EUMETSAT

EUMETSAT perspective

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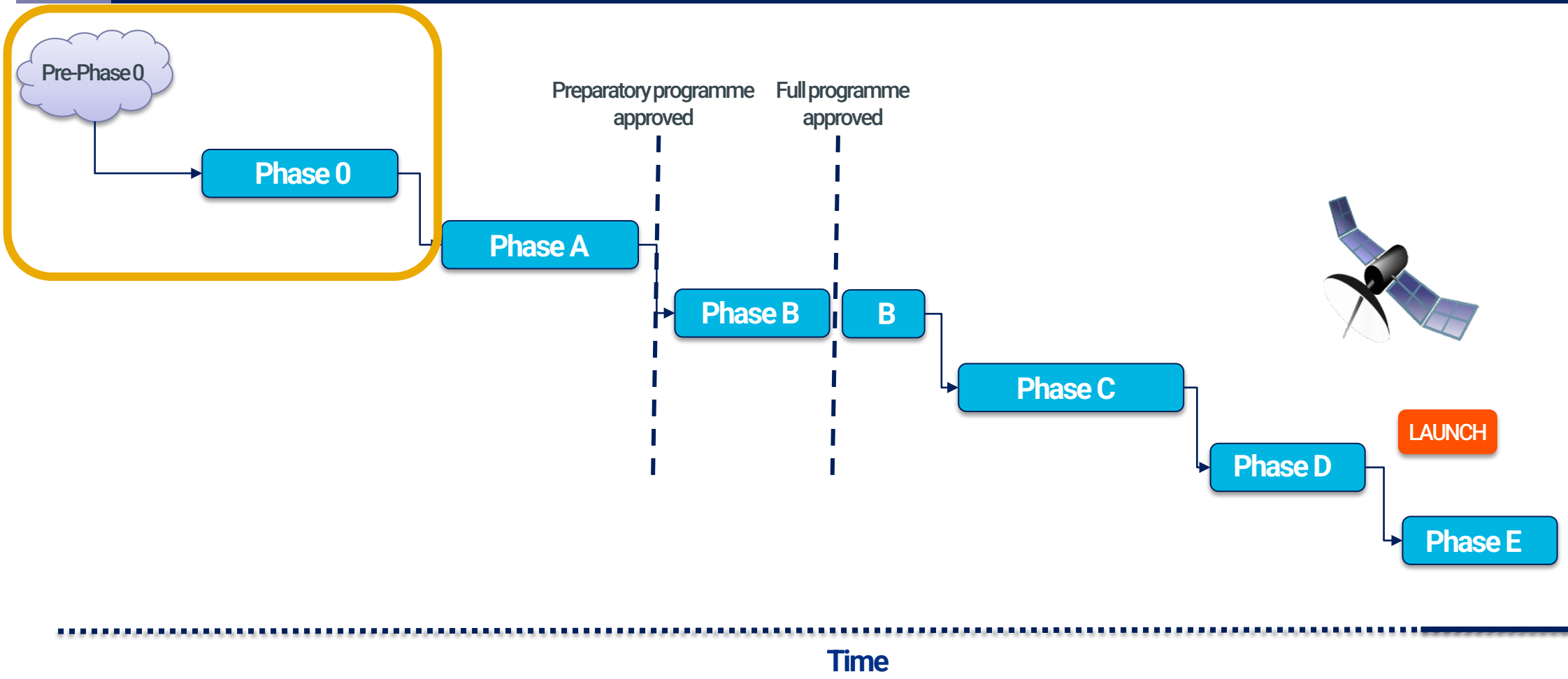
Phase 0 to E in EUMETSAT



User requirement for mandatory MET programmes

- **A well-established process, focused on the needs of EUMETSAT Member States, technologically agnostic**

For Phase 0

- **Identification of Experts/Topics:** Specialized expert groups are formed, focusing on specific subjects like climate and atmospheric chemistry.
- **Position Papers:** documents are prepared outlining the needs of end users for the next 15-20 years, ensuring the approach is not dependent on a particular architectural solution.
- **Workshops - Conferences:** engagement phase with the user community via workshops and conferences to discuss concepts, R&D, and requirements.
- **From Requirements to Candidate Missions:** In collaboration with remote sensing experts, potential observing techniques are identified to meet user needs, and instruments are defined as "candidate missions.

Phase A – Feasibility

- Phase 0 ends with the Mission Definition Review (MDR), prepared by EUMETSAT in cooperation with ESA

- The MDR contains the list of candidate missions, or a list of the agreed upon instruments, and requirements for the space platform and the ground infrastructure which now have to be evaluated for feasibility and potential benefits

- This kicks off the Phase A, where EUMETSAT and ESA investigate these questions, often by contracting out to 3rd-parties (e.g. Universities, Industry, etc.)

Current tentative plans for M4G and EPS-TG

M4G

Dev. Phases EUM 4.7 EVO	Start [year]
Continuous User's Req	2026
Phase 0/A	2028
Phase B	2032
Phase C/D	2035

EPS-TG

Dev. Phases EUM 4.7 EVO	Start [year]
Phase 0/A	2032
Phase B	2036
Phase C/D	2039

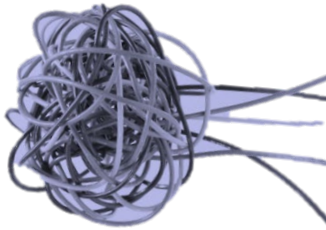
These tentative dates refer to the EUMETSAT process

The schedule for EPS-TG will shift further to the right – expected by 2 years at least

A FAST CHANGING LANDSCAPE

TOMORROW

At the start of the last cycle (MTG and EPS-SG) in Europe, the assumption was that forecasting, remote sensing and information technologies would continue growing at a mostly linear rate. While this assumption proved to be a keen insight, today's landscape is evolving at a rate that can be described as closer to exponential, making the challenge of predicting the state of technology into the 2040s even more difficult.

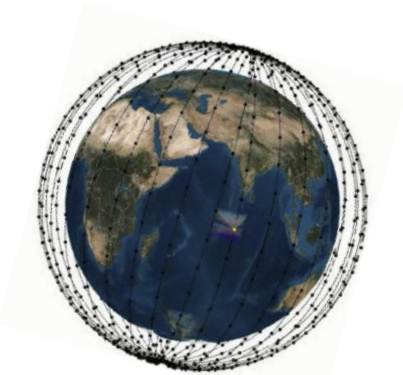


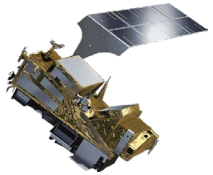
TODAY

We are moving towards a seamless Earth System prediction (from minutes to seasons) and are encompassing new Environmental services (i.e. hydrology, water quality, forest fires). The user's portfolio is becoming more and more complex. Additionally the AIML revolution has the potential to change the operational NWP landscape.

20-15 YEARS AGO

For MTG and EPS-SG development, European Met Services, ECMWF, ESA, NOAA were engaged to set the req's and priorities on Nowcasting, global and regional NWP, chemistry





WORKING ON A FORESIGHT MECHANISM - BENEFITS

- A mechanism that is proposed to EUMETSAT MS (not agreed yet) to better prepare for Phase 0 not expected to start before 2028 at the earliest

- Maintaining foresight capabilities is crucial for identifying trends and rapid changes impacting users and their requirements, such as using AI/ML in prediction tools and developing new applications like geo-engineering.

- This proactive approach helps EUMETSAT understand long-term user needs for future satellite observations.

- Keeping these capabilities will strengthen EUMETSAT's international influence and allow to collaborate effectively with partner agencies and the World Meteorological Organization (WMO) to address observation needs and provide benefits to its member states.

FINAL REMARKS

- Important and fruitful to have independent approaches, science driven and user driven in the two organisations

- EUMETSAT is and remains focused on the need of its user community, needing observations supporting their Earth System model, concentrating on key value chains like climate, weather, water and air quality that are necessary to provide the environmental services of NMHS in Member States.

- The future Phases 0-A will provide a platform to collaborate to prepare together the best future European operational MET programmes

Thank you!

Questions are welcome.