPMLE)
Colombia National Natural Parks	MSP project IOC	METS RCN - Research Coordination Network for Marine Ecological Time Series	National Marine Data and Information Service (NMDIS) - China	World Ocean Database	UNESCO Convention on the Protection of the Underwater Cultural Heritage	Plastic-i
UNEP (UN Environment Programme)	Marine debris data harmonization workshop (WS) Japan	British Oceanographic Data Centre (BODC)	Belgian Marine Data Centre (BMDC)	El Salvador Ministry of Environment	IOCARIBE catalogue	SOCIB - Balearic Islands Coastal Observing and Forecasting System
Tsunami	INCOIS	SARGASSUM Hub	Marine Institute Data Catalogue	SCOR	Permanent Commission of the South East Pacific (CPPS)	Virtual Institute for the Sustainable Development (VIDES.org)
University of California San Diego, SCRIPPS	GEBCO Seabed 2030	Ocean Acidification (OA) UNESCO	MARISMA			

ODIS in the wider context of the Decade, Challenge 8

IODE serving the Decade



- **Data and information** are key to delivering the science we need for the ocean we want.
- The Decade Data and Information Strategy has the **vision** to create by 2030 “*A trusted, inclusive, and interconnected ocean data and information ecosystem... building on what already exists*“
- The **Ocean Data and Information Service (ODIS)** provides an interoperability layer and supporting technology to allow existing and emerging ocean data and information systems, from any stakeholder, to interoperate with one another.
- **Ocean Data 2030 – A Decade Programme to implement ODIS and expand its reach beyond IOC**
- **Ocean Info Hub** – A central element of the Ocean Data 2030: co-design of user need focused regional data systems + provide necessary CD
- **ODIS is key infrastructure** providing foundation for the distributed interconnected data and information ecosystem envisaged by the Decade’s Data and Information Strategy
- **EMODnet** is an example of **regional best practice**, overcoming fragmentation and promoting interoperability – contributing to ODIS/OIH as a regional data service

EMODnet cooperation with ODIS

Valued partner representing IODE NODCs in Europe...

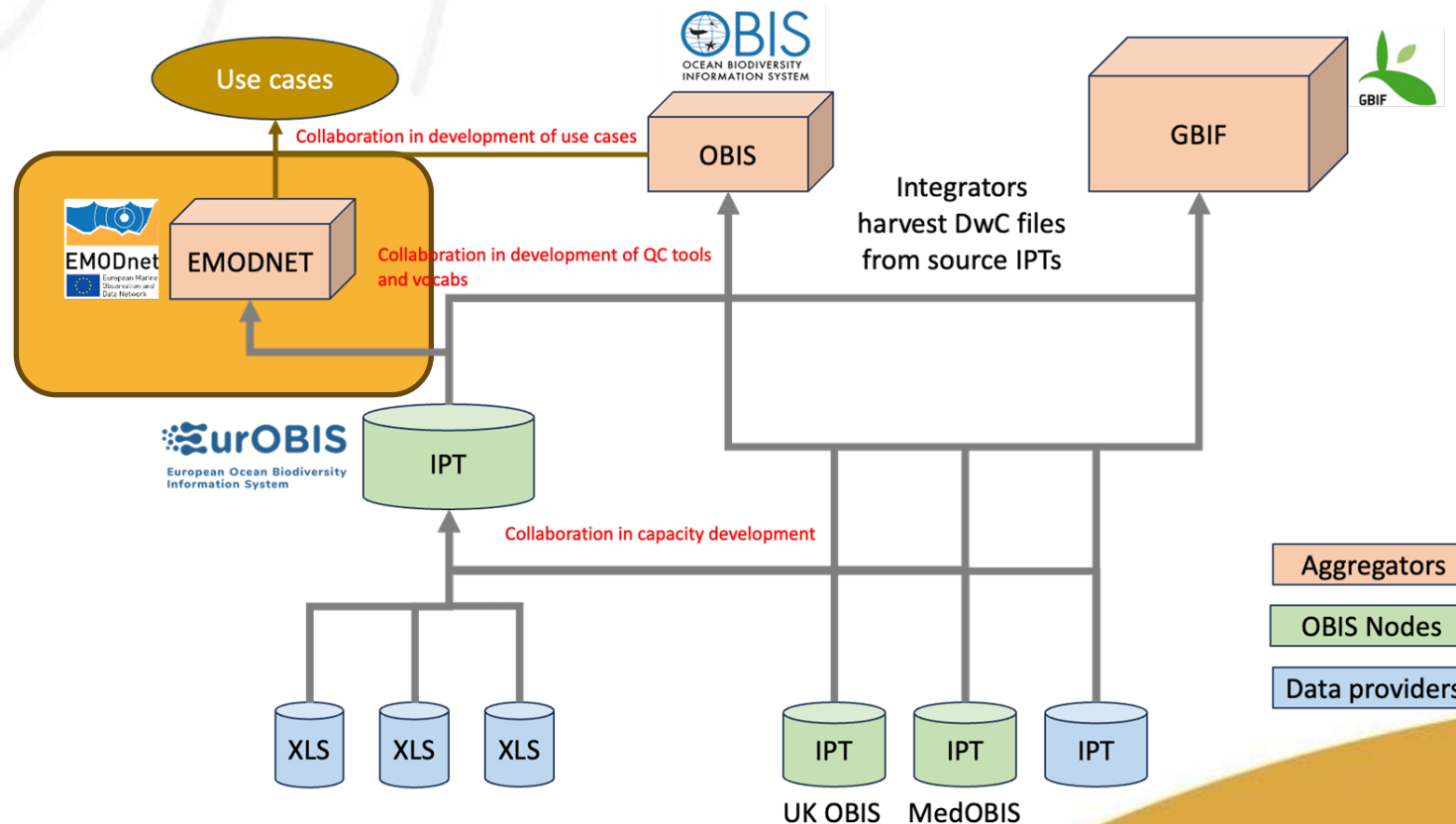


The new unified EMODnet service has been indexed by OIH/ODIS.

Over 750 EMODnet metadata records are now discoverable through the front end Global Search Hub

A screenshot of the EMODnet Global Search Hub interface. The top navigation bar includes 'HOME', 'ABOUT', 'REGIONS & PARTNERS', 'ODIS', 'UN DECADE', and 'CONTACT'. A search bar at the top contains 'Global' in a dropdown and 'EMODnet' in the input field, with a 'Search' button. Below the search bar is a horizontal menu with circular indicators for: Documents (25), Experts (2), Institutions (12), Datasets (763), Training (3), Vessels (0), Projects (18), and Spatial Search (65). The 'Datasets' category is highlighted. Below the menu are filter buttons for 'Provider', 'Keywords', 'Variable Me', 'Starting Be', and 'Ending Be', along with a 'CLEAR' button. The search results section shows 'Total results found 763' and a sample result: 'Collection of Water Surface Height Above a Specific Datum (SLEV) TimeSeries, MultiPointTimeSeriesObservation - 60 minutes frequency'. The result details include the name, keywords (EMODnet Physics, Earth Science > ..., Oceanographic ge..., above, area, assembly, author, center, code, collection, contributor, data, datum, depth, earth, edmo, emodnet, flag), and a data catalog link: https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog_search#/home.

EMODnet cooperation with OBIS



EMODnet cooperation with OBPS

Collaboration on best practices



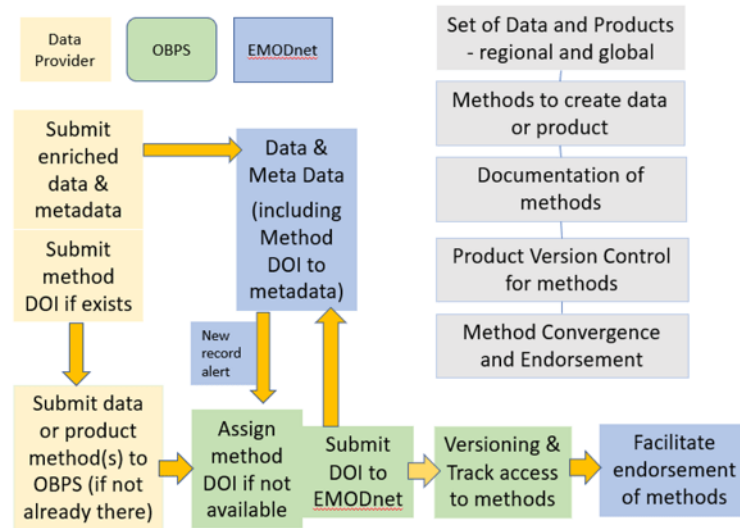
EMODnet is an active contributor to methods in OBPS Repository <https://www.oceanbestpractices.org/>

EMODnet-OBPS linking data to methods used in their creation builds trust and interoperability

- Inclusion of methods metadata in EMODnet Catalogue (for Physics, Chemistry and Bathymetry) with link to OBPS method record
- Link in OBPS method record to EMODnet product or datasets that used the method in process and creation

Specific Use cases in progress for both products and data

Monitoring adoption indicates which methods (practices) should be considered for convergence and/or endorsement



EMODnet cooperation with OTGA

Capacity development

Co-designing and **delivering** top-level **training courses** open and free of charge to the ocean community in Europe and beyond.

List of the EMODnet/OTGA past courses

- 2017 Research Data Management
- 2018 Contributing datasets to EMODnet Biology
- 2020 Contributing datasets to EMODnet Biology
- 2024 (NEW self-paced) Contributing datasets to EMODnet Biology

also contributing to courses organized by other partners

more than **300** participants (Experts and students)
from **58** countries



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EMODnet



European Marine
Observation and
Data Network

Thank you for your attention

<https://www.iode.org>

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