

Copernicus Sentinel-4 and Sentinel-5 - update from EUMETSAT

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Sentinel-4 and Sentinel-5 teams

AC-VC-19 / ACSG 2023, Brussels



Sentinel-4 and Sentinel-5 on MTG and EPS-SG

ESA and EUM roles

EUMETSAT activities

Ground segment

Operations preparation

User preparation

Cal/Val

Objectives

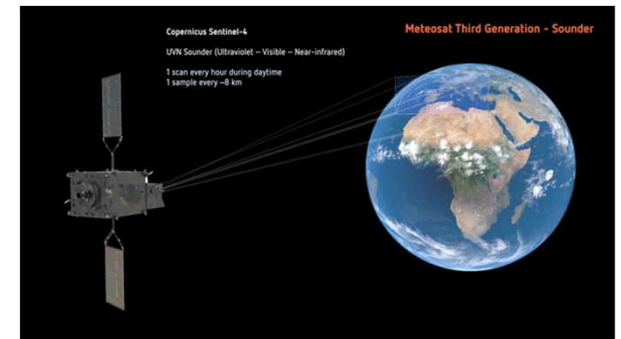
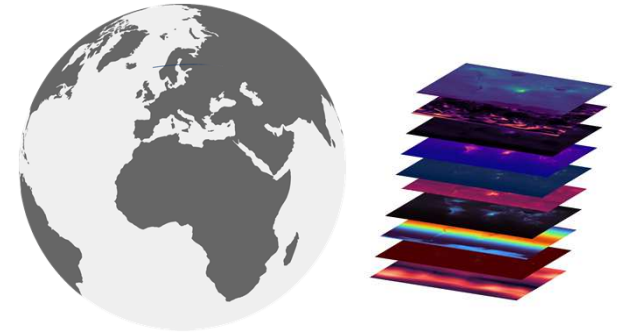
Announcement of Opportunity



Copernicus Sentinel-4 and Sentinel-5

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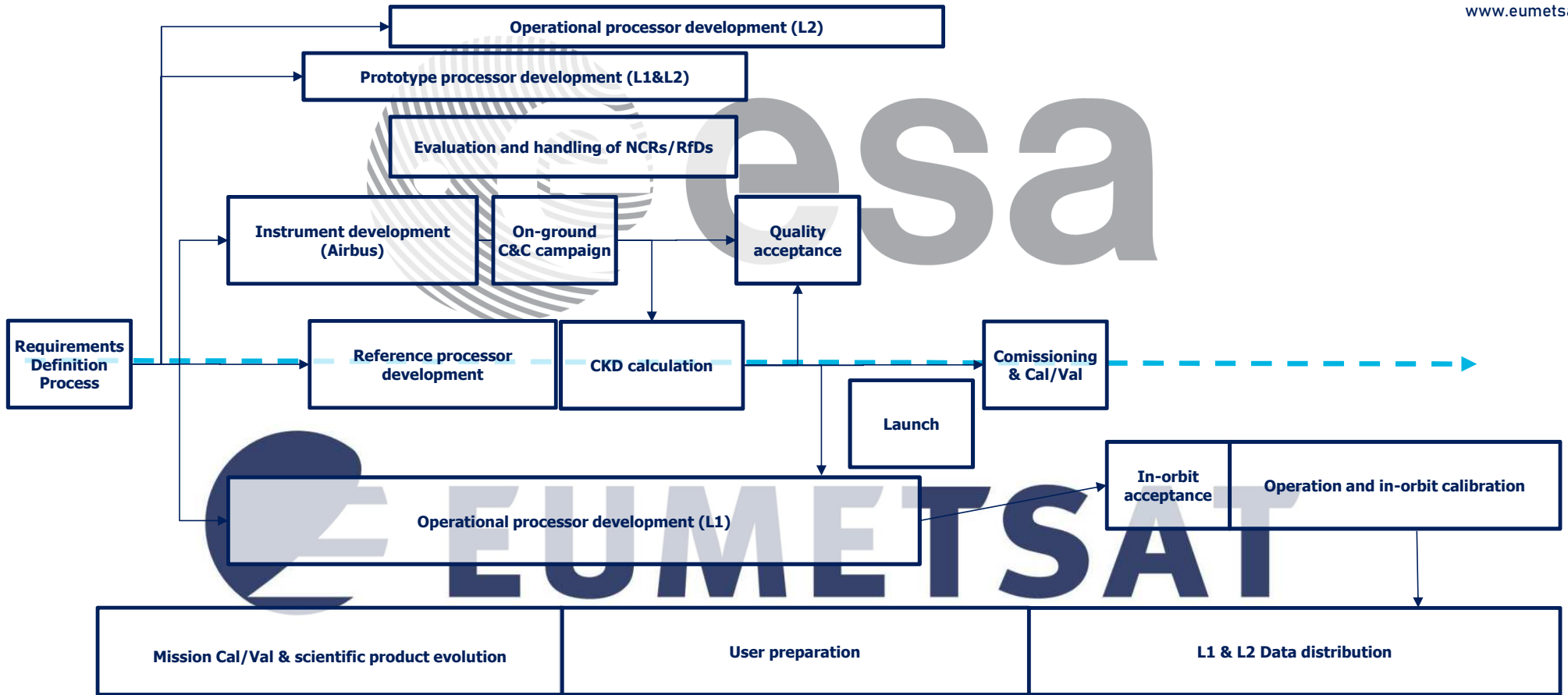
- MTG and EPS-SG systems provide a synergistic suite of instruments
 - Sentinel-4, IRS (IR spectra), FCI (clouds; high spatiotemporal sampling)
 - Sentinel-5, IASI-NG (IR spectra), MetImage (clouds, high spatial sampling), 3MI (aerosols)
- Anticipated launch dates for both MTG-S1 and EPS-SG-A1, as of today, are in the first half of 2025.



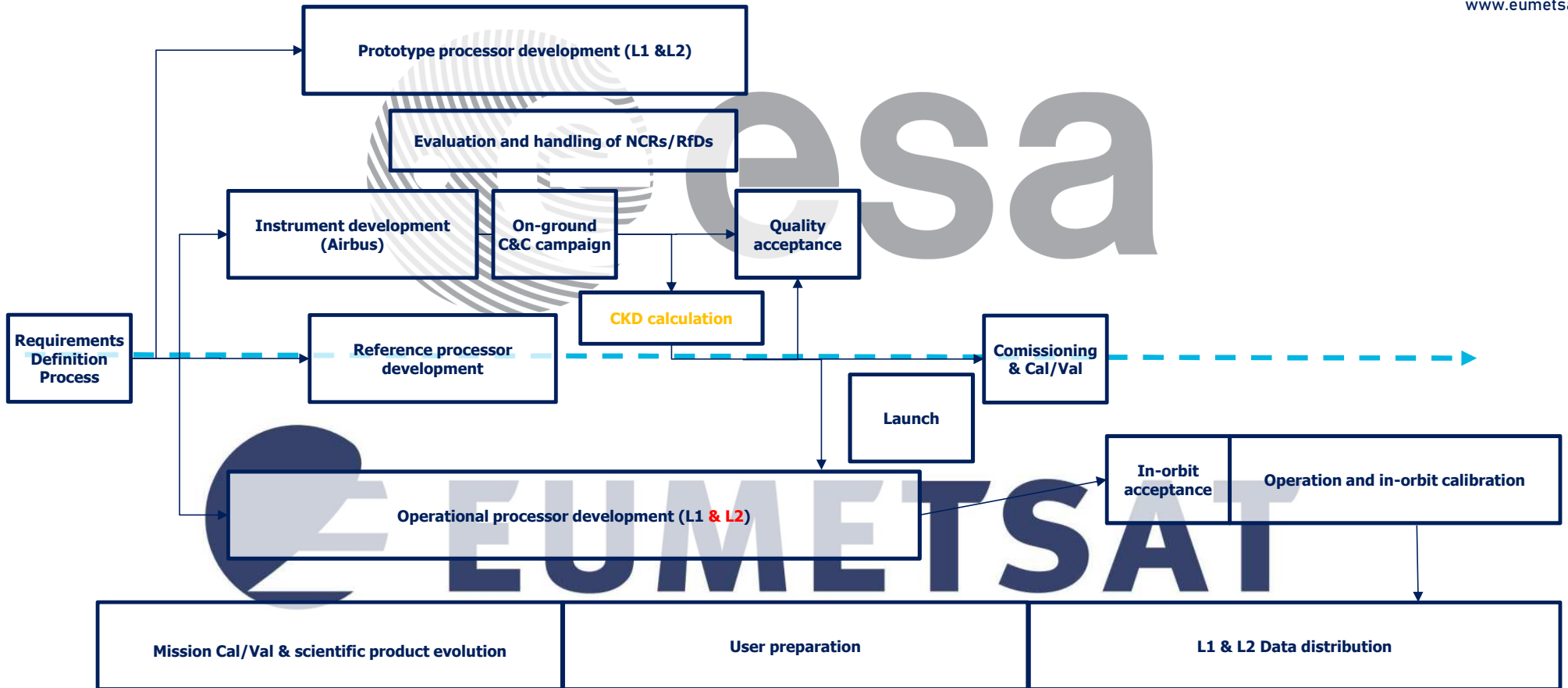
PROGRAMME OF THE EUROPEAN UNION



Sentinel 4 responsibilities - Detail



Sentinel 5 responsibilities - Detail

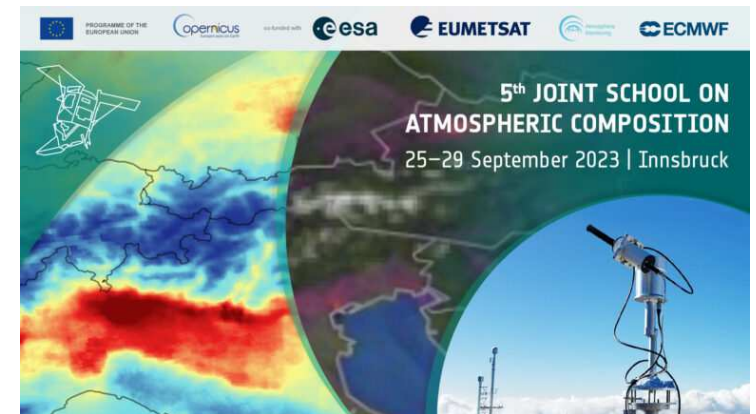




EUMETSAT activities

The main focal points are on

1. following instrument calibration campaigns, conducted by ESA/industry, and instrument acceptance processes.
2. ensuring the readiness of the data processing systems through
 - Implementation and integration of reference processor solutions for early mission data processing and support of Cal/Val activities.
 - Development, integration & verification of the operational processors in the ground segments for routine operations.
3. Preparation of Cal/Val activities
 - Development and procurement of tools for in-house Cal/Val
 - Setting up of external support services
 - Preparation of Announcement of Opportunity for Support of Cal/Val
4. User preparation
 - Coordination WG with CAMS
 - Webinars, workshops & schools in partnership with ESA & ECMWF





Sentinel-4 & Sentinel-5 Cal/Val – a joint effort

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Objectives

- A. Assess and establish initial post-launch data quality of mission products
- B. Support consolidation of processors by identifying and fixing bugs in algorithms and processor implementations, by providing a basis for the fine-tuning of algorithm settings, and by identifying and handling potential unexpected post-launch instrument features
- C. Verify that mission products meet performance requirements and can be released to the users
- D. Monitor data quality on long-term operational basis. Support maintenance and evolution of processors throughout mission lifetime

Announcement of Opportunity to trigger & coordinate nationally funded Cal/Val activities

- Aiming at Objectives A), B), C)
- Complementing planned commissioning phase activities verifying PFM instruments, L1b and L2
- Complementing long-term Cal/Val activities by EUMETSAT aiming at Objective D)



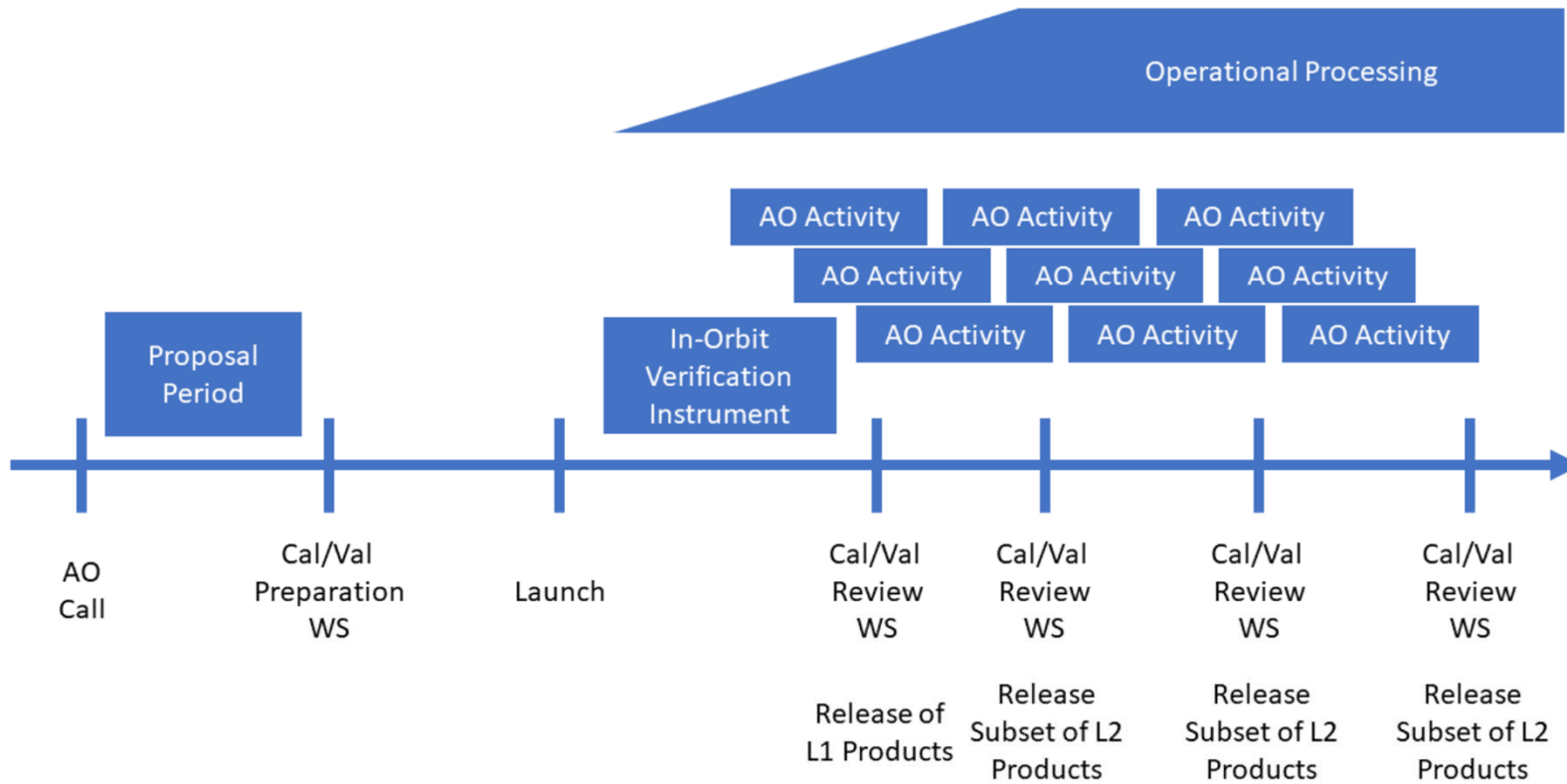
Announcement of Opportunity Call

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- Joint Call by ESA and EUMETSAT, ~1 year before launch of first PFM (S4 or S5) → first half of 2024
- Builds on
 - CEOS AC-VC & WGCV Whitepaper “Geostationary Satellite Constellation for Observing Global Air Quality: Geophysical Validation Needs” Oct 2019
 - Parent doc = Sentinel-4 and Sentinel-5 Cal/Val Plan, jointly prepared by ESA and EUMETSAT, v2 (under prep)
- Combined Call for S4 and S5, split only in case launches drift >1 year apart
- Joint scientific committee for gap analysis and coordination (to balance proposed activities with needs).
- Organisation of a Cal/Val prep workshop, ~1/2 year prior to the first launch
- Series of Cal/Val review workshops starting during commissioning



AO activities





Thank you!
Questions are welcome.