

● SESSION #3 - POST 2024 PERSPECTIVES

Conclusion & perspectives



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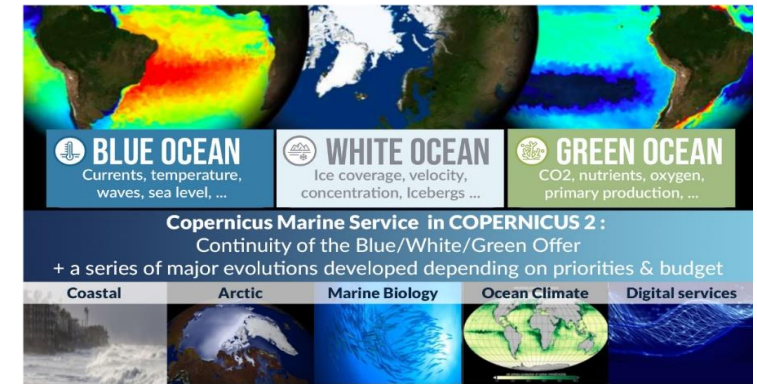
Scientific Director



**MERCATOR
OCEAN**
INTERNATIONAL

Copernicus Marine 2021 - 2028

An ambition plan aligned with the EU Green Deal and Digital Strategies



Remain a marine reference worldwide. User uptake

Staged implementation driven by user&policy needs and science&technology advances

- Continuity of service** with incremental evolution
- Embrace the **new capabilities of digital services**. Synergy with **Digital Twin Ocean**
- Prepare the implementation of the **next generation of ocean and sea ice monitoring and forecasting systems** and new services for **Coastal (with Member States) and Biology**.

International cooperation & impact (UN Decade)

2021-2024 Achievements / Summary

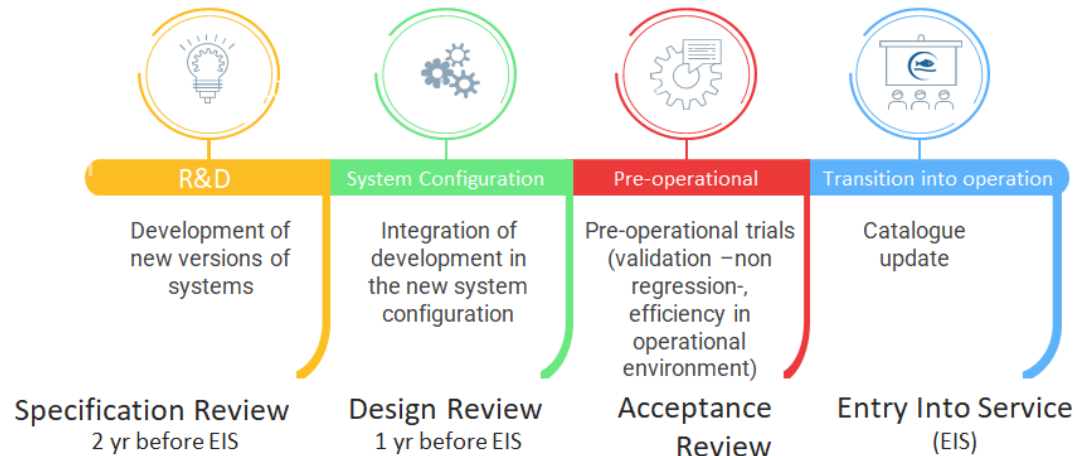
- User Uptake: > 70,000 subscribers, Web: 1 million visitors
- Reinforced governance: Marine User Forum
- Operational and continuous improvements
- A fully overhauled Marine Data Store – links with the DTO
- Ocean Monitoring Indicators and Ocean State Reports
- Start coastal extension of the service
- Development of Coastal and Arctic Thematic Hubs
- National Collaboration Programme
- User & Policy needs - User Feedbacks
- Future evolutions: R&D roadmap, service evolution R&D calls, Horizon Europe projects, Copernicus SRIA.



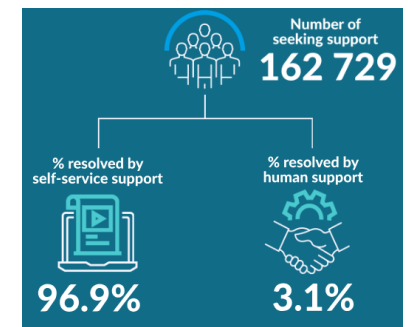
Operational Service and Continuous Improvements

Copernicus Marine production centres (TACs, MFCs): operational service and many improvements of observation and model products. 5 releases of portfolio.

Research-to-operation process: system and product evolutions managed with a series of formal reviews



User Support and User Service



The new Marine Toolbox

The Marine Data Store and Toolbox has been operational since early March 2024. A scalable cloud infrastructure to guarantee seamless retrieval of large datasets, high-performance data latency, full metadata access, and efficient post-processing features, providing a significant leap forward in data access capabilities.



Metadata information

List and retrieve metadata information on all variables, datasets, products, and their associated documentation.



Subset datasets

Subset datasets to extract only the parts of interest, in the preferred format, such as Analysis-Ready Cloud-Optimized (ARCO) Zarr or NetCDF file format.



Advanced filters

Apply simple or advanced filters to get multiple files at once, in original formats like NetCDF/GeoTIFF, via direct Marine Data Store connections.



No quotas

Enjoy no quotas, neither on volume size nor bandwidth.



● Myocean viewers



MYOCEAN LEARN
FOR BEGINNERS

Understand key variables

MYOCEAN LIGHT
FOR INTERMEDIATE USERS

Access key variables



MYOCEAN PRO
FOR EXPERTS

Access full catalogue

277k
users

x 4.5
vs 2022

● Post 2024 plans (1/2)

- Build on 2021-2024 achievements **to continue evolving** Copernicus Marine product and service offer in response to user and policy needs.
- Working with and for Member States: Marine User Forum. Strengthen our **National Collaboration Programme**.
- Strengthen **cooperation with other services** and **EMODnet**.
- Synergies with the **EU Digital Twin Ocean**.
- **Prepare the uptake of future Sentinel** Expansion missions.
- Prepare **post 2028 service evolution** (Horizon Europe, Mission Ocean).

● Post 2024 plans (2/2)








- Continuous **evolutions of observation and modelling products**. Integration of new satellite missions (e.g. SWOT) and in-situ observations, improvement of processing techniques, models, coupling and data assimilation, increasing use of AI.
- Progressively **implement an ensemble forecasting service line**.
- Evolution of the **Marine Data Store**. Synergies with the EU DTO development. Develop the use of EU DTO platform (EDITO) by production centers.
- Consolidation of **observation Impact assessment**.
- Continue implementing a **coastal extension of the service** with member states. National Collaboration programme. R&D through the FOCCUS Horizon Europe project.
- New **biology products** depending on progress of NECCTON Horizon Europe project.











Copernicus Marine and the UN Decade of Ocean Science

Aligning efforts towards the ocean we want – Contribution to the UN Decade 2030 vision International collaboration and impact

- ❑ Contribution to most of the outcomes and challenges of the UN Decade
- ❑ Contribution to many of its programmes and projects
- ❑ Direct links with the OceanPrediction DCC



 A clean ocean where sources of pollution are identified and reduced or removed.	 A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed.	 A productive ocean supporting sustainable food supply and a sustainable ocean economy.
 A predicted ocean where society understands and can respond to changing ocean conditions.	 A safe ocean where life and livelihoods are protected from ocean-related hazards.	 An accessible ocean with open and equitable access to data, information and technology and innovation.
	 An inspiring and engaging ocean where society understands and values the ocean in relation to human wellbeing and sustainable development.	

 Challenge 1 Understand and beat marine pollution Understand and map land and sea-based sources of pollutants and contaminants and their potential impacts on human health and ocean ecosystems and develop solutions to remove or mitigate them. Watch the video	 Challenge 2 Protect and restore ecosystems and biodiversity Understand the effects of multiple stressors on ocean ecosystems, and develop solutions to monitor, protect, manage and restore ecosystems and their biodiversity under changing environmental, social and climate conditions. Watch the video
 Challenge 3 Sustainably feed the global population Generate knowledge, support innovation, and develop solutions to optimise the role of the ocean in sustainably feeding the world's population under changing environmental, social and climate conditions. Watch the video	 Challenge 4 Develop a sustainable and equitable ocean economy Generate knowledge, support innovation, and develop solutions for equitable and sustainable development of the ocean economy under changing environmental, social and climate conditions. Watch the video
 Challenge 5 Unlock ocean-based solutions to climate change Enhance understanding of the ocean-climate nexus and generate knowledge and solutions to mitigate, adapt and build resilience to the effects of climate change across all geographies and at all scales, and to improve services including predictions for the ocean, climate and weather. Watch the video	 Challenge 6 Increase community resilience to ocean hazards Enhance multi-hazard early warning services for all geographical, ecological, biological, weather, climate and anthropogenic related ocean and coastal hazards, and mainstream community preparedness and resilience. Watch the video
 Challenge 7 Expand the Global Ocean Observing System Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely, and actionable data and information to all users. Watch the video	 Challenge 8 Create a digital representation of the ocean Through multi-stakeholder collaboration, develop a comprehensive digital representation of the ocean, including a dynamic ocean map, which provides free and open access for exploring, discovering, and visualising past, current, and future ocean conditions in a manner relevant to diverse stakeholders. Watch the video
 Challenge 9 Skills, knowledge and technology for all Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders. Watch the video	 Challenge 10 Change humanity's relationship with the ocean Ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change required for a step change in humanity's relationship with the ocean. Watch the video



● Conclusion / post 2024 plans

- Build on our past achievements to continue evolving Copernicus Marine product and service offer
- Maintain a world leading and state-of-the art marine service responsive to user and policy needs
- Prepare post 2028 activities and new challenges for a safe, protected and sustainable Ocean

COPERNICUS MARINE
8th **GENERAL
ASSEMBLY**

Final words / closing

