Copernicus Marine Environment Monitoring Service

Product portfolio and data access

Copernicus
Europe's eyes on Earth

Space

Copernicus EU
Copernicus EU
Copernicus EU
www.copernicus.eu

The Copernicus Marine Service (CMEMS) has been entrusted to Mercator Ocean by the European Commission

- ✓ MyOcean legacy (2009/2015)
- ✓ Delegation agreement (2014/2021)
- ✓ To implement and operate the Copernicus Marine Service
- ✓ Operational since **May 2015** – evolving service

Marine Monitoring

Marine.copernicus.eu

ACCESS TO DATA & INFORMATION

Free and open access
to worldwide Ocean information
marine.copernicus.eu

- SEARCH & BROWSE

- DISCOVER & VISUALISE

- REGISTER

- DOWNLOAD

- COMPUTE

- JOIN UP

Copernicus Europe's eyes on Earth

European Commission

Marine Monitoring

~150 Products gathered in a unique catalogue

- online catalogue http://marine.copernicus.eu
- common format (Netcdf)
- INSPIRE compliant

Marine Monitoring

15 marine parameters

- SEA SURFACE HEIGHT
- SALINITY
- TEMPERATURE
- VELOCITY
- MIXED LAYER THICKNESS
- SEA ICE
- TURBIDITY
- TRANSPARENCY
- REFLECTANCE
- NUTRIENTS
- PRIMARY PRODUCTION
- OXYGEN
- PLANKTON
- WIND
- WAVE

TIME PERIOD COVERED BY PRODUCTS

Marine Monitoring

REPROCESSING
REANALYSIS (20years in the past)

Real Time and Forecast

Real time and forecast products: A new product update every day, a few hours after sensing or after model simulation

Reanalysis/Reprocessed products: A new product every 1 to 2 years with optimal accuracy and homogeneous time series

GLOBAL OCEAN AND 6 EUROPEAN REGIONAL SEAS

Marine Monitoring

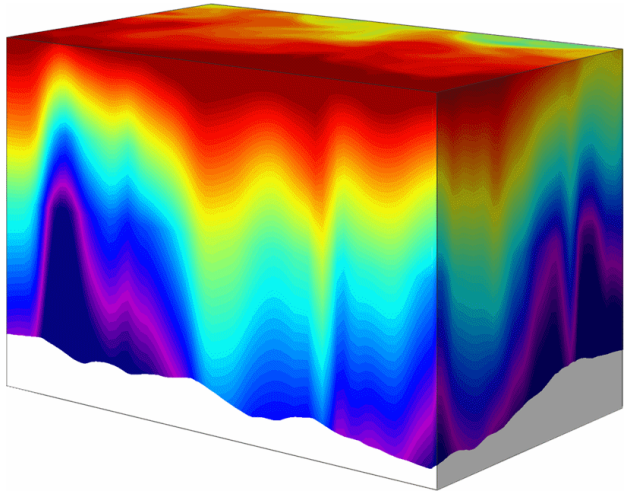
- 1. Global
- 2. Arctic
- 3. Baltic
- 4. NWS
- 5. IBI
- 6. Med Sea
- 7. Black Sea

Marine Monitoring

PORTFOLIO GATHERS DATA FROM 3 SOURCES

SATELLITE OBSERVATION

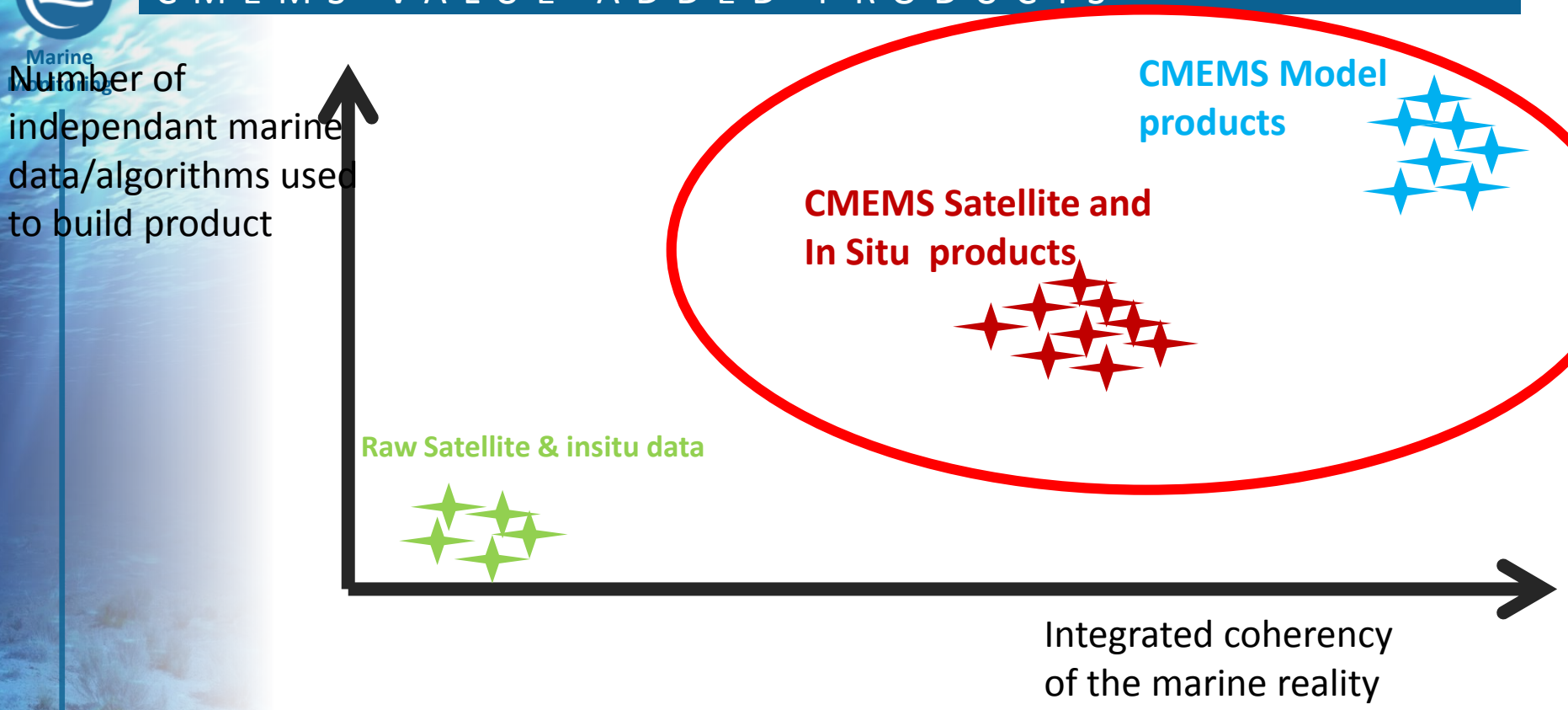
IN SITU OBSERVATION



OCEAN MODEL COMPUTATION

European Commission | Copernicus Europe's eyes on Earth | Implemented by MERCATOR OCEAN

CMEMS VALUE ADDED PRODUCTS



Marine Monitoring

Spatial and temporal characteristics

- ✓ **Insitu Observations**
  - ✓ from surface to 2000 meters depth
  - ✓ Covers long time series (20 years in the past), real time products (today)
  - ✓ 3D non gridded product (available where the measure is done)

- ✓ **Satellite Observations**
  - ✓ At the surface only
  - ✓ Covers long time series (20 years in the past), real time products (today)
  - ✓ 2D surface gridded product

- ✓ **Ocean Models**
  - ✓ from surface to bottom
  - ✓ Covers long time series (20 years in the past), real time products (today) & 10-day forecast
  - ✓ 3D gridded product

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European Commission

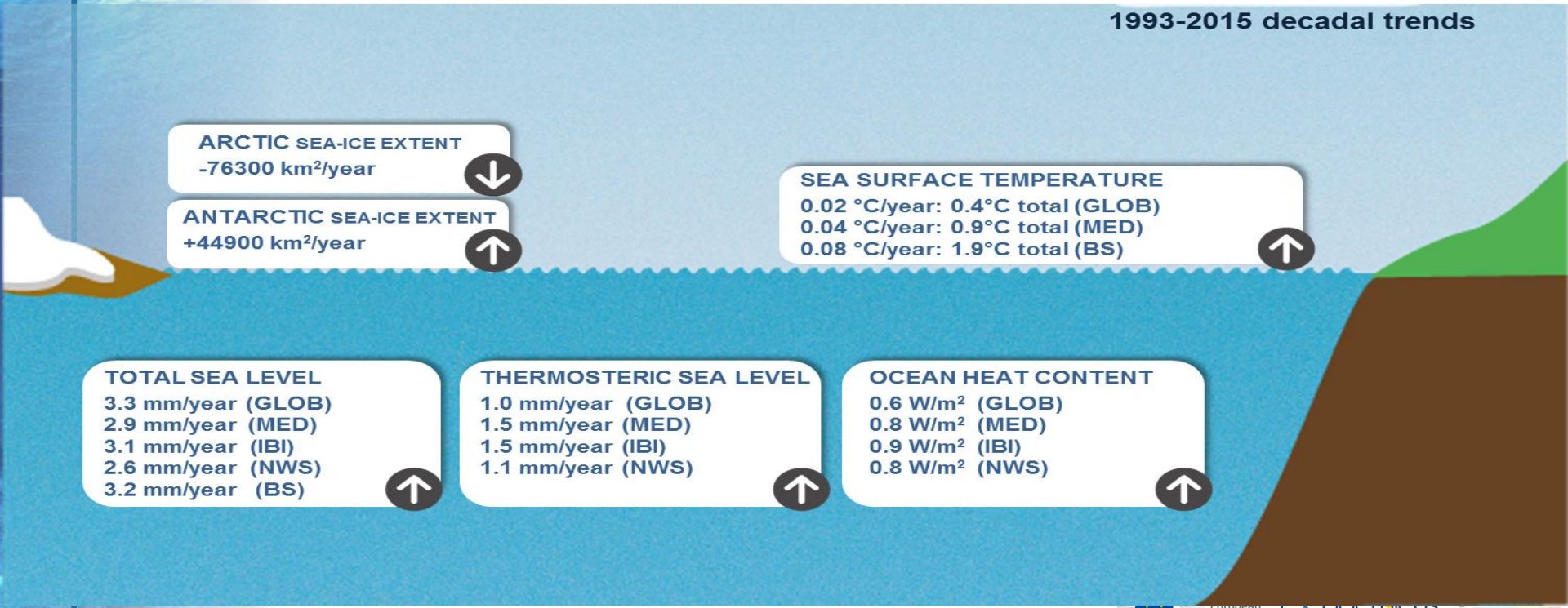
Where to find it?

- Full Ocean State Report here
- Summary of the Ocean State Report here

CMEMS Ocean State Report: Annual unique ref. for ocean state, variability and change monitoring

Marine Monitoring

KEY MESSAGES: Changes over the 1993-2015 period



Marine Monitoring

CMEMS Portfolio gathers:

- ~150 Marine Products
  - Numerical files (Netcdf Format)
  - Geographical domains: Global ocean and the 6 European Seas : Arctic Ocean, North Western European shelves, Ireland Biscay and Iberia shelves, Baltic, Mediterranean and Black Seas
  - From marine **Insitu** and **Satellite Observations** and from **Ocean Models**
  - Marine physical (e.g.: temperature, salinity, ocean currents, waves, sea ice,…) and biogeochemical (e.g.: Chlorophyll, dissolved oxygen, …) parameters

Marine Monitoring

– Tutorials:

- How to discover and search for products (2’52)
- How to download (1’47)
- How to view products (1’15)

- Note:
- In order to download data, you need to be registered.
- In order to view data, you do not need to be registered.

CMEMS supports EU Member States for MSFD

- CMEMS in support to Portugal
- CMEMS in support to Italy
- CMEMS in support to The Netherlands
- ……
- CMEMS in support to France

Marine Monitoring

We want CMEMS to fit MSFD needs:

➔ **Use CMEMS data (model, in situ, satellite) as is**

Direct use of CMEMS regional products (such as Temperature, Chlorophyll, nutrients). **Need your feedback to improve CMEMS products and better suit your needs.**

➔ **Use CMEMS model data as Boundary Conditions/forcing conditions to higher resolution models**

CMEMS products as input data for coastal models: downscalling, or forcing to other kind of models (ecosystem models, sediment transport models, oil-plastic-any pollutant drift model…)

Marine Monitoring

2 possibilities for using CMEMS

http://marine.copernicus.eu/markets/use-cases/

KEY TO GROWTH and JOBS

END MARKETS
(Private, Public)

DOWNSTREAM ACTIVITIES
(Private/public)

COPERNICUS MARINE SERVICE

ASK CMEMS USERS
(value added)

DIRECTLY(free)

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CONTACT US

Marine Monitoring

JOIN THE COPERNICUS MARINE SERVICE COMMUNITY

Web portal
marine.copernicus.eu

Service Desk's email
servicedesk.cmems@mercator-ocean.eu

Collaborative Forum
http://forum.marine.copernicus.eu/

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MercatorOcean

Linkedin CMEMS partnership Meeting place
https://www.linkedin.com/groups/8243515

Tutorials on CMEMS YouTube channel
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