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The Copernicus Marine Environment Monitoring Service

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CMEMS : The Copernicus Marine Environment Monitoring Service



SATELLITES (S1, S3, Jason-CS)



IN SITU



SERVICES



MARINE

ATMOSPHERE

LAND

SECURITY

EMERGENCY

CLIMATE



CMEMS in the Copernicus Regulation

Article 4 “*Copernicus Service Component*”:

“The Copernicus service component shall consist of the following services:

[...]

the **marine environment monitoring service**, which shall provide information on the state and dynamics of physical ocean and marine ecosystems for the global ocean and the European regional marine areas, in support of marine safety, contribution to monitoring of waste flows, monitoring of marine environmental, coastal and polar regions, and of marine resources as well as meteorological forecasting and climate monitoring;

[...]

à A DEFINITION OF THE MARINE SERVICE IN THE NEW REGULATION FULLY CONSISTENT WITH THE CURRENT MYOCEAN DEMONSTRATION EXPERIENCE



Implementation milestones

Sep 2014

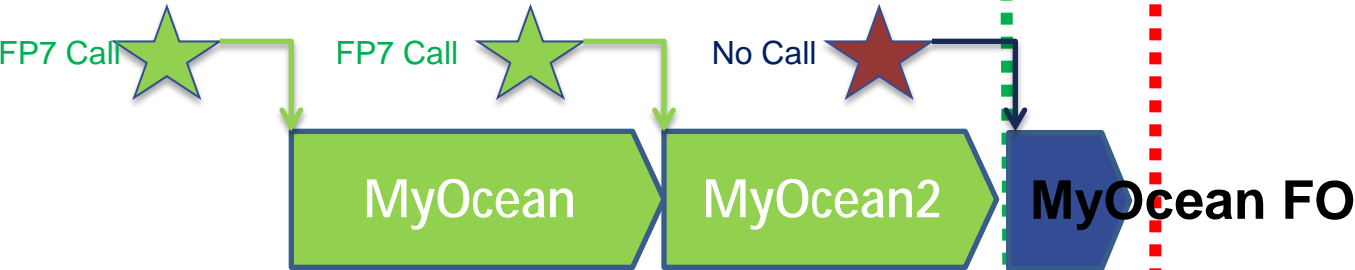
May 2015

2007 - 2013

2014 - 2020

RESEARCH FP7

Horizon2020



OPERATIONS

CMEMS

Request for Expression of Interest



Delegation to Mercator Ocean (entrusted entity)

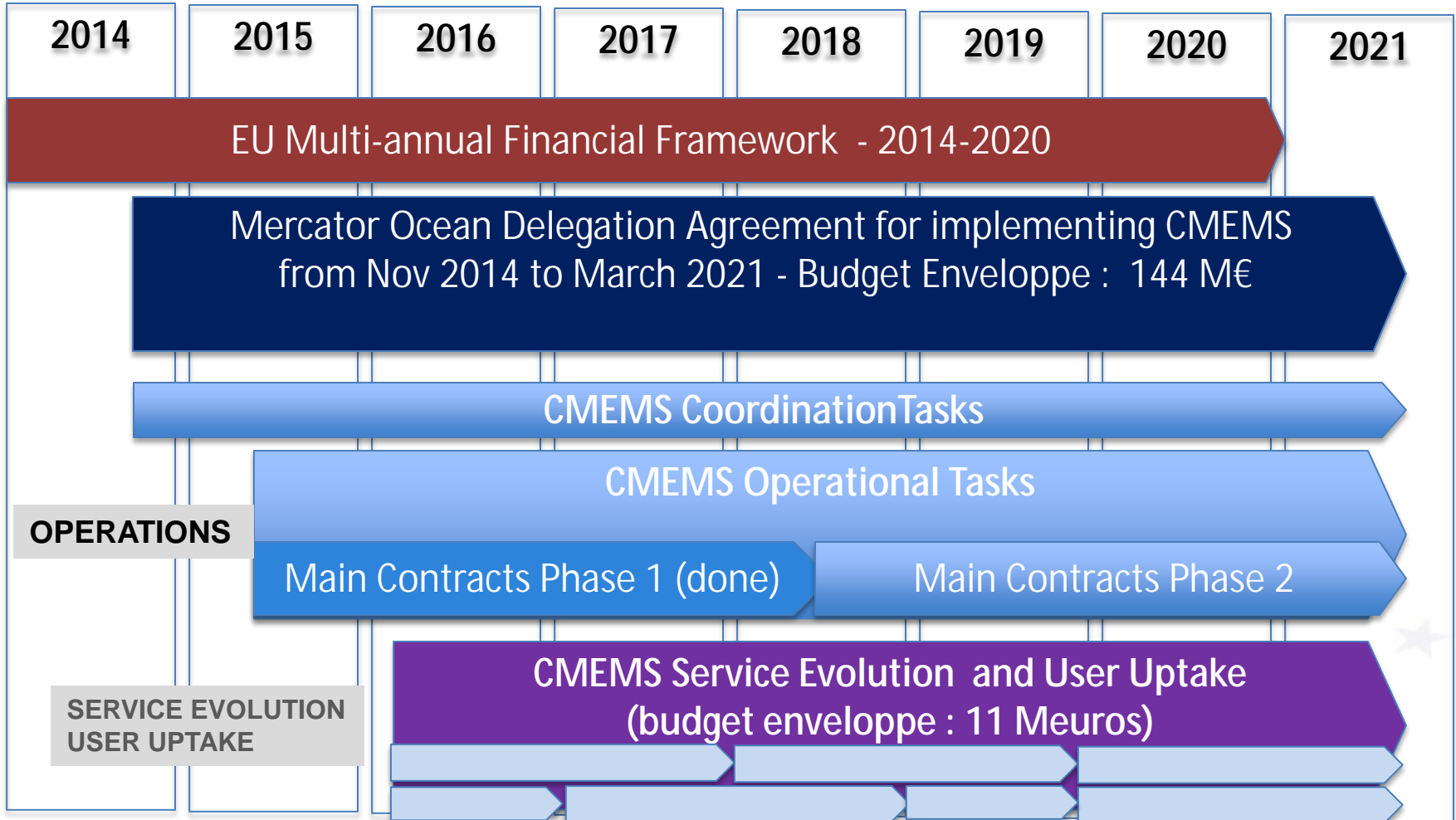


Start of CMEMS activities

- **November 2014: Mercator Ocean entrusted** by EU to implement the « Copernicus Marine Environment Monitoring Service » (CMEMS).
 - Delegation Agreement signed in Nov 2014 following a call for Expression of Interest
- **January 2015: Mercator Ocean opens tenders** to select contractors for the 9 critical components of the service
 - 4 Thematic Assembly Centres ; 5 Monitoring and Forecasting Centres
 - Contracts awarded mid-April
- **May 2015: Mercator Ocean starts CMEMS** operations, and stops MyOcean operations
 - Seamless transition for users ; MyOcean v5 = CMEMS v1
- **End of 2015: first tenders for Service Evolution and User Uptake**



CMEMS activities and planning





Evolution of the Copernicus Marine Environment Monitoring Service (CMEMS)

Key drivers

- Requirements from intermediate or end users in the four main areas of benefit (maritime safety, marine resources, coastal and marine environment, weather, seasonal forecast and climate), accounting for both existing and new needs likely to emerge in the future (e.g. environmental reporting and assessment /MSFD, renewable energies, aquaculture, climate and impacts).
- Scientific and technological advances in observing systems, modelling and data assimilation, data processing and data dissemination technologies.
- High level of innovation required to maintain state-of-the-art systems.

Some strategic and open issues for the long term evolution of the CMEMS



In-situ infrastructure : a major issue. Towards an optimized and integrated European Ocean Observing System (EOOS). Essential role of Argo and its new phase (Euro-Argo ERIC).

Satellite infrastructure: long term evolution of Copernicus Satellite Component (post 2025)

Coastal zone : how to achieve a seamless transition from the open ocean down to the coastal zone (European service and downstream national coastal services)

Environmental reporting and MSFD (e.g. operational oceanography products and tools fully integrated in the MSFD national monitoring programmes). Biogeochemical modelling and data assimilation

Ocean/Waves/Atmosphere coupling: requirements for improved ocean analyses and forecasts

Very high resolution / submesoscale – new satellite observations (SWOT)

Climate and long term reanalyses.