

ESA Cost Engineering in the Future Engineering Division

Michel van Pelt / Nicoletta Wagner

25/08/2026

ESA UNCLASSIFIED – For ESA Official Use Only



→ THE EUROPEAN SPACE AGENCY

1 Long-standing Cooperating State

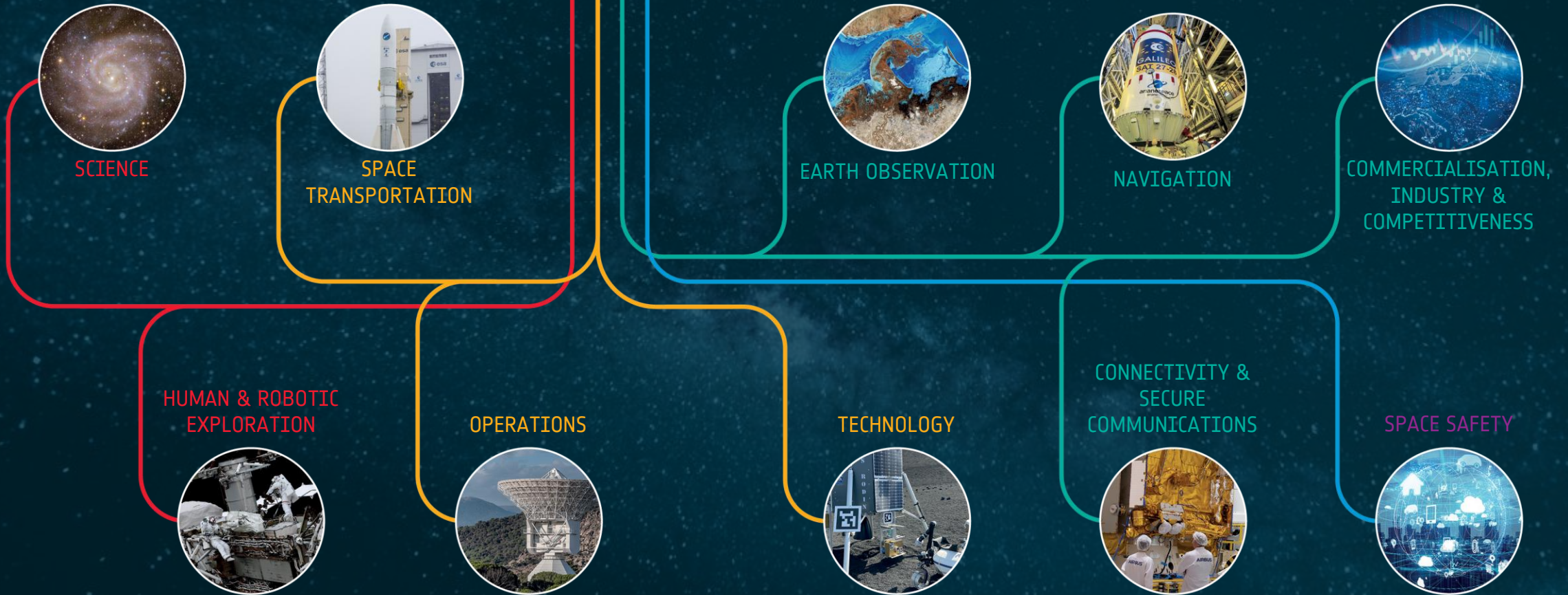
4 Associate Members



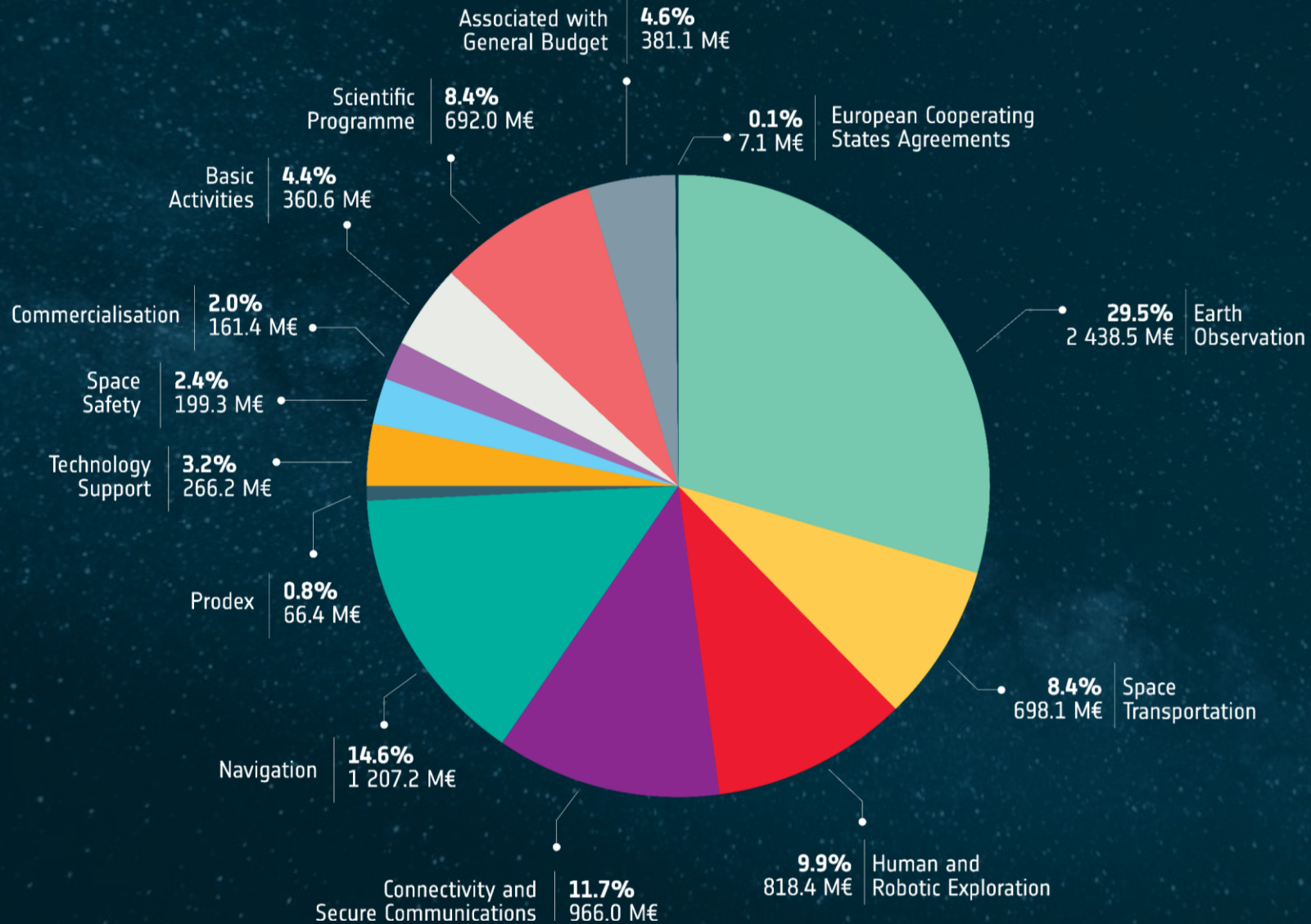
23 Member States

INSIDE ESA

Four pillars. One ESA.

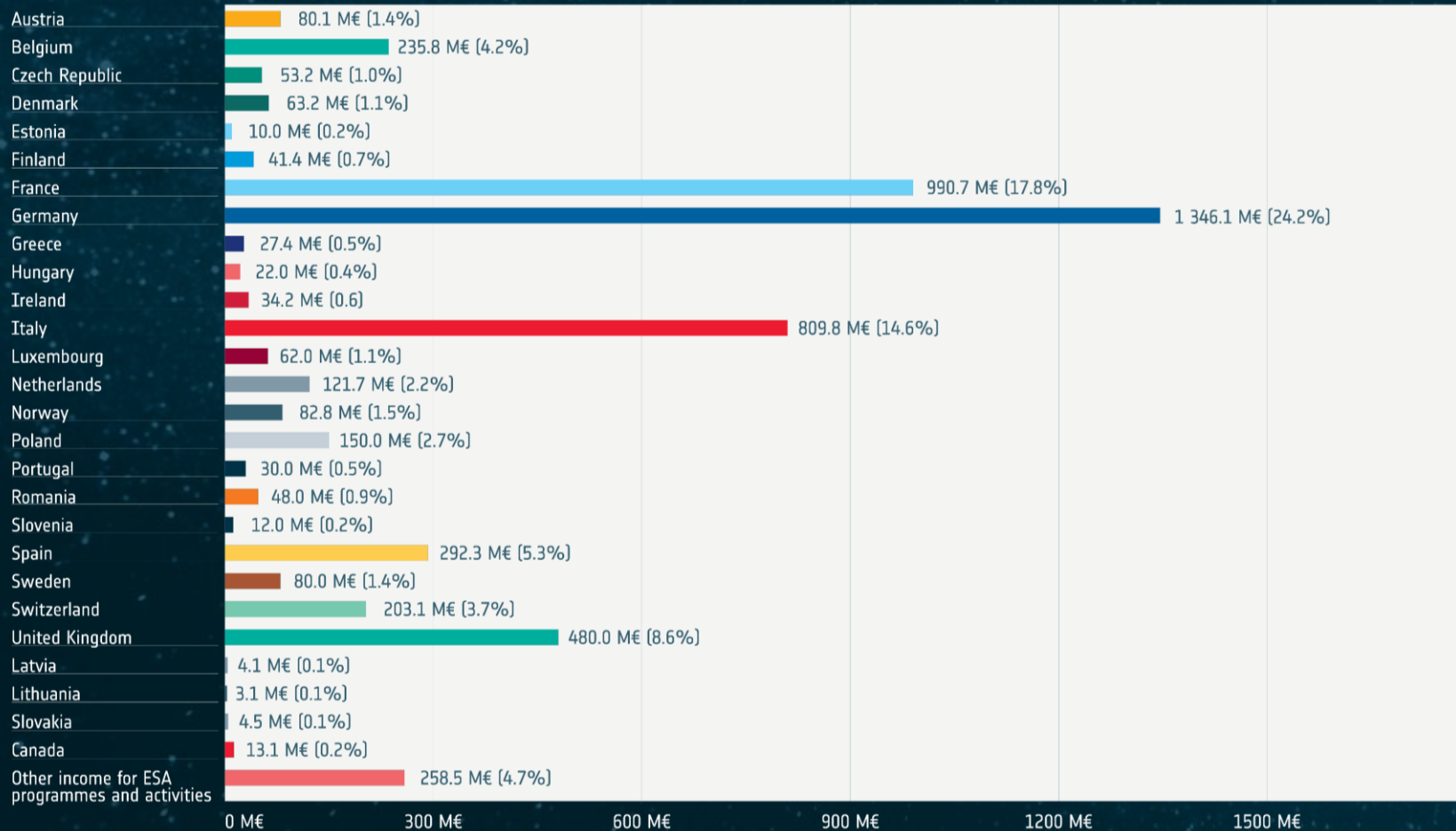


ADOPTED BUDGET BY DOMAIN FOR 2026: 8.26 B€



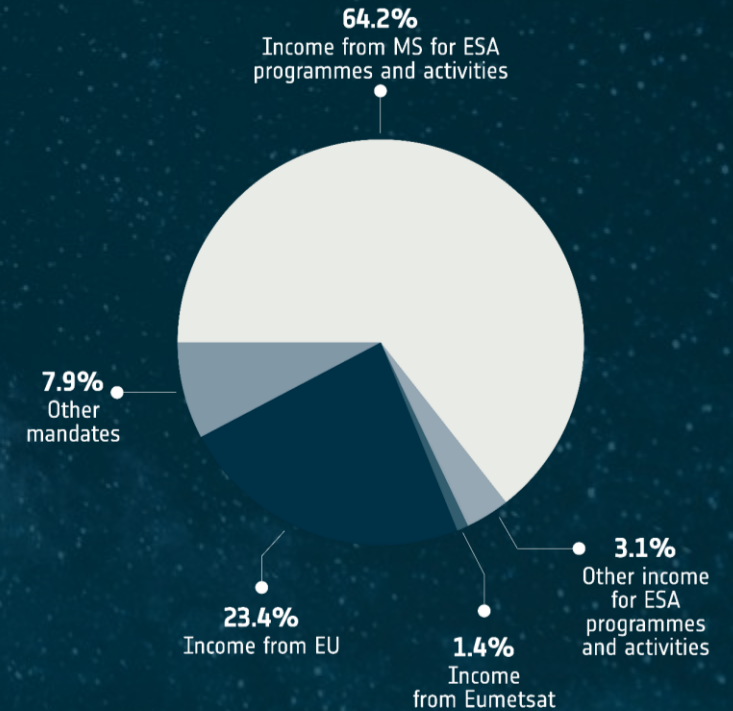
Adopted budget 2026 (by funding source)

ESA PROGRAMMES AND ACTIVITIES: 5.56 B€

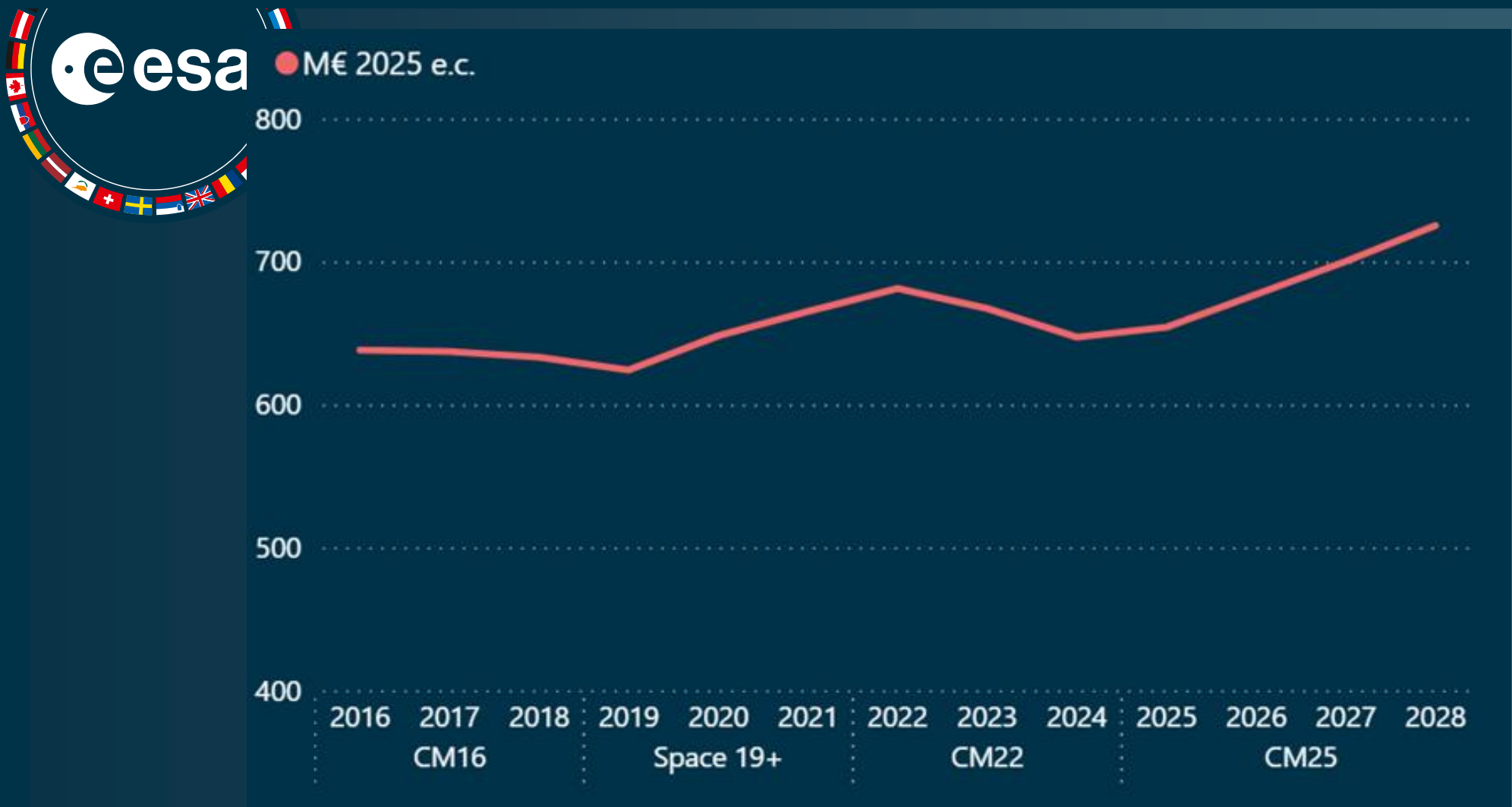


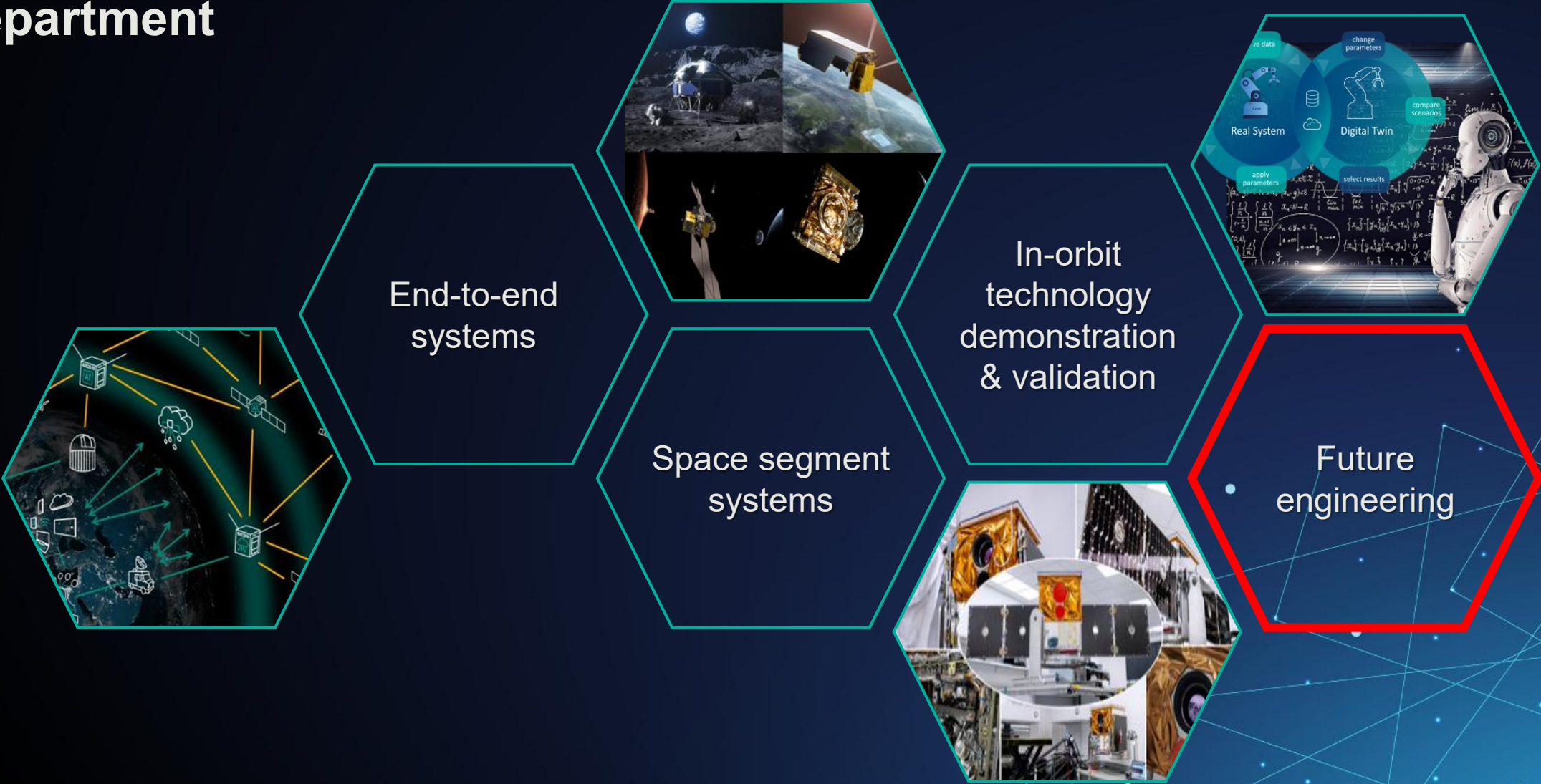
ADOPTED BUDGET 2026: 8.26 B€ TOTAL

2026 BUDGET BY FUNDING SOURCE



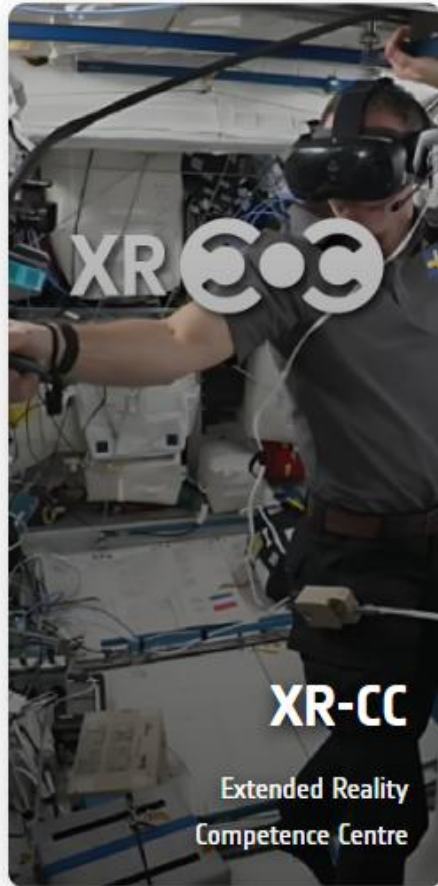
EUROPE ENSURES ITS SCIENTIFIC LEADERSHIP





Future Engineering Centre of competences

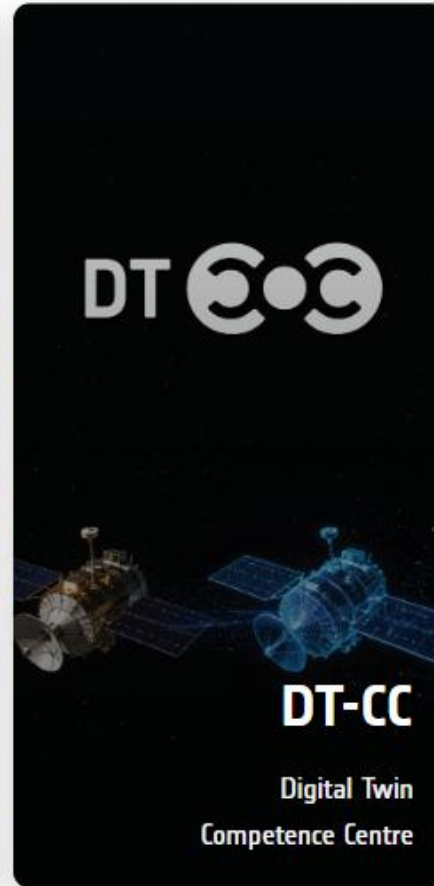
<https://xr.esa.int/>



<https://ai.esa.int/>



<https://digital-twin.esa.int/>



<https://ind.esa.int/>



<https://de.esa.int/>



TEC-SFC – Cost Engineering



Focus is on supporting ESA studies and projects with cost estimates and analyses (primarily in Phase 0, A, B1, and Tender Evaluation Boards)

System Engineering approach to costing

Collaborative, flexible and highly committed

Team of currently 10 cost engineers

Active in **Internal Training, Education, Outreach**

One Team One Direction



If we were designing Cost Engineering today for the missions we want to build in 2030 and beyond — what would we do differently?

Future Engineering Strategy overview

AI Excellence



Sustainability Engineering & Standards



Cost Engineering



Digital Systems & Twin Engineering



Concurrent Engineering & future Missions



Industrialisation



World-class Future Engineering Lab / Infra



Future Engineering Data HUB



Excellence HUB

Project Enablement

We deliver in line with SHINE

Future Engineering Lab / Infra

VISION

Create a modular, scalable, and world-class Future Engineering Lab recognized as a **Sandbox, Model Testbed, and Innovation showcase** enabling ESA and industry to accelerate innovation and collaboration.

Establish first Digital Model Factory, design to production, streamlined acceptance & tests

Accelerate
Innovation & Reduce
Time-to-Market

Increase
Attractiveness
Boost Collaboration

Higher re-use

One Security
governance



Enable cost
reductions



Future Engineering Data HUB



VISION

Create a **modular**, and **scalable** Future Engineering Data Hub, positioning ESA as the **LEADER** in digital engineering, AI integration, and sustainable operations

Centralizing & Unlocking
Data Value

Accelerating Innovation

Supporting Compliance,
Sustainability & Quality

Knowledge Backbone

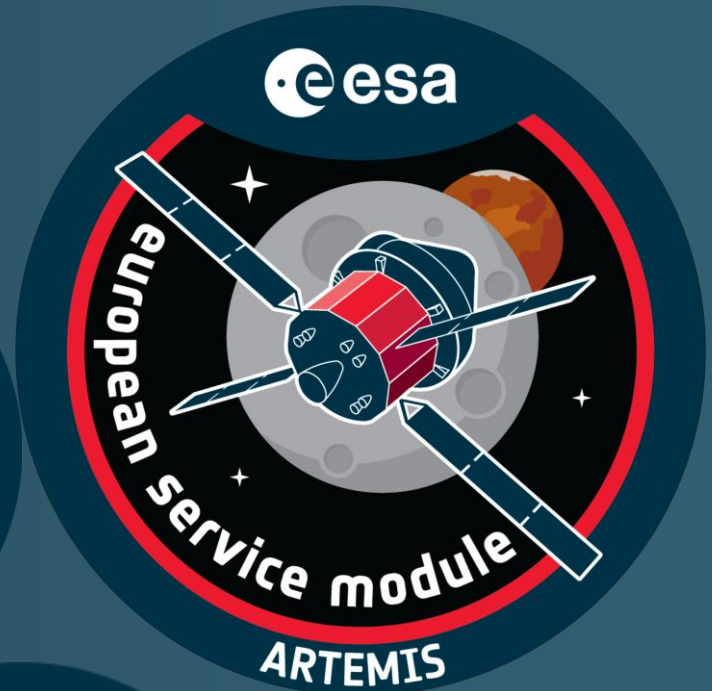
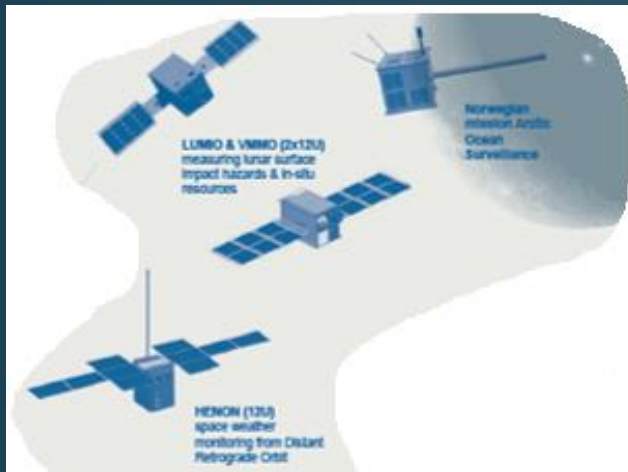
We deliver in line with SHINE



- Provides independent cost estimates to studies, projects and Concurrent Design Facility;
- Reviews industry cost estimates;
- Advises studies/projects accordingly – Sys. Eng. trades
- Manages the Financial Proposal tool ECOS;
- Participates to ESA Independent Project Reviews, Tender Evaluation Boards and negotiations.

Key is that we directly support studies and projects; we are not an ESA accounting/monitoring function.





Cost Engineering in the CDF



Sometimes
Systems
Engineer or
Team Lead role

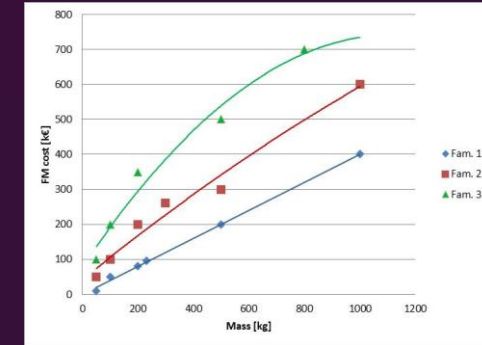
Cost Engineer

Participation in nearly **all CDF studies** (> 10 per year)



[illegible]

Database – references & benchmarks

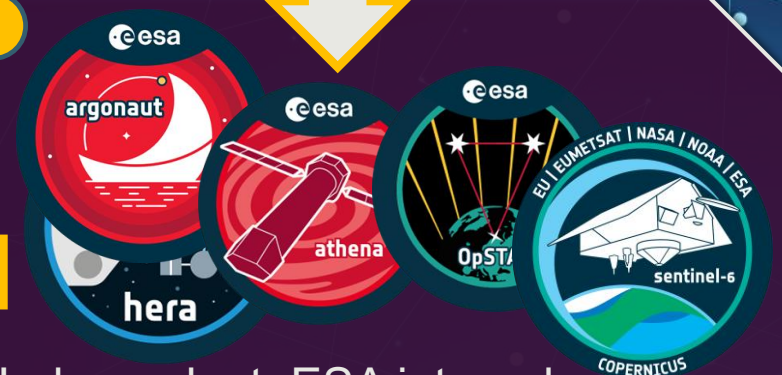


Parametric models, look-up tables, percentages etc.

Comparisons with Cost Estimates prepared by Industry



Independent, ESA internal Cost Estimates



ECOS 6

-
- esa-br-56
- # ECOS
- The ESA
Costing
Software
- esa
european space agency





EUROPEAN SPACE AGENCY

THANK YOU!

Future Engineering Team

One Team One Direction

