

OCEAN AND ENVIRONMENTAL TECHNOLOGIES AND SERVICES

Part 1 : Ocean Focus

Wednesday 20 October
9:00 AM to 01:15 PM

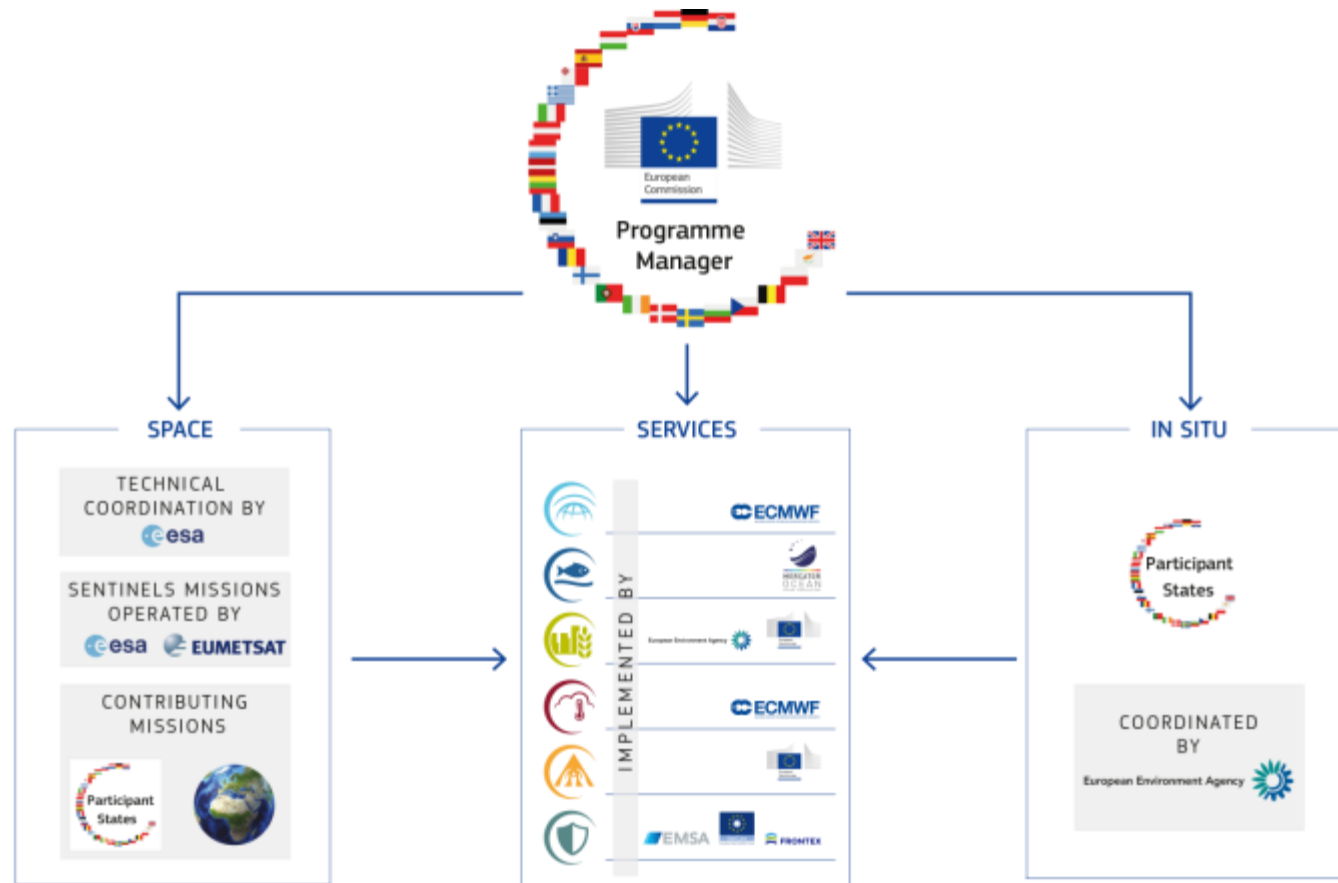


PROVIDING REAL TIME OCEAN DATA FOR A SAFER DECISION-MAKING

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EU COPERNICUS PROGRAMME EUROPE'S EYES ON EARTH



COPERNICUS MARINE SERVICE

marine.copernicus.eu

The screenshot shows the Copernicus Marine Service website. At the top, it says 'Implemented by Mercator Ocean International as part of the Copernicus Programme'. The navigation bar includes 'Resources', 'News', 'Events', 'Contact', and 'Register'. Below the navigation bar, there are logos for 'Copernicus' and 'Copernicus Marine Service'. The main heading is 'Copernicus Marine Service' with the tagline 'Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.' There is an 'Access Data >' link. Below this, there are four main service categories: 'OCEAN PRODUCTS', 'OCEAN STATE REPORT', 'OCEAN MONITORING INDICATORS', and 'OCEAN VISUALISATION'. At the bottom, there is a 'Quick Links' section with four items: 'User corner', 'Policy tools', 'Services', and 'User learning services'.

- One Single Portal
- MARINE PRODUCTS
- **OPEN&FREE**
- Sustained in the long term
- User-Driven



OUR OFFER, A PUBLIC GOOD

DATA	EXPERTISE	TRENDS	EXPLORATION
<p>OCEAN PRODUCTS</p> <p>A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.</p>	<p>OCEAN STATE REPORT</p> <p>Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.</p>	<p>OCEAN MONITORING INDICATORS</p> <p>Essential variables monitoring the health of the ocean over the past quarter of a century.</p>	<p>OCEAN VISUALISATION</p> <p>Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users</p>

MULTI-YEAR
Last 25 years



REAL-TIME
Daily, hourly



FORECAST
10 day fcst

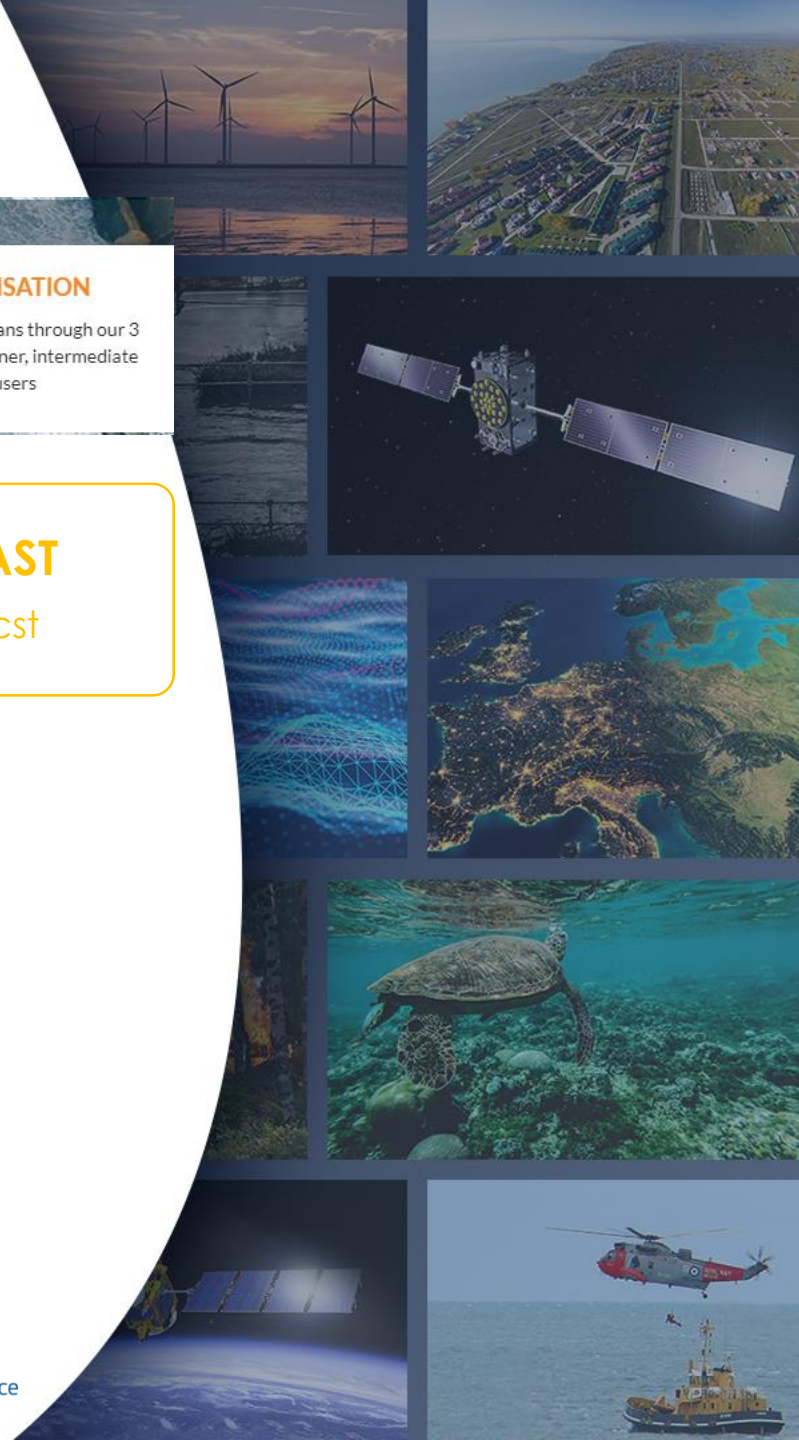
ESSENTIAL MARINE VARIABLES

 <p>Blue Ocean</p> <p>(Physics)</p>	 <p>White Ocean</p> <p>(Sea Ice)</p>	 <p>Green Ocean</p> <p>Biogeochemistry</p>
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OBSERVATIONS
In-situ & Satellites



NUMERICAL MODELS & data assimilation



OUR OFFER, A PUBLIC GOOD


1- ESSENTIAL OCEAN VARIABLES



OUR OFFER, A PUBLIC GOOD

2- OCEAN MONITORING INDICATORS

[Ocean State Reports](#) | [CMEMS \(copernicus.eu\)](#)




SEA SURFACE TEMPERATURE
UNITS: DEGREES CELSIUS/YEAR
TREND FROM 1993-2018

Global Ocean




+0.015
±0.001 °C/year



OCEAN HEAT CONTENT (0-700 M)
UNITS: WATTS/M²
TREND FROM 1993-2018

Global Ocean



+0.9
±0.1 W/M²

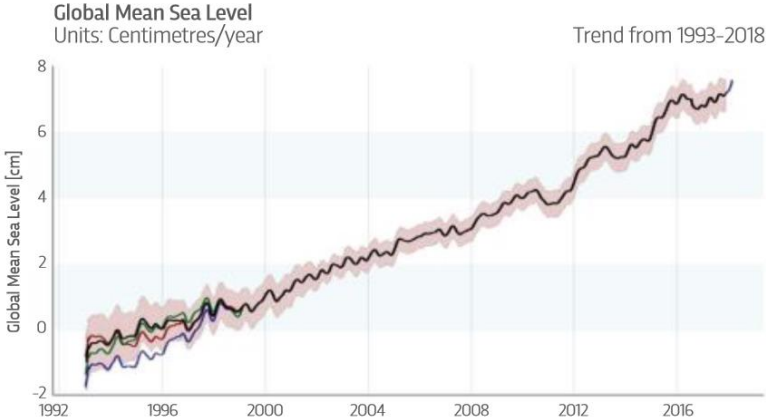


SEA LEVEL
UNITS: MM/YEAR
TREND FROM 1993-2018

Global Ocean

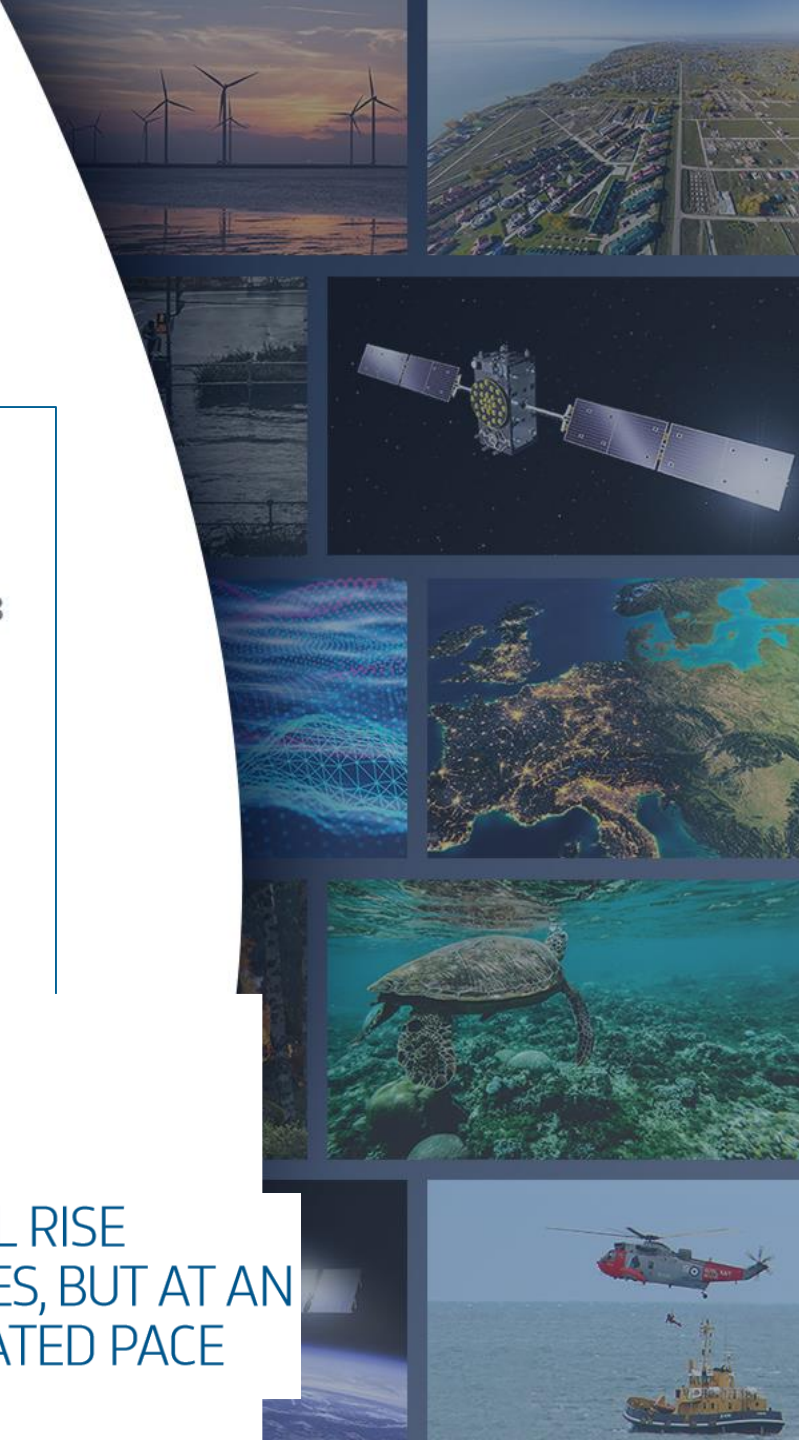


+3.3
±0.4 MM/YEAR



OCEAN AND ENVIRO
TECHNOLOGIES AND

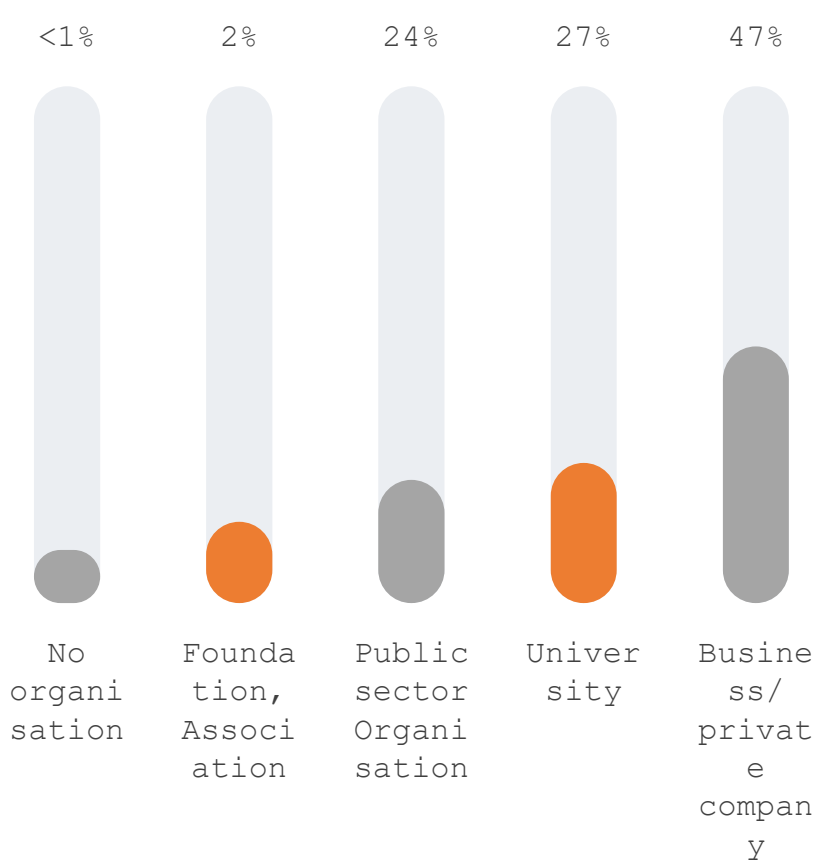
SEA LEVEL RISE
CONTINUES, BUT AT AN
ACCELERATED PACE



COPERNICUS MARINE USER UPTAKE

>33 000 Subscribers
6 700 new subscribers in 2020

- 47% size downloaded by Business sector
- 51% size downloaded by Public sector and Universities



Environment

- Polar Environment Monitoring
- Climate & Adaptation
- Ocean Health
- Marine Conservation & Biodiversity

Society

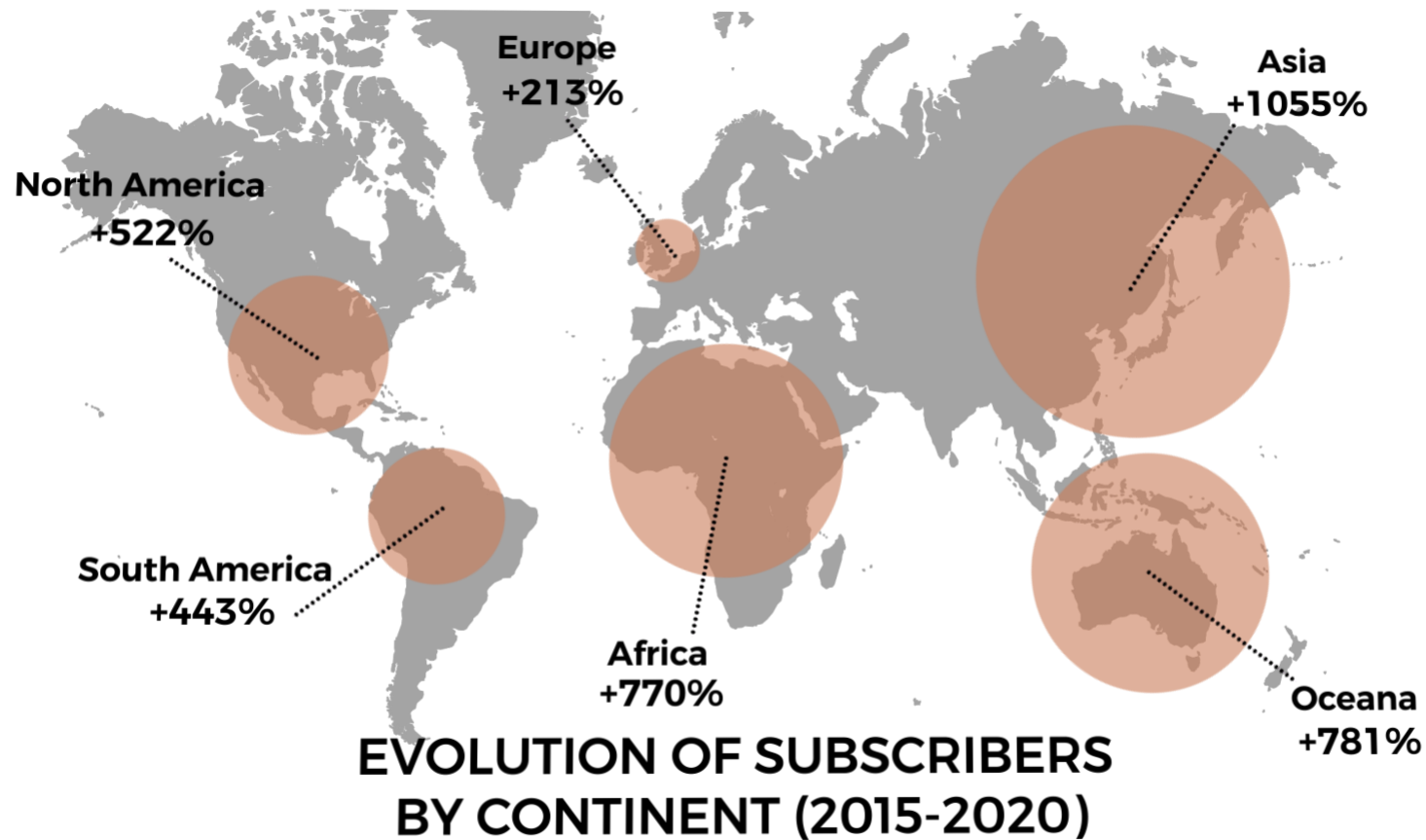
- Science & Innovation
- Policies & Ocean Governance & Mitigation
- Education, Public Health & Recreation
- Extremes, Hazards & Safety

Economy

- Marine Food
- Coastal Services
- Trade & Marine Navigation
- Natural Resources & Energy



GREAT UPTAKE IN EUROPE & WORLDWIDE





Extremes, Hazards & Safety



Offshore marine oil spills:

- Provide ocean forecasts to feed oil spill drift-forecast models to predict the potential oil spread
- better planning for the emergency response
- Backward mode to find the source and identify the responsible



Search and Rescue operations

- Provides ocean current and significant wave height parameters as input for their search and rescue software and met-ocean dashboards.





Trade & Marine Navigation



Ship routing allows maritime shipping companies to reduce fleet navigation risks, save fuel and reduce CO2 emissions.

Ocean models provide ocean current, significant wave height and sea ice parameters for the global oceans and European Seas. These can be used as input conditions for ship routing software.

The Copernicus Marine Service sea ice satellite products also help maritime shipping companies find the safest navigation routes through ice-covered areas.

