



REPUBLIC OF SLOVENIA
MINISTRY OF THE ECONOMY,
TOURISM AND SPORT

Slovenian Space Office

SpaceTech

Hidden Champions & Business Opportunities in Slovenia and Austria



Ljubljana, 27. 5. 2025

Slovenian Space-Ecosystem

TANJA PERMOZER

Head of Slovenian Space Office
Head of the Slovenian Delegation to ESA



Picture Source: ESA

- **Space: Slovenia in Europe and in the World**
- **Slovenia: Space Governance**
- **Slovenia in Space – Recent Timeline**
- **Slovenian Space Strategy**
- **Slovenian Space Sector, Competences, Example success stories**
- **Noordung Center Slovenia**
- **Possibilities of Cooperation**
- **QR Code: Slovenian Space sector & Slovenian Space Strategy 2040**

Space: Slovenia in Europe and in the World



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Association Agreement with ESA signed in 2016,
upgraded in 2020, 1. January 2025 MS Accession



- **Member of COPUOS – 2021**
(UN Committee on the Peaceful Uses of Outer Space)
- **International Relations & Agreements**
(ASI, Luxembourg, CNES, DLR, NASA, JAXA, Artemis Accords, Algeria, ...)
- **More to come: Brazil, India, ...**
- **International Fairs: USA, Germany, Italy, Canada, LPS Vienna**



Slovenia– Space Governance



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PRIME Minister

Support and high direction of national space activities.

Interministerial Working Group

Coordination of the Government guidelines and activities for the space sectors.

SSO (Slovenian Space Office)

Ministry of the Economy, Tourism and Sport

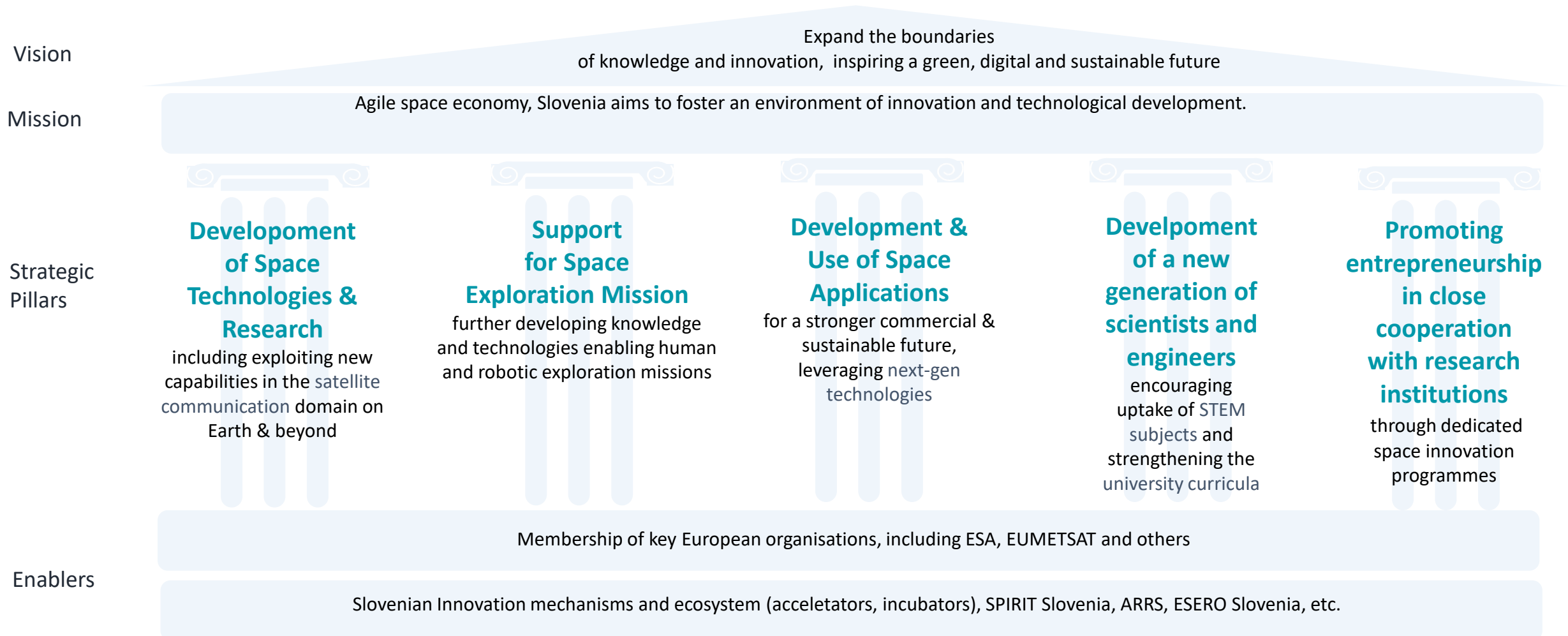
Elaborates and implements the national space policy strategic documents.



Slovenia in Space – Recent Timeline



Five strategic pillars will help materialise the strategy's vision and mission

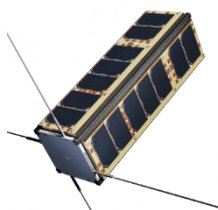


Slovenian Space Sector – Core Competences

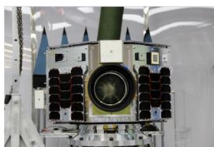
Video

- ➔ First **Slovenian satellites launched into Space:**
 - A satellite with **interactive real-time video streaming** and multispectral imaging at
 - 2.8 m ground resolution,
 - One satellite provides valued ionizing radiation measurements from **a Medium Earth Orbit at an altitude of approximately 6000 km.**
- ➔ **Slovenian Equipment** used at the **ESA launch site in French Guiana and Artemis Mission**
- ➔ **Faculties and Research institutes involved in international projects.**
- ➔ A Slovenian company has become as one of the **leading EO (Earth Observation) downstream players in the world.**

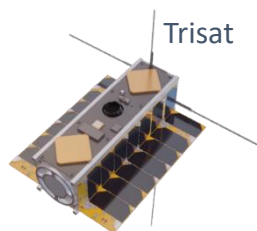
Trisat-R



Nemo-HD



Trisat



The core competencies of Slovenia are:

- Earth observation ground solutions (services and applications)
- Micro satellites and subsystems
- Microgravity and human effects studies
- Telecommunication (on board transmitters)
- Software systems (EGSE, ground stations)
- Ground test measurement technologies (HW and SW)
- Cryocoolers
- Electric motors
- Metallic 3D printing technologies
- Modelling and digital twins

Slovenian Space Sector (extract)



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Slovenia possess a diverse ecosystem, with players active throughout most of the value chain

Upstream

Midstream

Downstream



Navigation



SatCom



Earth Observation



Example success stories



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Sinergise



Core Competencies

- GIS tools & web-based applications managing large spatial datasets for widescale access
- Means for visualisation of multi-spectral & spatial data
- EO satellite image archive
- Near-real time processing chain for satellite imagery & ML



History

- Established in 2008
- Involved in 30 ESA contracts

Results

- Delivering large subcontracts on Copernicus data-related services
- Delivering multiple Future EO contracts such as Data Cube Facility Services, Query Planet and Platform extensions with AI capabilities.

Skylabs



Core Competencies

- Nanosatellite platforms & subsystems (including on-board computers, remote terminal units, power processing units, and communications) – upstream
- EGSE equipment
- IP cores, ASIC designs and rad-hard avionics

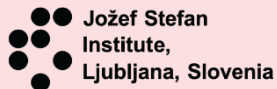


History

- Established in 2013
- Involved in 26 ESA contracts

Results

- Delivered large contracts in GSTP, Incubed-2, Future EO and Civil Security from Space.
- Contracts involve the development of rad-tolerant high-performance computers for AI, Pico-RTU system, PicoSkyFT soft-core processor and the miniaturised multispectral SWIR imager flown on the Slovenian cubesat – TRISAT.



Jožef Stefan Institute



Core Competencies

- Studies on microgravity and various topics in human exploration
- Wide-ranging engineering R&D & modelling & simulations

History

- Established in 1949
- Involved in 14 ESA contracts

Results

- Implemented a major 60-Day Bed Rest study under the E3P programme.
- Involved in various PECS and RPA activities related to human spaceflight, atmospheric instrumentation, communications technology and liquid fuel control.



Cosylab

Core Competencies

- Software for control systems engineering, ground stations, EGSE and simulators.
- UX/UI design for mission control systems and astronomy

History

- Established in 2001
- 7 ESA contracts



Results

- Involved in multiple GSTP activities relating to upgrading control systems under the European Ground System – Common Core (EGS-CC) initiative.
- Delivering other GSTP activities for Testing Facilities and Telescope applications

Example success stories



Space SI



Core Competencies

- Data processing for various applications (remote sensing, meteorology and astrophysics)
- Small Satellite technologies
- Ground Control infrastructure & a multidisciplinary laboratory for testing space technologies.

History

- Established in 2010
- Involved in 9 ESA contracts

Results

- Multiple Future EO activities including for data exploitation from their NEMO-HD satellite
- Under PRODEX, activities related to data acquisition for ESA M5 Theseus mission.
- Independent of ESA, Space SI is operating the Slovenian NEMO-HD satellite and has invested in two ground station facilities.



Le-tehnika



Core Competencies

- Cryogenics and miniature cryocoolers for IR detectors and other applications
- Hydraulics cylinders and power systems

History

- Established in 1989
- 4 ESA contracts

Results

- Funded under two GSTP activities and one RPA activity to develop miniature rotary type Stirling cryocoolers for Space.
- Engaged in a contract under E3P to develop a Cooling and Heating Stirling Trunk



DEWESoft



Core Competencies

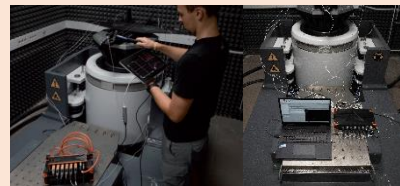
- Hardware and software for GSE
- Sensors and data acquisition systems for electronics, acoustics, structural dynamics, vibration, rotational machinery and more.
- Analysis tools

History

- Established in 2000
- 3 ESA contracts

Results

- Under PECS, developed the Measurement Watchdog And Sensor Checkout System to be used in testing by Thales Alenia Space
- Under the RPA, they are developing Acoustic Fatigue Watchdog device for Thales Alenia Space and an instrumentation troubleshooting testing tool



University of Ljubljana



Core Competencies

- Various disciplines including astronomy data analysis, meteorology modelling, fluid dynamics, additive manufacturing, material science, life sciences in microgravity, GNSS and autonomous robot swarm navigation.

History

- Established in 1919
- Involved in 30 ESA contracts

Results

- Delivered large PECS activities related to spectroscopic techniques for Gaia, GNSS, mesoscale wind profiles for numerical wind prediction and more.
- Successful in GSTP on topics including 3D printing and fuel cells, successful in PRODEX for topics relating to the exploitation and analysis of astronomy science data.
- Leading RPA activities on topics from autonomous robot swarms, cardiovascular processes in microgravity and sandwich composites. Involved as a subcontractor for 10 further activities



Competences: Space Research in Slovenia



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The ESA-owned Short Arm Human Centrifuge has been upgraded, installed and inaugurated at the **Olympic Sport Centre Planica facility** near Kranjska Gora, Slovenia.

1 of 3 in Europe

Run by the Jozef Stefan Institute on behalf of ESA.

Noordung Center Slovenia



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The unique place of Noordung Center is to add a cultural and humanistic contribution to human efforts to explore and understand the universe.





What Slovenia offers for cooperation

- A dynamic industrial system with a lively startup & tech community
- Strong research community
- Increasing resources invested in space in the national framework

Possibilities for Cooperation

- Space Applications
- Space economy and ecosystem development with special emphasis on
 - space sciences and technologies,
 - space exploration,
 - small satellites and
 - academic collaboration

Cooperation within Organisations

- Cooperation in the framework of Slovenian Space Office and ESA, EUSPA, COPUOS & UNOOSA.

SLOVENIA, small on Earth, yet big in space.



SLOVENIA
ESA MEMBER STATE
2025

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Slovenian Space Strategy 2030



Slovenian Space Catalogue

