Copernicus Marine Service

# COPERNICUS MARINE 8th GENERAL ASSEMBLY

## Overview

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MERCATOR OCEAN INTERNATIONAL

Copernicus Marine Service
PROGRAMME OF THE EUROPEAN UNION
Copernicus Europe's eyes on Earth
implemented by MERCATOR OCEAN INTERNATIONAL

# Drivers – Copernicus Marine

**Increasing needs of ocean monitoring and prediction capabilities**

- To understand, predict and adapt to climate change
- For a sustainable management of the ocean
- To protect marine ecosystems and biodiversity

**The Ocean higher than ever in the political agenda**

- Europe : Green Deal, Digital Strategy, Mission Ocean
- International: UN Ocean Conference, UN Decade, COP

**Observe, model, predict to inform and act**

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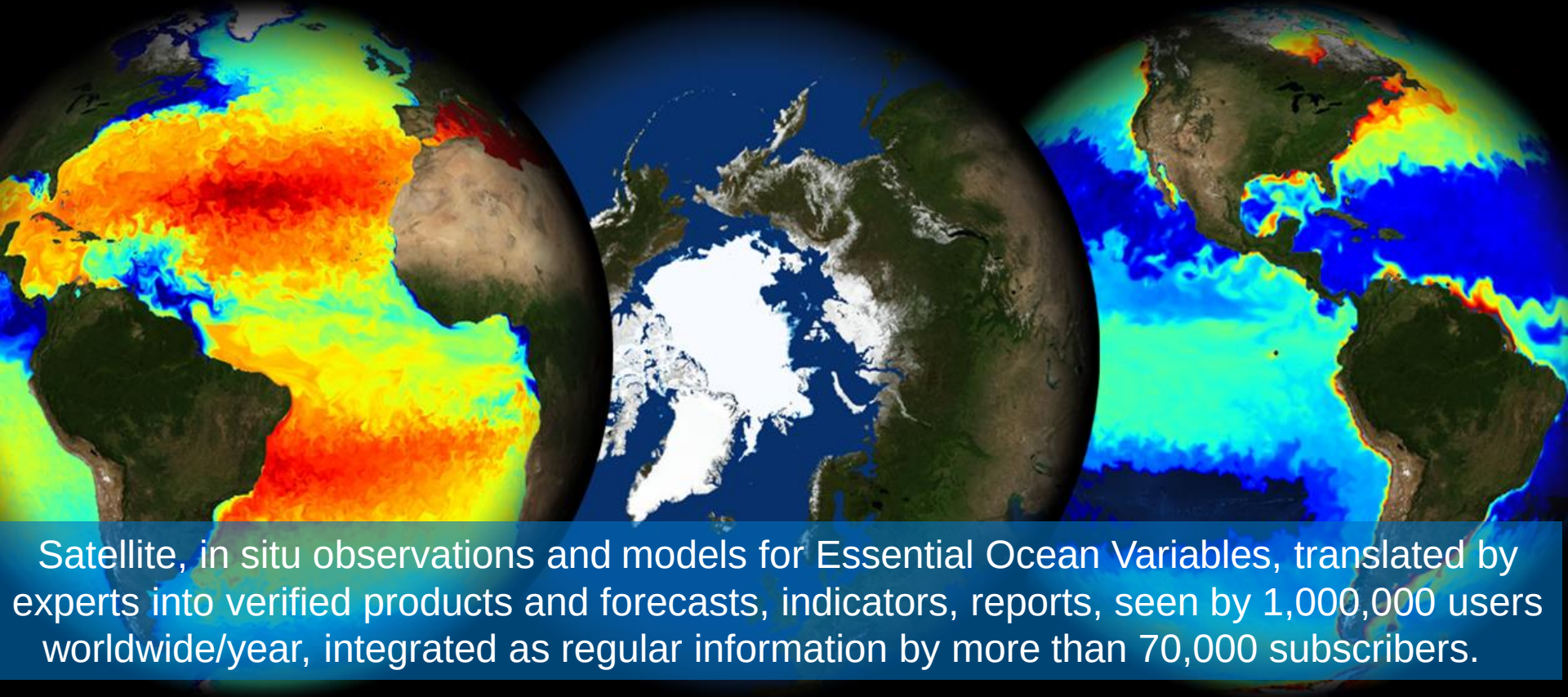
# « The Ocean », according to marine.copernicus.eu



Satellite, in situ observations and models for Essential Ocean Variables, translated by experts into verified products and forecasts, indicators, reports, seen by 1,000,000 users worldwide/year, integrated as regular information by more than 70,000 subscribers.

PROGRAMME OF THE EUROPEAN UNION

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# Global and Regional Ocean Monitoring and Forecasting

COPERNICUS MARINE REGIONAL OCEAN PRODUCT DIVISIONS

1. Global Ocean
2. Arctic Ocean
3. Baltic Sea
4. European North West Shelf Seas
5. Iberian Biscay Ireland Seas
6. Mediterranean Sea
7. Black Sea

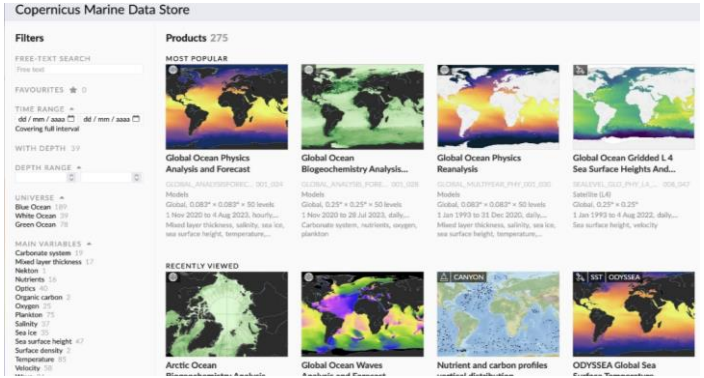

**MULTI-YEAR** 10 to 45 years › **REAL-TIME** Daily, hourly › **FORECAST** 2 to 10 days

**ESSENTIAL MARINE VARIABLES**

| BLUE OCEAN | WHITE OCEAN | GREEN OCEAN |
|---|---|---|
| Physics | Sea Ice | Biogeochemistry |

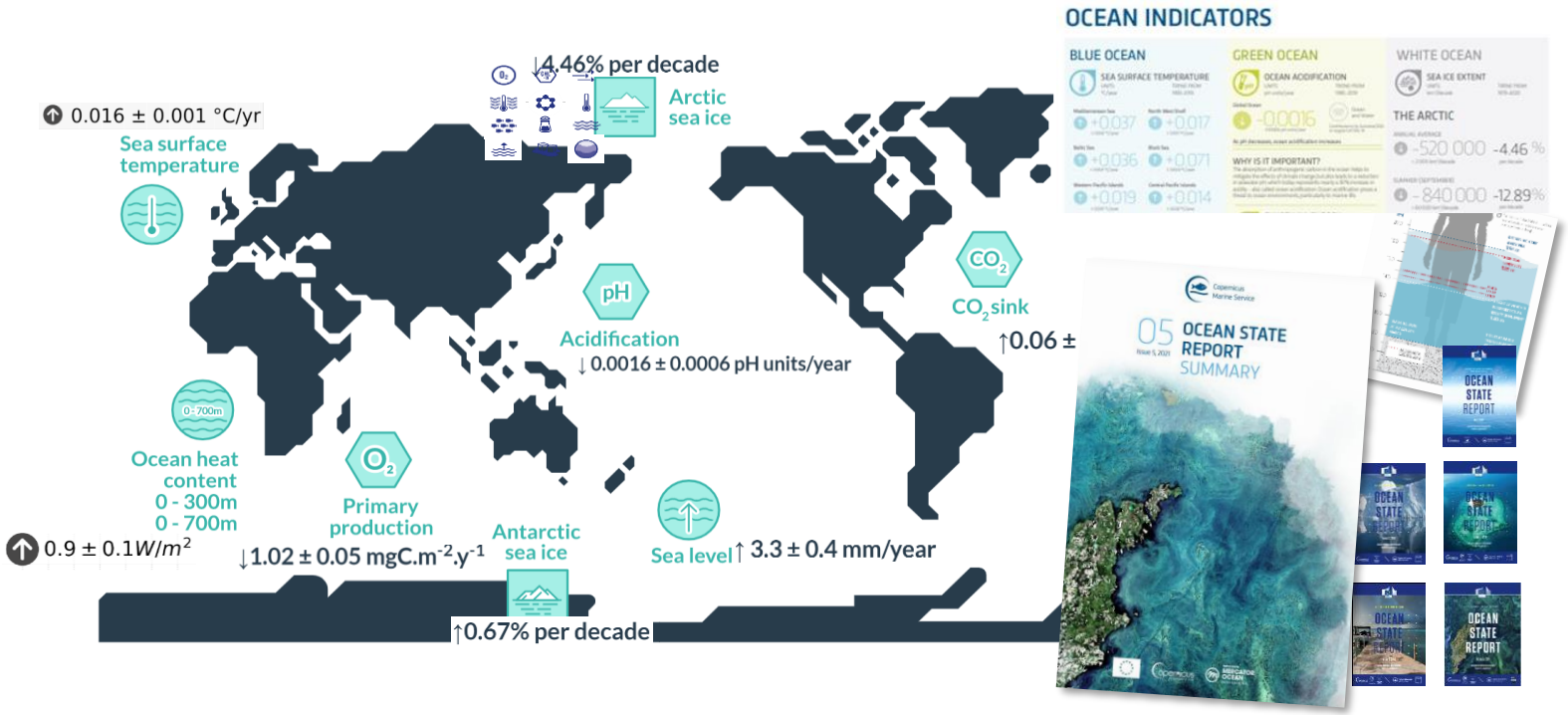
**OBSERVATIONS** In-situ & satellites › **NUMERICAL MODELS** & data assimilation

# Copernicus Marine Offer : Observation and Model products


- Observation products and model products
- Access to products: a cloud-based infrastructure – The Copernicus Marine Data Store.
- Description of each product - information on quality
- Service desk / expert advice

# Informing policy : indicators and ocean state reports



# Copernicus Marine 2021 - 2028

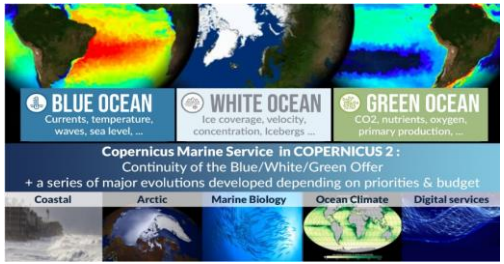
## An ambition plan aligned with the EU Green Deal and Digital Strategies

**Remain a marine reference worldwide. Foster User Uptake**

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

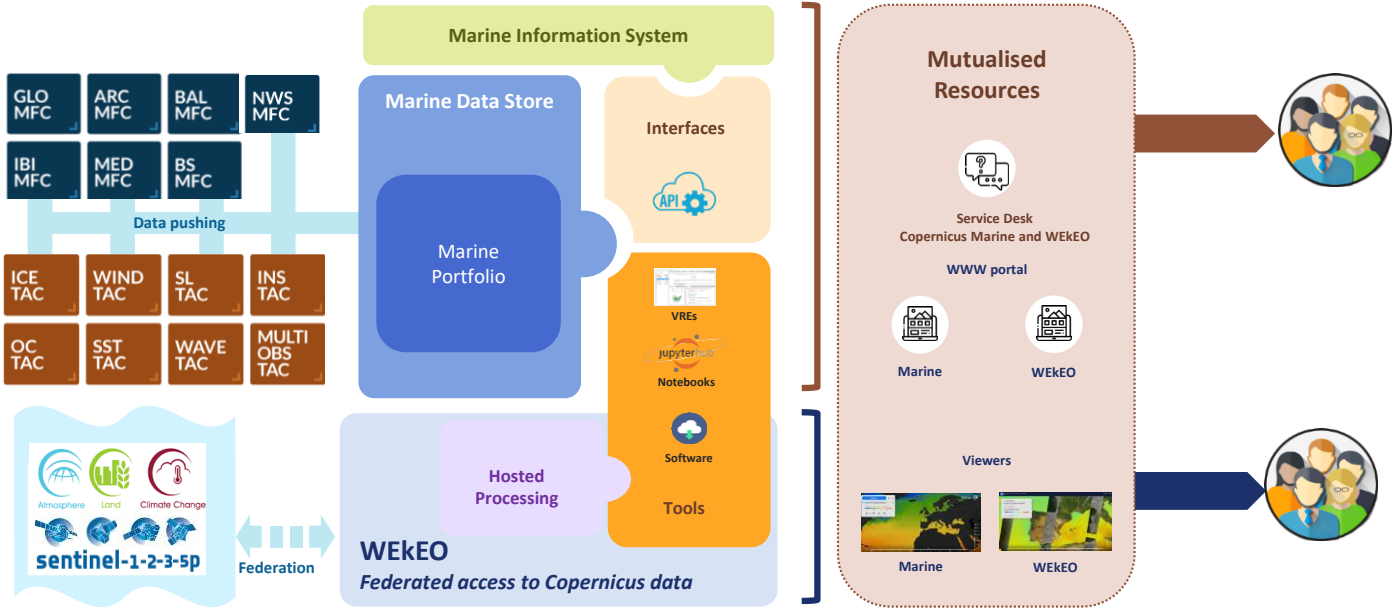
- **Continuity of service** with incremental evolution.
- Embrace the **new capabilities of digital services.** Synergy with Digital Twin Ocean.
- Prepare the implementation of the **next generation of ocean and sea ice monitoring and forecasting systems** and new services for **Coastal (with Member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

**International cooperation & impact (UN Decade)**



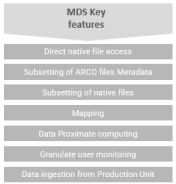
# Copernicus Marine System of Systems

Production Centres (Observations and Models) feeding a Marine Data Store. Integrated Copernicus Marine and WEkEO platform&service. Synergies with EU DTO development.



# 2021-2024 achievements

- Planning and delivering: five releases of portfolio
- A fully overhauled Marine Data Store
- Ocean State Reports – new organization / journal
- Development of Coastal and Arctic Thematic Hubs
- Ocean ECVs processing for C3S/ECMWF
- User& Policy needs : KCEO, Regional Conventions, EUSPA
- User Feedbacks/Needs - annual updates
- Reinforced governance: Marine User Forum
- Start coastal extension of the service
- National Collaboration Programme. First call (15 projects).
- Future evolutions: R&D roadmap, 1st service evolution R&D call (14 projects), 2nd call, Horizon Europe Copernicus evolution projects, Copernicus SRIA.

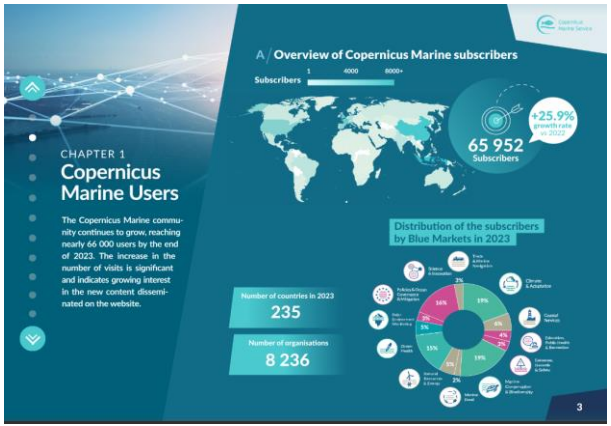




NECCTON
NEW COPERNICUS CAPABILITY FOR TROPHIC OCEAN NETWORKS

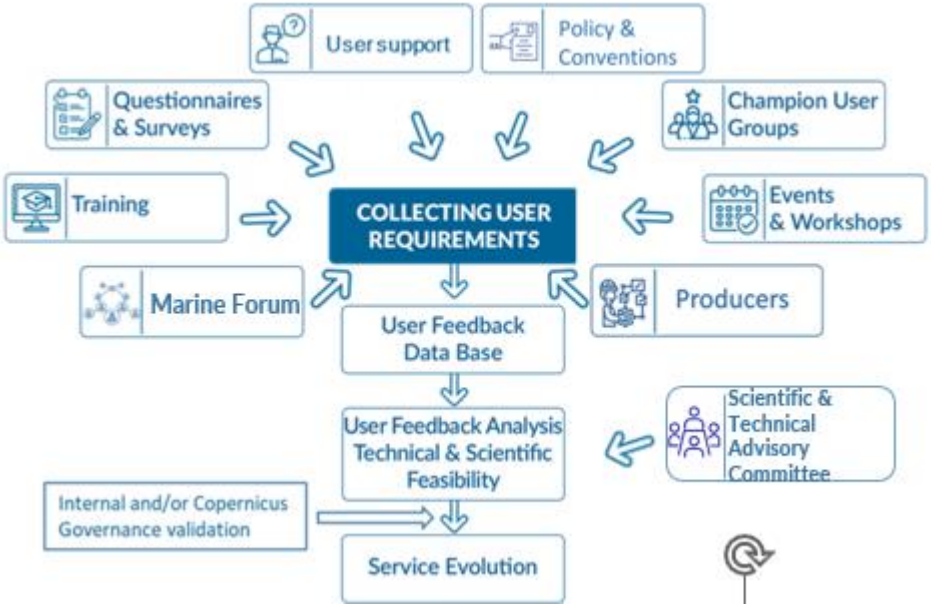
# Large uptake in all marine / maritime sectors

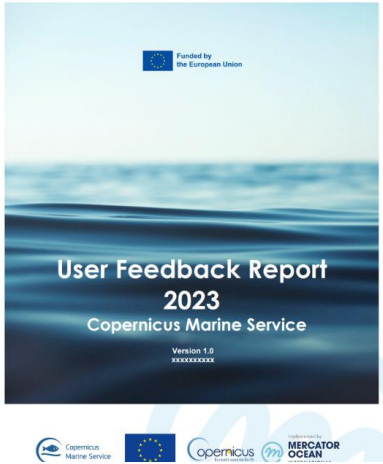
1 POLAR ENVIRONMENT MONITORING
2 CLIMATE & ADAPTATION
3 OCEAN HEALTH
4 MARINE CONSERVATION & BIODIVERSITY
5 SCIENCE & INNOVATION
6 POLICIES & OCEAN GOVERNANCE & MITIGATION
7 EDUCATION, PUBLIC HEALTH & RECREATION
8 EXTREMES, HAZARDS & SAFETY
9 MARINE FOOD
10 COASTAL SERVICES
11 TRADE & MARINE NAVIGATION
12 NATURAL RESOURCES & ENERGY


# A user and policy driven service

## User feedback and service evolution process

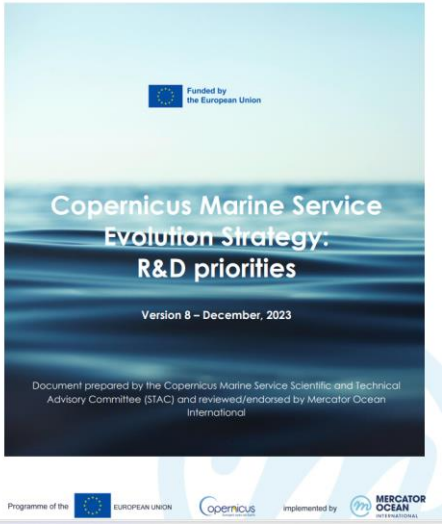


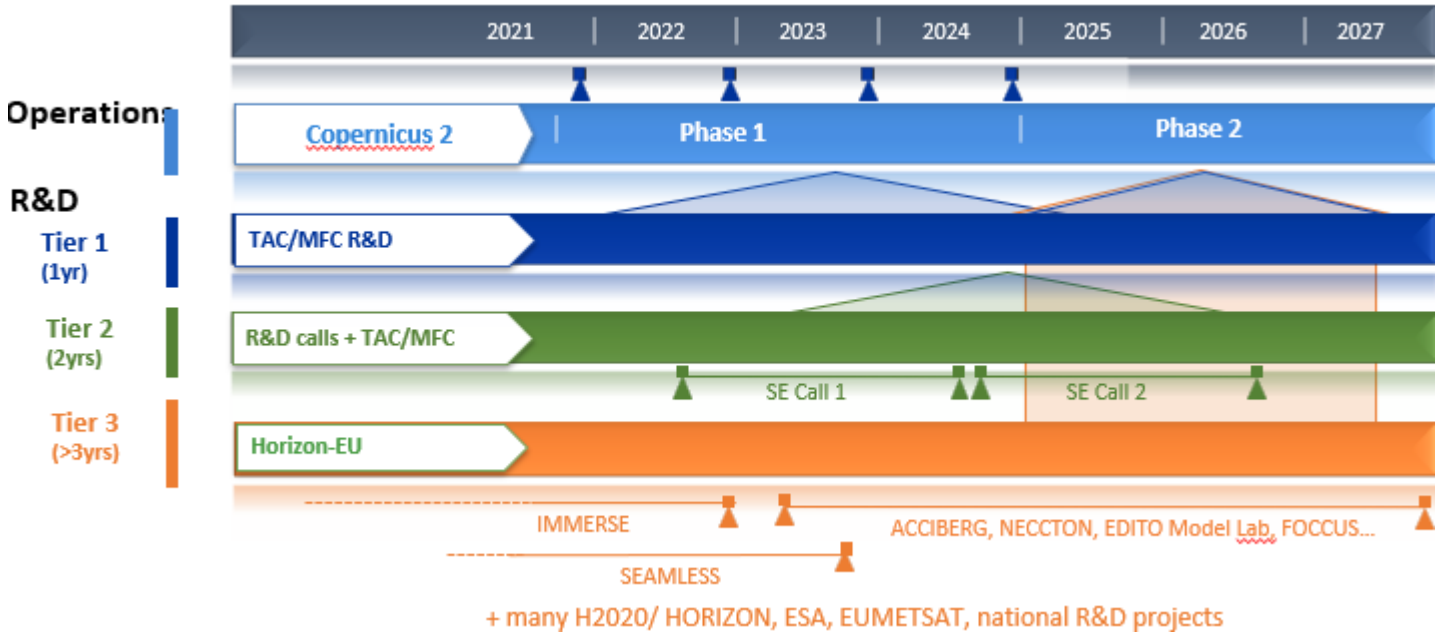

Translate User feedbacks into achievable service evolution objectives taking into account scientific&technological advances

# Service Evolution activities : R&D Streams

**Document prepared by the Copernicus Marine Scientific and Technical Advisory Committee (STAC)**



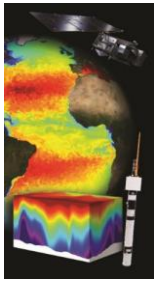

## 3 Streams defined with different time horizons, players and objectives



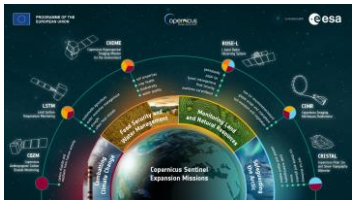

**Keywords: resolution, ensemble, assimilation, AI, coupling, Arctic, biology, coastal, land/sea interfaces,..**

# Working with the Copernicus Space and In situ components

The Copernicus Marine Service is highly dependent on satellite (Sentinels) and in-situ observing capabilities. Requirements documented and regularly updated. **Impact assessment and advocacy**.



Integration of S1, 2, 3 A & B in Copernicus 1, S6A in Copernicus 2 and future integration of S1,2,3 C & D. Preparing for expansion missions (in particular Arctic Ocean). Support the EC for Sentinel NG mission design.




Working with EEA, EuroGOOS and EOOS to strengthen in-situ coordination and development of in-situ observing system. **International cooperation (GOOS) and UN Decade of Ocean Science**.

# International cooperation and UN Decade of Ocean Science


- Essential role of international cooperation (from observation, to prediction and users) is essential
- UN Decade of Ocean Science is a unique opportunity
- Copernicus Marine: a major asset to contribute to the UN Decade 2030 vision and its “predicted ocean” outcome
- Contribute to the development of a worldwide ocean prediction system as part of the OceanPrediction DCC

2021 2030 United Nations Decade of Ocean Science for Sustainable Development

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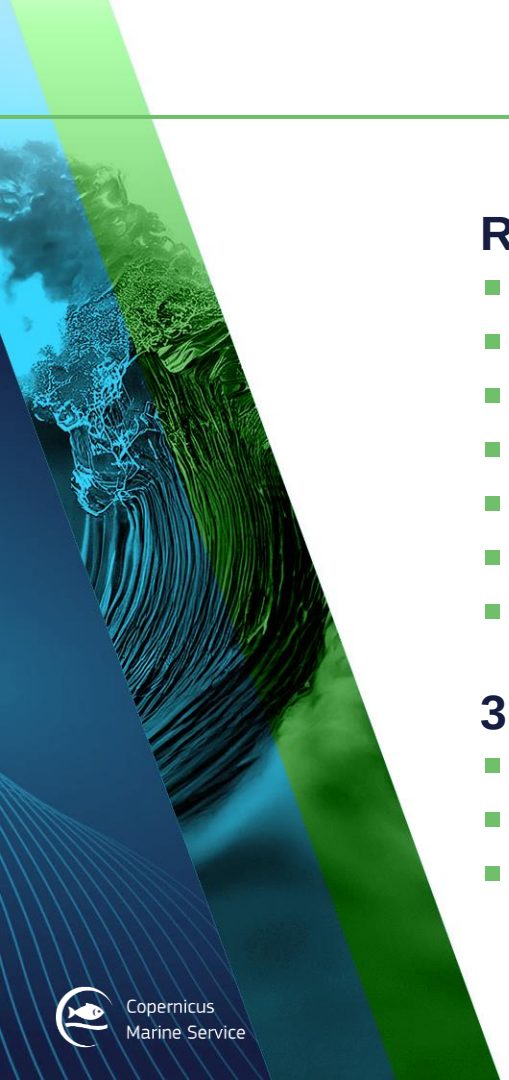
Ocean Prediction



# This General Assembly

## Review 2023&2024 achievements – Copernicus 2 phase 1

- Production Centers (TACs/Observations and MFCs/Models)
- Product Quality assessment methodologies
- Ocean State Reports and Ocean Monitoring Indicators
- User Uptake and User Services
- Marine Data Store and synergies with the EU Digital Twin Ocean
- User needs, Service evolution R&D and links with Horizon Europe
- User Engagement and National Collaboration programme

## 3 round tables

- Upstream satellite and in situ infrastructure
- Working with the other Copernicus services and EMODnet
- National Collaboration Programme

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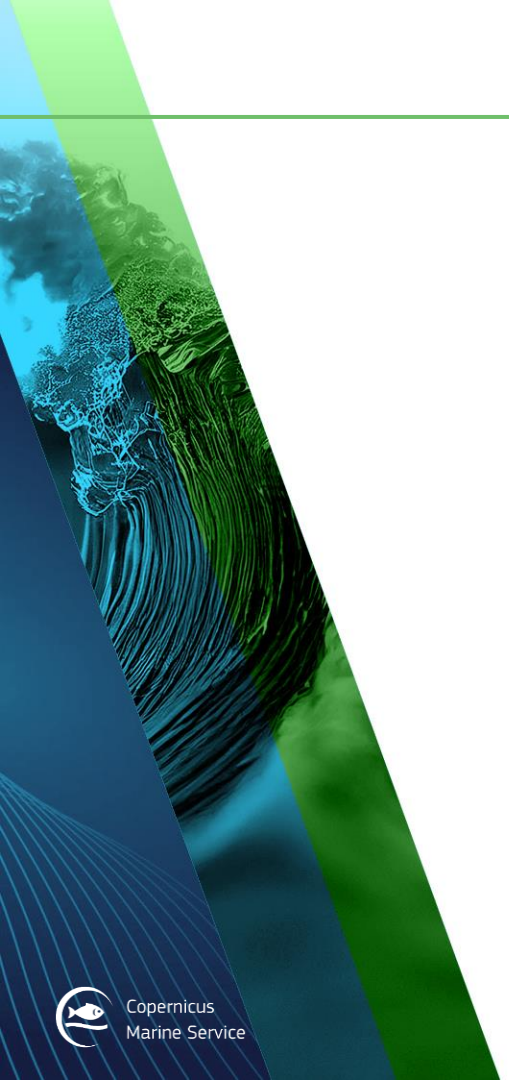
# Q&A sessions - Use of Slido



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