

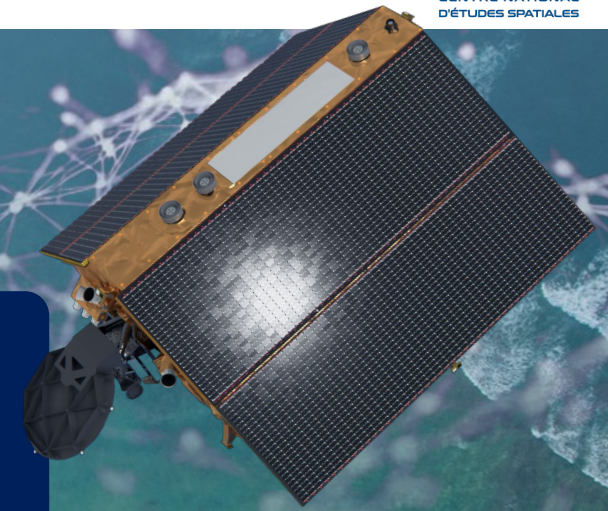
Presentation

The EUMETSAT Altimetry Programme and its associated missions

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On behalf of the EUMETSAT Altimetry Programme team

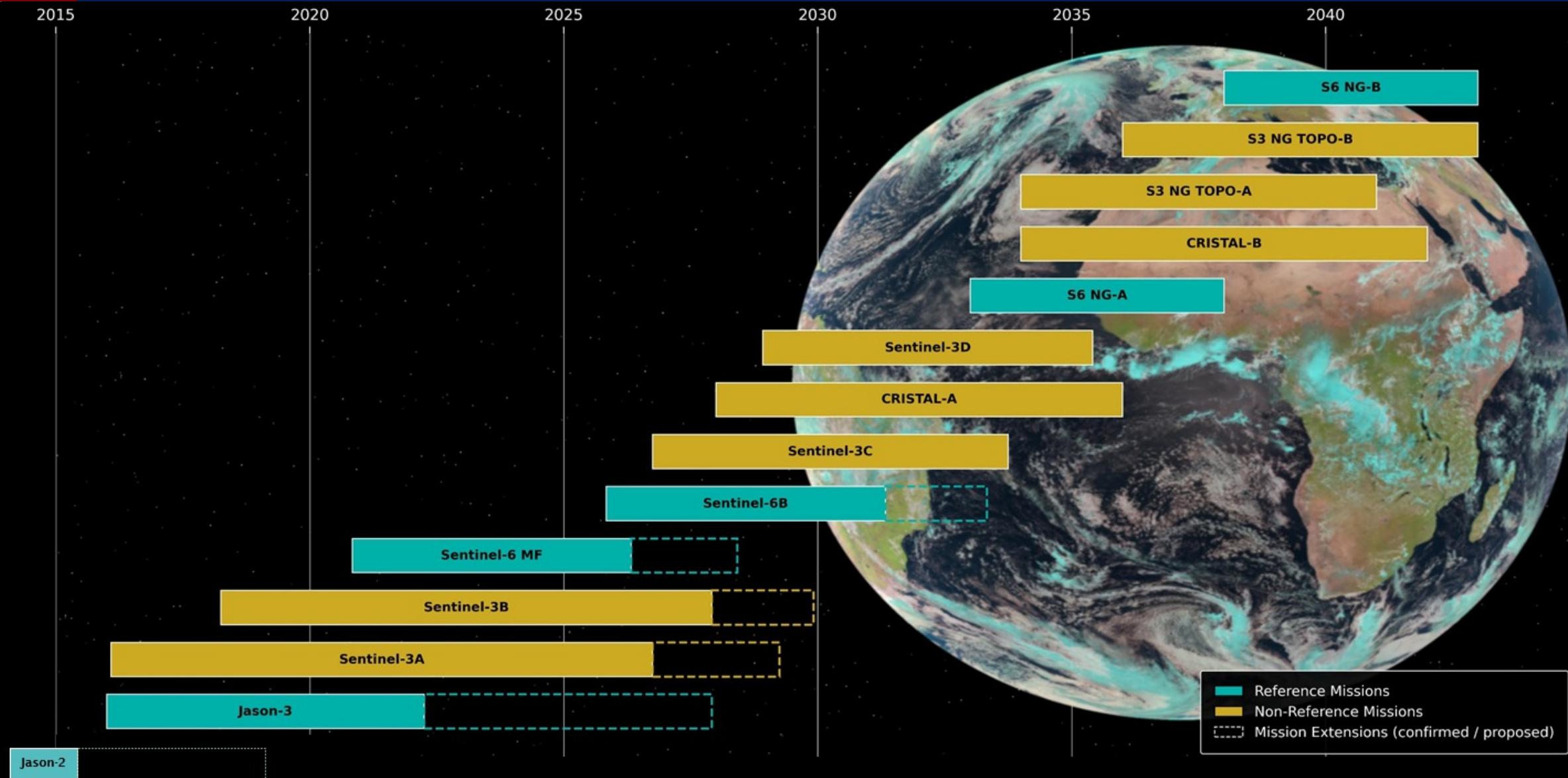


IN PARTNERSHIP WITH



JPL





- Though back in 1999 there were serious thoughts about how to make ocean surface mission operational¹
- EUMETSAT joined Altimetry with a contribution to Jason-2 in June 2003
- Has been actively involved since then, in collaboration with CNES, our international US partners, and joined later by the European Commission and then by ESA:
 - operations of Jason-2 with CNES, NOAA and NASA,
 - operations of Jason-3 with CNES, NOAA, NASA and EC,
 - development and operations of Sentinel-3 and Jason-CS/Sentinel-6 with ESA, NASA, NOAA, EC and CNES
- Supported the transition from R&D and demonstration missions to sustainable and permanent operational systems
- EUMETSAT objective is to ensure the continuity of **operational** and **affordable** Altimetry services

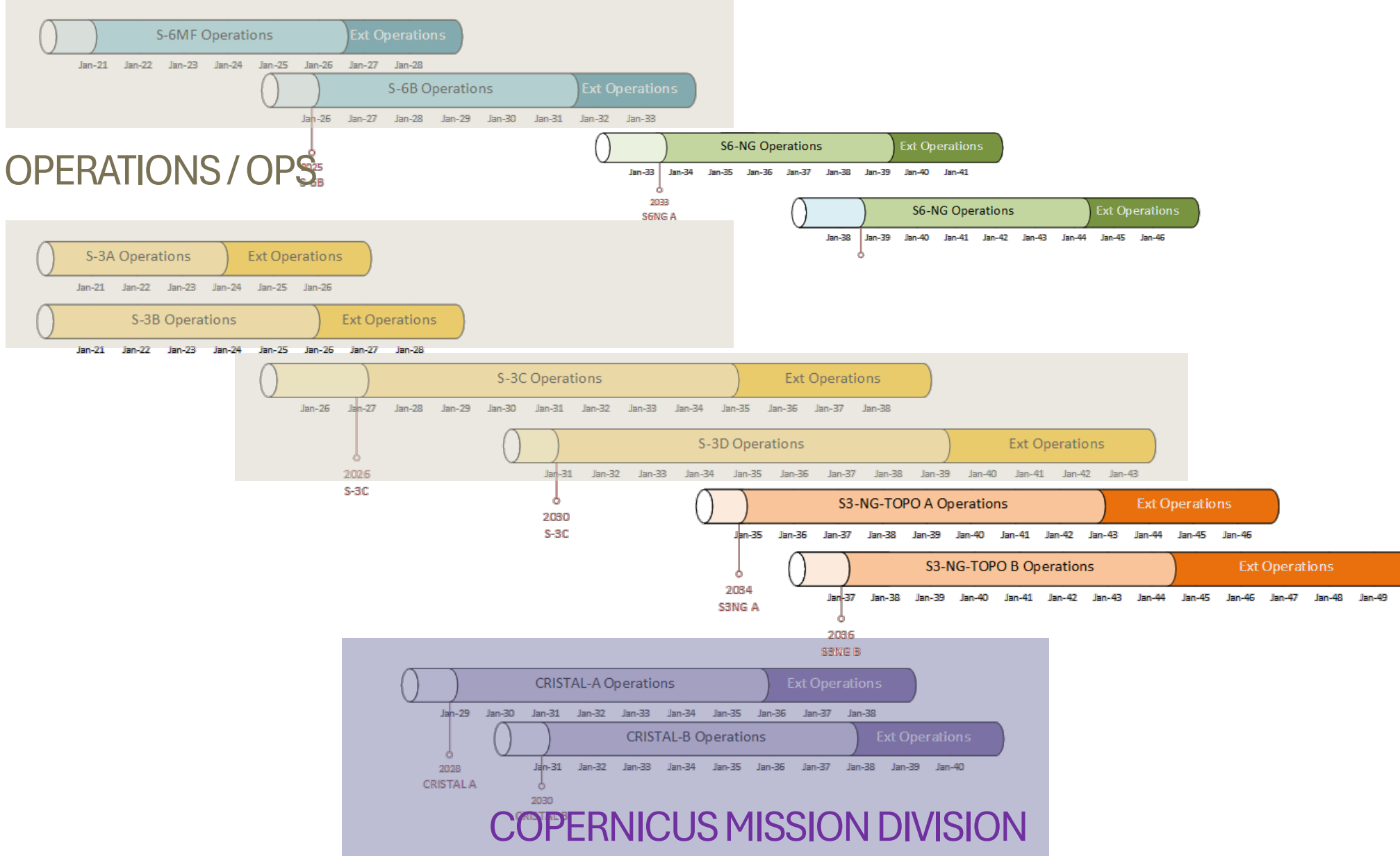
¹Ratier, 1999, *Space-Based Observations in the Global Ocean Observing System: the Operational Transition Issue*

- With the discontinuation of the Sentinel-6C mission, there is a risk of a data gap in the High Precision Altimetry reference series
- The European Commission, ESA and EUMETSAT concluded that accelerating Sentinel-6 Next Generation is the most effective way to minimize this risk
- Two consecutive S-6NG satellites will ensure long term operational continuity beyond 2040

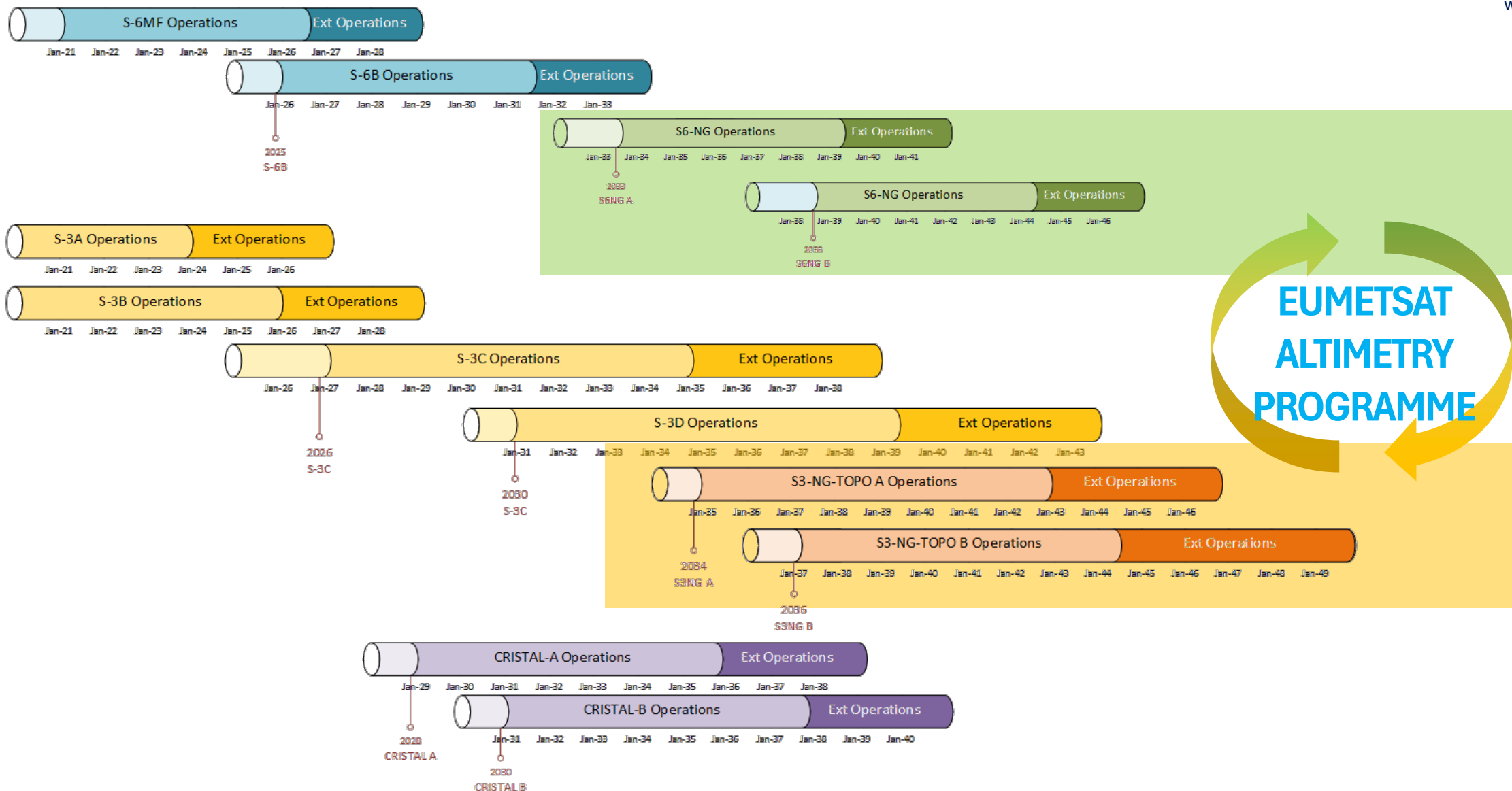
4 Overview of Altimetry at EUMETSAT

www.eumetsat.int

OPERATIONS / OPS



COPERNICUS MISSION DIVISION



Continuity of **Sentinel-6** mission

Two consecutive
Sentinel-6 Next Generation
satellites in **low-inclination reference orbit**

Continuation of ~40 year record of sea level from
reference orbit and ground track

Maximize re-use of Sentinel-6 and Sentinel-3 operational ground system elements, end-to-end operational
systems, taking into account overall evolution of ground segment services at EUMETSAT

Development of the multi-mission
EUMETSAT Altimetry System
for S-3NG Topo ocean altimetry and S-6NG altimetry

S-6 NG **EURD**

Continuity of **Sentinel-3** Topo mission

A constellation of two
Sentinel-3 Next Generation Topography
satellites in **high-inclination orbit**

Ocean altimeter observations with < 50 km
resolution every < 5 days

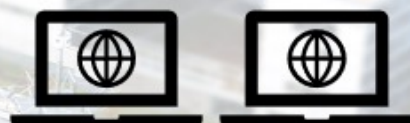
S-3 NG Topo **EURD**

EUMETSAT

Altimetry System



Mission Control and
Operations



S-3NG Topo Ocean and S-6NG
Payload Data Processing

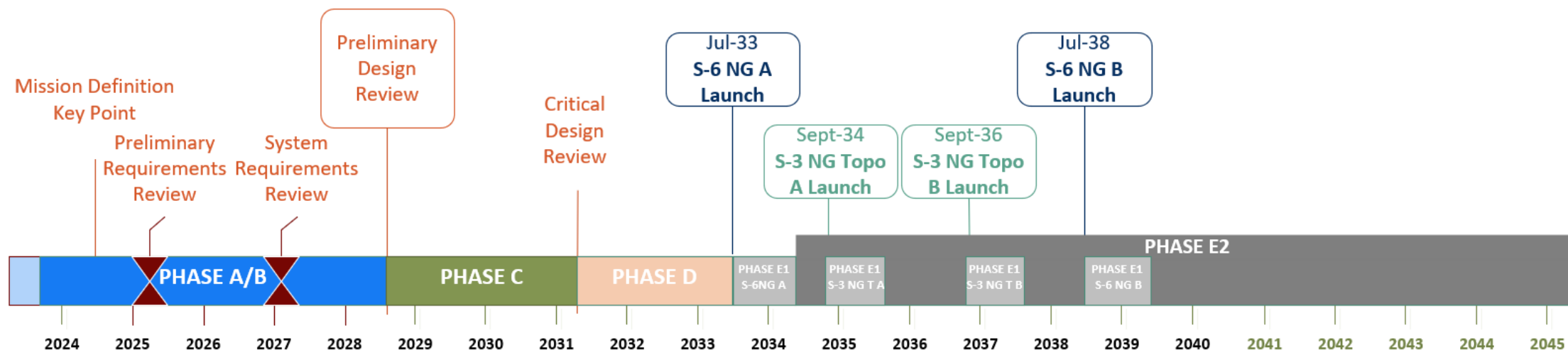
Data Archiving
and Distribution



EUMETCast



Overall schedule logic driven by **common development approach of the EUMETSAT Altimetry System**, supporting the S-6 NG and S-3 NG Topo missions, and enabled by the close readiness imposed by the first two launches within a year

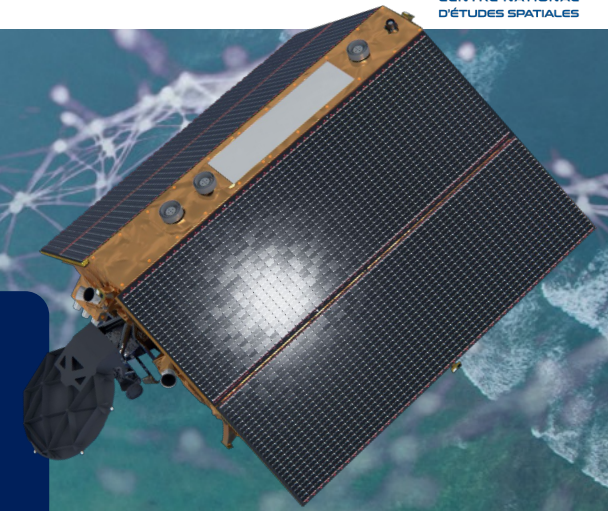


- ✓ Start of the Altimetry Programme and its Phase C expected in 2028
- ✓ Dates notional, to be refined in alignment with ESA S-6NG and S3-NG-T satellites schedule, and any evolution of the EUMETSAT Programme approval
- ✓ System development strategy going through a significant update: development of the EUMETSAT Altimetry System that will initially support the S-6 NG and S-3 NG Topo missions

- Altimetry has a decades long history and continues to expand into new domains and applications, driven by advances in technology, data processing and scientific capabilities
- Altimetry has become an essential component of operational data assimilation systems, supporting meteorological, oceanographic, and climate models
- Altimetry plays a critical role in monitoring key indicators of climate change, particularly sea level rise through both melting contributions and the increase in ocean heat content
- The success of satellite altimetry is a roadmap marked by strong international cooperation
- EUMETSAT has a very strong team of altimeter experts, excellent orbit specialists, and solid experience in the preparation, commissioning and operation of complex altimeter missions as well as the operation, maintenance and continuous evolution of their ground segments
- EUMETSAT is a leading provider of marine altimeter products, ensuring high availability and reliability for users
- SAR-based observations of ocean wave spectra have demonstrated its value at global-scale
- The EUMETSAT Altimetry Programme will be presented to the EUMETSAT Council in June 2026
- The objective is to secure, in cooperation with the EC as part of the Copernicus programme and partners, reliable operational and affordable services for Sentinel 6 Next Generation and Sentinel-3 Next Generation Topo beyond 2040

Thank you!

Questions are welcome.





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