EU SPACE – základní komponenty a výzvy

- **Copernicus** poskytuje data z pozorování Země – pomáhá při záchraně životů na moři, při řešení přírodních katastrof a zlepšuje zemědělství.
- **Galileo** je evropský satelitní navigační systém – zajišťuje přesné a spolehlivé určení polohy a času pro auta, vlaky, letectví a další odvětví. Funguje od prosince 2016.
- **EGNOS** zajišťuje velmi přesnou navigaci pro leteckou, námořní i pozemní dopravu – umožňuje bezpečné přistávání letadel. Je plně funkční a počet uživatelů roste.

Zvyšuje se závislost na SPACE technologiích – roste objem dat a rostou také rizika

Geopolitické proměny – tlak na soběstačnost a autonomii

Přímé financování + Horizon Europe

€13,202 billion EUR for 2021 – 2027

Destination 5

OPEN STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA

20 témat v roce 2025

- Rozpočet 139 M€
- Otevření **22/5/2025** -> uzávěrka **25/09/2025**
- Část témat vyhlašuje EUSPA, Delegace také na ESA -viz samostatné informace

Accessing Space (3 témata)

HORIZON-CL4-2025-02-SPACE-11: CSA on access to European spaceports

CSA, max 1 projekt (studie), 1 mil EUR

HORIZON-CL4-2025-02-SPACE-12: Digital solutions for autonomy for space transportation systems, design and simulation tools - Digital enablers and building blocks

RIA, max 2 projekty, 3 mil EUR, improved space transportation systems and launcher sustainability, reduced costs

HORIZON-CL4-2025-02-SPACE-13: Digital solutions for autonomy for space transportation systems, design and simulation tools – targeting demonstration

IA, max 2 projekty, 7 mil EUR, **Space partnership,**

vzdálené zjišťování závad, vzdálený termo-mechanický monitoring

Acting in Space (4 témata)

In-Space Operations and Services (ISOS) - cílem je odolnost, udržitelnost a bezpečnost space komponent, kombinovatelnost a kompatibilita součástek, snížení nákladů a cirkularita

HORIZON-CL4-2025-02-SPACE-21: ISOS Pilot Mission Detailed Design **– Servicing component**

This topic addresses the finalisation of the detailed design of the **servicing component of the ISOS pilot mission**

RIA, max 2 projekty cca 6 – 12 mil EUR, 18 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-22: ISOS Pilot Mission Detailed Design **– HOST component**

Detailed design of the **platform component of the ISOS pilot mission,** which will be named **Hub for Operational Services and on-orbit Testing (HOST)**. The HOST shall be able to host multiple servicer spacecraft,

RIA, max 1 projekt, 17 mil EUR celkem

ISOS – pokračování

HORIZON-CL4-2025-02-SPACE-23: ISOS Pilot Mission Detailed Design – Logistics component

This topic addresses the detailed design of the **logistics component of the ISOS pilot mission**. This component shall be able to transport cargo (i.e., satAPPs and propellant) taken from an upper stage to the HOST component.

RIA, 10 – 12 mil EUR 1 projekt

HORIZON-CL4-2025-02-SPACE-24: ISOS Pilot Mission Detailed Design – satAPPs component

This topic addresses the detailed design of the **satAPPs component of the ISOS pilot mission**, that allows the creation of composable and exchangeable functional modules for satellite upgrade and the development of a European catalogue of satAPPs, following the AppStore approach and fostering system modularisation and flexibility.

RIA, max 2 projekty, 5 mil EUR celkem

ISOS Pilot Mission (EU ISOS Strategic Forum)

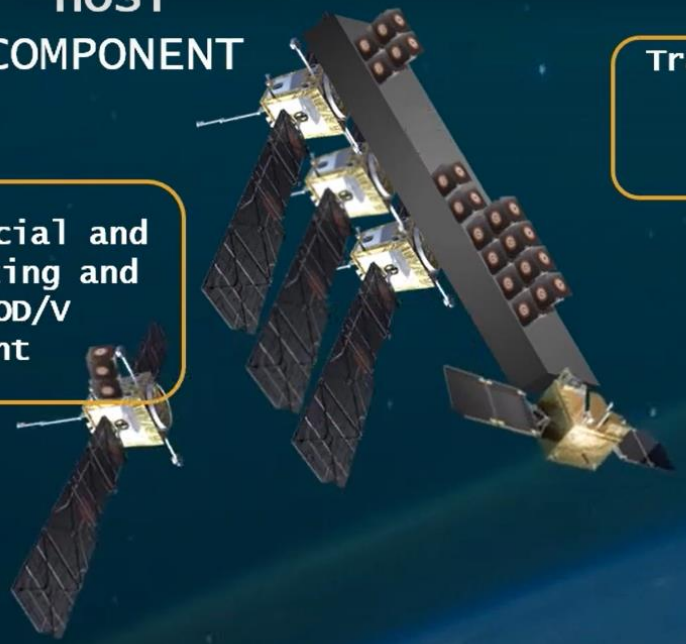
#EUSpace

SERVICING COMPONENT

Providing commercial and governmental services

HOST COMPONENT

Providing supply for commercial and governmental servicer, hosting and distributing satApps, IOD/V experiments, propellant



LOGISTIC COMPONENT

Transporting cargo and supply to HOST, providing transport services to commercial and governmental spacecraft

satAPPS COMPONENT

Building an ecosystem of functional satellite upgrades and enhanced IOD/V opportunities

Using space on Earth

HORIZON-CL4-2025-02-SPACE-31: Digital enablers and building blocks for Earth Observation and Satellite telecommunication for Space solutions

Satellite network interconnectivity, interoperability among multiple EO missions, system security and threats identification, promote cooperation between different actors

RIA, 3 projekty (1-5 mil), 6 mil EUR celkem, **Space partnership**

HORIZON-CL4-2025-02-SPACE-32: Preparing demonstration missions for collaborative Earth Observation and Satellite telecommunication for Space solutions

Increasing performance of space satellite networks, new type of control

IA, 3 projekty, 11 mil EUR celkem, **Space partnership**

COPERNICUS

HORIZON-CL4-2025-02-SPACE-41: Copernicus Climate Change Service (C3S) evolution: new and innovative processing and methods for future Sentinels and other satellites for reanalyses

Innovative methods to prepare and pre-process observational input for Earth-system reanalysis datasets, including the Copernicus Sentinel missions, which will lead to an increase in the use of observations for Earth-system reanalysis

RIA, 1 projekt, 10 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-42: Copernicus Atmosphere Monitoring Service (CAMS) evolution: improved soil-vegetation-atmosphere modelling and data assimilation of atmospheric constituents

Accurate simulation of the biogenic fluxes of Volatile Organic Compounds (VOCs) and other atmospheric constituents to represent the corresponding processes in numerical models;

RIA, 1 projekt, 3 mil EUR celkem

COPERNICUS (pokračování)

HORIZON-CL4-2025-02-SPACE-43: Copernicus Anthropogenic CO_2 Emissions Monitoring & Verification Support (CO2MVS) capacity: new and innovative methods to estimate the impact of fires on vegetation and related carbon fluxes

Better understand and characterise the impact of wildfires on the carbon cycle and on anthropogenic emissions through land use change.

RIA, 1 projekt, 3 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-44: Copernicus Marine Environment Monitoring Service (CMEMS) evolution: new and innovative ocean data assimilation techniques

To improve ocean monitoring and predictions, and to remain at the forefront at the international level;

RIA, 1 projekt, 5 mil EUR celkem

COPERNICUS (další pokračování)

HORIZON-CL4-2025-02-SPACE-45: Supporting the AI/ML digital transition of Copernicus Services

Integrated AI/ML strategy across Copernicus Services, value chains and workflows; Improved quality, timeliness, reliability and resilience of Copernicus data, products and applications;

RIA, 1 projekt, 12 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-46: Innovative Earth observation services in support of maritime litter detection and ship source pollution policies

- Development and demonstration of space sensors - estimation of oil spill volume and thickness,
- Detection of oil spills in sea ice conditions;
- Detection and identification of chemical products on the sea surface
- Detection and identification of garbage on the sea surface

RIA, 1 projekt, 5 mil EUR celkem

Boosting space through non-dependence

HORIZON-CL4-2025-02-SPACE-71: Space Critical EEE Components for EU non-dependence – RISC-V Microprocessor on 7nm

Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space EEE components and related technologies across their entire supply chain;

RIA, 1 projekt, max 5 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-72: Space Critical Equipment and Related Technologies for EU non-dependence – Chip Scale Atomic Clocks and Solar Cells

- Chip Scale Atomic Clocks [Target final TRL 6]
- Solar Cells [Target final TRL 5-6]

RIA, 2 projekty, max 8 mil EUR celkem

Boosting space through non-dependence

HORIZON-CL4-2025-02-SPACE-73: Space Critical EEE Components for EU non-dependence - Connectors

- Connectors [Target final TRL 5-6]

RIA, 1 projekt, max 1 mil EUR celkem

HORIZON-CL4-2025-02-SPACE-74: Space Critical EEE Components for EU non-dependence – Advanced Packages and Memories

- Advanced packages – Organic substrate for very high, fine pitch [Target final TRL 6-7]
- MRAM Memories [Target final TRL 7]

RIA, 2 projekt, max 6 mil EUR celkem

Boosting space through non-dependence international cooperation

- **HORIZON-CL4-2025-02-SPACE-81: EU-Japan cooperation on the exploitation of Quantum Space Gravimetry data**
- Support the EU space policy and the EU green deal by preparing the grounds for an innovative Quantum Space Gravimetry (QSG) mission.
- Foster EU-Japan cooperation in the field of quantum sensing from space.
- Horizon Europe will fund EU scientists only. Japan scientists will fund their own activities, expected to be at the same level as the EU contribution.

RIA, 1 projekt, max 0,5 mil EUR celkem

Delegováno na ESA

Indirectly managed actions delegated to ESA:

- ESA.1 **Using Space on Earth – Satellite navigation - EGNSS Evolution: Technology and infrastructure-related R&D activities, 58 mil EUR**

- ESA.2 **Using Space on Earth – Telecommunications - IRIS2 Space infrastructure: Development and Validation, 75 mil EUR**

- ESA.3 **Boosting Space through IOD/IOV opportunities - In Orbit Demonstration/Validation (IOD/IOV) service, 8 mil EUR**

Delegováno na EUSPA – otevření výzev 14. 10. 2025

2025 CASSINI activities

Services & Data coming from satellites, both Earth Observation and navigation

Space Data Economy

- **Energetika**
- **Adaptace na změny klimatu a snižování uhlíkové stopy**
- **Zelené financování**
- **SMART cities**

Innovative space-based applications enhancing capabilities for a resilient Europe

SPACE related témata mimo C4

6. 5. – 17. 9. 2025

HORIZON-CL6-2025-03-GOVERNANCE-11

Cluster 6 Call 03 - single stage (HORIZON-CL6-2025-03)

Enhancing sustainability and resilience of agriculture, forestry and rural development through digital twins

HORIZON-CL6-2025-01-BIODIV-07

Cluster 6 Call 01 - single stage (HORIZON-CL6-2025-01)

Integrated and coordinated approaches for coral reefs and associated ecosystems (mangroves and seagrass beds) conservation, restoration, and climate mitigation and adaptation