

ISS COMMUNITY BRIEFING

27 October 2025



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Several major changes to ISS that will impact ESA's utilisation on ISS:

1. ISS de-orbit schedule
 2. Availability ISS resources
- Briefing today intends to give update on current (un)knowns to ISS community and give community opportunity to ask questions

ISS – ESA allocation



- ESA contributes to fulfil obligations to the common operations part of ISS (USOS)
 - 8.3% allocation to ESA
 - 8.3% of astronaut time available for USOS utilisation
 - Build up credit for long-duration astronaut missions
 - 8.3% of cargo transportation and data communications
- ESA utilisation:
 - Scientific activities
 - National contributions (Member State supported)
 - Technology demonstrations
 - Education activities
 - +- 70% for ESA sponsored utilisation (science coming from AOs and very recently exploration-focused science; technology demonstration, education)
 - Up to +- 30% for national contributions & commercial activities

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ISS: Utilisation and Current Situation

NASA De-Orbit Schedule

- In June 2024, NASA awarded \$843 Million to SpaceX to build a (single) ISS de-orbit vehicle called United States Deorbit Vehicle (USDV)
- USDV will be based on SpaceX's Dragon but with a larger trunk section mainly to store the additional fuel and house more Draco thrusters
- NASA will separately procure the launch vehicle – approximately 3 years before launch
- NASA will own and operate the USDV

Schedule

- Mid 2028: Orbit lowering will start around 2.5 years before (R-2.5) depending on solar activity
- Mid 2029: Target USDV launch in 1.5 years before re-entry (R-1.5y)
- Mid 2029: Last crew arrives
- Mid 2030: Last crew will depart 6-8 months before re-entry
- Jan 2031: Notional re-entry date (R)

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Impact of De-Orbit on ESA Utilisation

The baseline strategic plan assumed full utilisation until end of 2030.

This is impacted by:

- Decreased up- and download capabilities due reduction of usable docking ports (2 docking ports + berthing)
- Massive reduction of crew time availability from mid-2029 till mid-2030 (2 USOS crew members for a 1-year mission)
- Potentially no activities beyond mid-2030
- There are many unknowns regarding the capabilities of ISS/Columbus during the orbit lowering and preparations for de-orbit. These are currently being worked.

ISS – Current Situation

- **NASA funding cuts (not related to Fiscal Year 2026):**

NASA budget for the ISS has been tight for years; they are now cutting research and ops funding by at least **50%**. To make that happen, they plan to:

- Have fewer USOS crew members on the ISS (not yet started, timing unclear)
- Keep crews in space longer (missions of 8 instead of 6 months; already being implemented)
- Reducing amount of cargo vehicles - amount and cadence not yet specified
- Reducing Conditioned Stowage assets by half starting next year

- **ESA planning baseline before NASA cuts:**

- 280hrs of prime crew time for utilisation per year (2025 through 2029)
- 3000kg of upload till end of ISS
- 7 LDM crews after Crew-11
- Access to Conditioned Stowage on all visiting vehicles

→ Planning severely impacted by NASA cuts

ISS – ESA exercise to assess NASA funding cuts



- ESA performed an internal exercise to assess what this means for ESA's complement on the ISS
 - ISS constraints:
 - Crew time
 - Number of crew members as subjects (potentially)
 - Upload/download
 - Conditioned stowage
 - Non-ISS constraints:
 - Development maturity
 - Scientific merit (external review)
 - Balanced scientific complement

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ISS – ESA assuming two potential scenarios



- Scenario #1 (“*baseline scenario*”) – around 1500kg/600hr
 - Cuts upload by 50%
 - Risk: **still high conditioned stowage needs and upload of big facilities**
 - **Covers around 60% of the of the planned ESA ISS complement**
- Scenario #2 (“*minimum scenario*”) - around 650kg/540hrs
 - Assumes no item with a mass of more than 40kg
 - Risk: **still high conditioned stowage needs**
 - **Covers around 50% of the of the planned ESA ISS complement**

DEPENDENT ON NASA
FUNDING SITUATION

DEPENDENT ON ESA
MEMBER STATE
DECISIONS

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→ THE EUROPEAN SPACE AGENCY

ISS – ESA assuming other categories

Back-up Activities

- Certain activities are identified to be suitable back-up candidates
- They can be added to the complement when opportunities open up
- This includes the ready-to-fly activities that are anyhow flexible to be implemented on other platforms

Activities recommended for descopeing from ISS:

- Will be assessed for feasibility of re-routing them to a different platform (mainly automated free-flyer or CLD)
- Scientific merit has been re-assessed by dedicated peer review
- If not considered possible, affordable or beneficial to re-route, the investigations might need to be deselected

Activities be discussed with other stakeholders

- Certain activities will be discussed with other stakeholders like commercial partners, member states, or other ESA internal parties

PAM candidates

- National contributions targeting PAM flights are not considered since they don't use ESA utilisation resources resulting from CSOC offset.

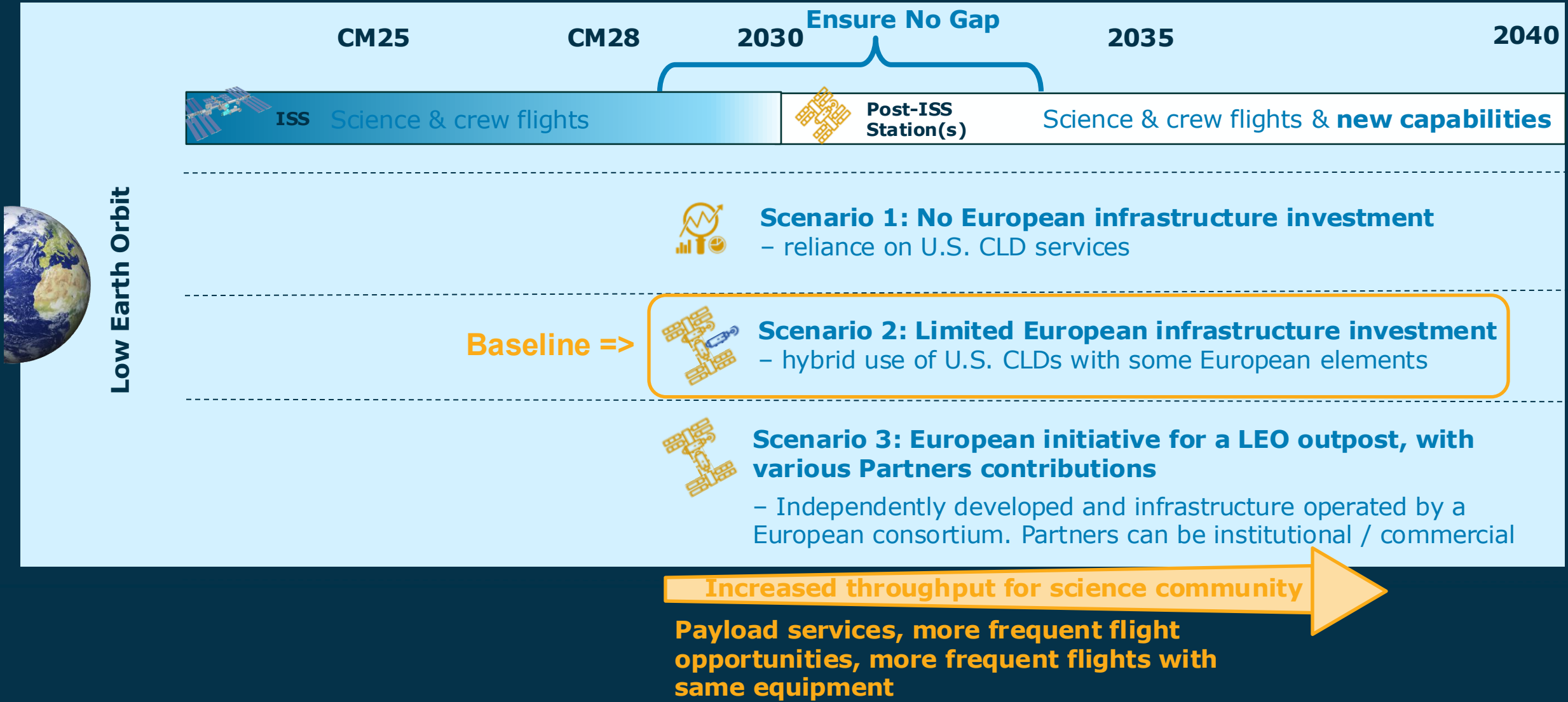
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Next steps

- TBD: NASA FY2026 outcome
- 26-27 November 2025: Ministerial Conference 2025
 - ESA Member States to decide on ISS and post-ISS activities
- NET January 2026: ISS Community Briefing - update

Post-ISS Outlook

Post-ISS - Three Scenarios



Call for Proposals released: 3 September 2025

Deadline (extended): 29 October 2025

The main objective of this activity is to execute one or more dedicated missions for scientific utilisation and technology demonstration in microgravity, during the 2026-2029 timeframe, as a complementary activity to the ISS. We aim to explore early opportunities for utilisation of emerging commercial LEO Destinations (CLDs), gaining hands-on experience with new service-based providers offering an end-to-end service



END-TO-END LEO UTILISATION SERVICE PROCUREMENT FOR SCIENCE AND RESEARCH IN MICROGRAVITY - FIXED CALL FOR PROPOSALS

Tender Action Number: 5-50149 — Activity Number: 1000044154

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CfP - End-to-End LEO services

The proposed service can cover one or more of the following distinct scenarios. More than one proposal per bidder can be submitted!

Scenario 1: Experiment End-to-End

ESA leads science selection.

Provider validates feasibility and implements chosen experiment.

Scenario 2 (Preferred): Experiment & Science End-to-End

Provider also conducts science selection.

ESA retains final approval of experiments to fly.

Scenario 3: Hosting, Operating & Returning

Experiment proposed by ESA or provider (aligned with ESA criteria).

Provider focuses on integration, operations, data return.

ESA may supply hardware as Customer Furnished Item (CFI).

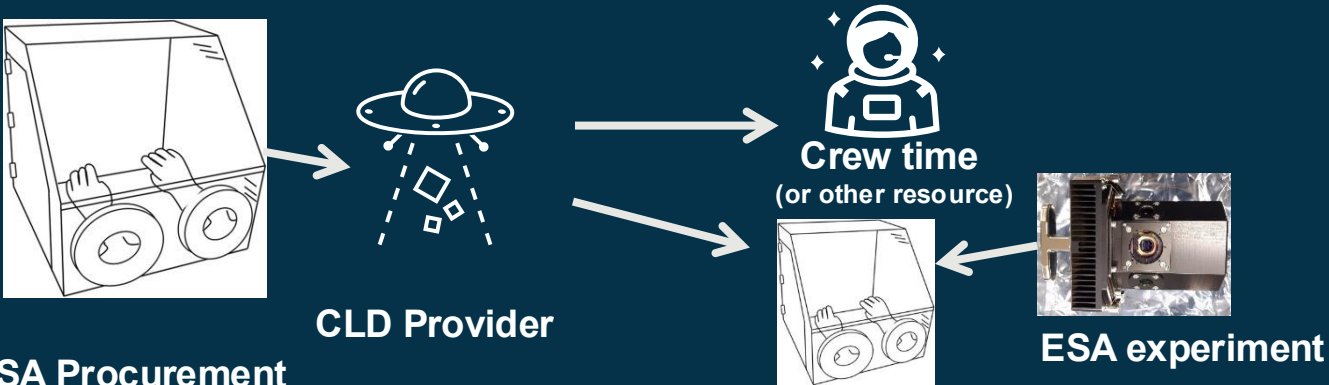
ESA has engaged discussions with all CLD Providers about various scientific research topics and the essential Research Commodities needed for science activities onboard future LEO outpost(s).

The following aspects are considered:

- Consistency with Explore2040 scientific objectives
- Interest of other stakeholder (international partners and commercial users)
- Capabilities in Europe to build commodities
- Potential readiness wrt to potential launch/need dates (especially for bigger facilities that may need to be integrated before launch of CLD platform)

Commodity
Cold Stowage*
Microgravity Incubator
Advanced Microscopy
External Platform
LS/MS Gloveboxes
Robotic Sample Handlers
Portable DNA/RNA Sequencer
PCR Machine (Portable)
High/Low-Speed Centrifuges

*partly covered by CHEST and MARIN developments

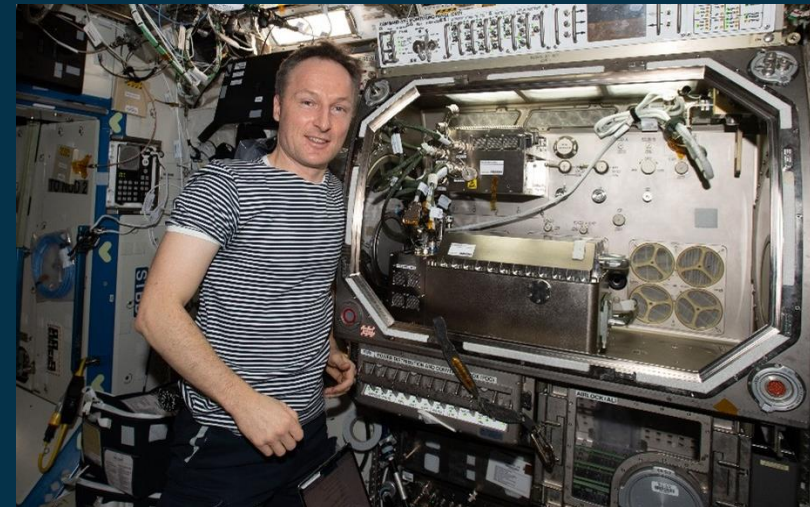


First Step: Glovebox

A Glovebox has been identified as a key commodity of interest across CLD providers, representing a valuable barter asset for ESA to secure utilisation under favourable conditions.

The proposed concept involves procuring a modular unit starting with an Optical Bench. This bench will feature payload interfaces compatible with the ISS's Microgravity Science Glovebox, ensuring seamless transfer of existing legacy payloads. The unit will be designed with a 4 MLE (Middeck Locker Equivalent) volume, providing essential resources such as water cooling, mounting area, power, data, and gas/venting interfaces.

- 2 Flight Modules are planned to be procured to maximise investments



LEO Facility Definition Teams (FDTs)



- ESA has worked very closely with the scientific community on science recommendations for LEO, organised in 7 LEO FDTs:
 - Material Sciences
 - Plant Cultivation
 - Atomic Clock
 - Fluid Physics
 - Soft Matter
 - Ultracold Atoms
 - Bioculture (“ASCLEPIUS”)
- Several studies proposed as part of the Exploration Science element of Terrae Novae programme for CMIN25

- ESA has organised an RFI and subsequent workshop with automated platform providers
- Pending CMIN25 funding, an AO for automated platforms will be released
- Pending experience with first end-to-end services call for proposals and CMIN25 funding, another call might be released to target automated platforms

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