



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA GOSPODARSTVO,
TURIZEM IN ŠPORT



Slovenia's cooperation with ESA & EU Slovenian space strategy



Slovenia, 10.-12. October 2023



TANJA PERMOZER

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

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- Slovenia – Space governance
- Slovenia in Europe and the World
- Cooperation with ESA & EU
- Slovenian Space Sector
- Slovenian Space Strategy
- Success stories
- How we support companies and institutions



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Slovenia– Space Governance



REPUBLIC OF SLOVENIA
MINISTRY OF THE ECONOMY,
TOURISM AND SPORT
Slovenian Space Office



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.

Our Mission

SSO participates in the Council of the European Space Agency (ESA) work, promoting and coordinating the Slovenian presence in the approved program.

SSO may enter into bilateral and multilateral agreements with stakeholders from other countries.

SSO promotes, supports, and coordinates Slovenian participation in European Union projects and initiatives in the space field and related application services.

SSO maintains relations with aerospace stakeholders in other countries.

Slovenia in Europe and in the World



Association Agreement with ESA
signed in 2016, upgraded in 2020



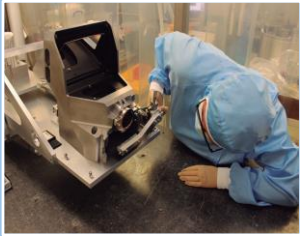
- Member of COPUOS – 2021 (UN Committee on the Peaceful Uses of Outer Space)
- International Relations & Agreements (NASA, ASI, DLR, JAXA, ...)



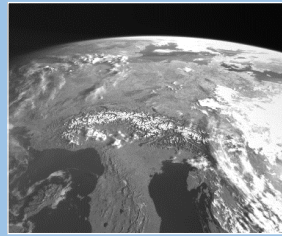
Slovenia's cooperation with ESA



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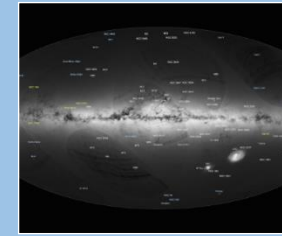
GSTP



FEO



HRE



Prodex
Programme



Slovenian Contribution to ESA Optional Programmes

Slovenia
Georeturn = 1,03



InCubed



BASS



Digital Twin
Earth

Slovenia's cooperation with ESA & EU



The Slovenian Space Office and Slovenian entities cooperate with ESA and the EU in various fields:

Earth Observation from Space

More than half of the essential climate variables, defined by the global climate observing system, are coming from space.

Digital Twin

By using artificial intelligence, modern computing capabilities, and observations we can create a digital twin of our planet, or certain parts of our planet to simulate a situation.

Space Missions

Space missions stimulate technological innovation and scientific discovery.

Vision for the Moon

The Moon is a focus for upcoming space activities, with many missions planned over the coming decade.

Space in Business

Space is one of the future technologies that you have to invest in for a company to be successful.

Slovenia's cooperation with ESA - Science

We need scientists

to identify

- our lack of knowledge
 - to understand what is happening on Earth,
- so that we can build satellites
that answer these pressing questions.



This is the engine
of the development of the industry.



Copernicus, for example, its success is based on past scientific developments in space technology and in collaboration with the industry

Link between science and industry

has to be very strong to bring new technologies forward,
but also to enable the development of new ones.

We need industry support

- ➔ to develop new services and
- ➔ create a strong bond with users,
as well as facilitate the use of satellite data.

Slovenian Space Sector



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I FEEL SLOVENIA

GREEN. CREATIVE. SMART.

Slovenian companies create products and services with the desire to deliver smart solutions that benefit the environment, society and business.

Slovenian Space Sector



Special focus on highly specialized
niche products and services

RADOMES

„HUMAN
CENTRIFUGE“ IN
PLANICA

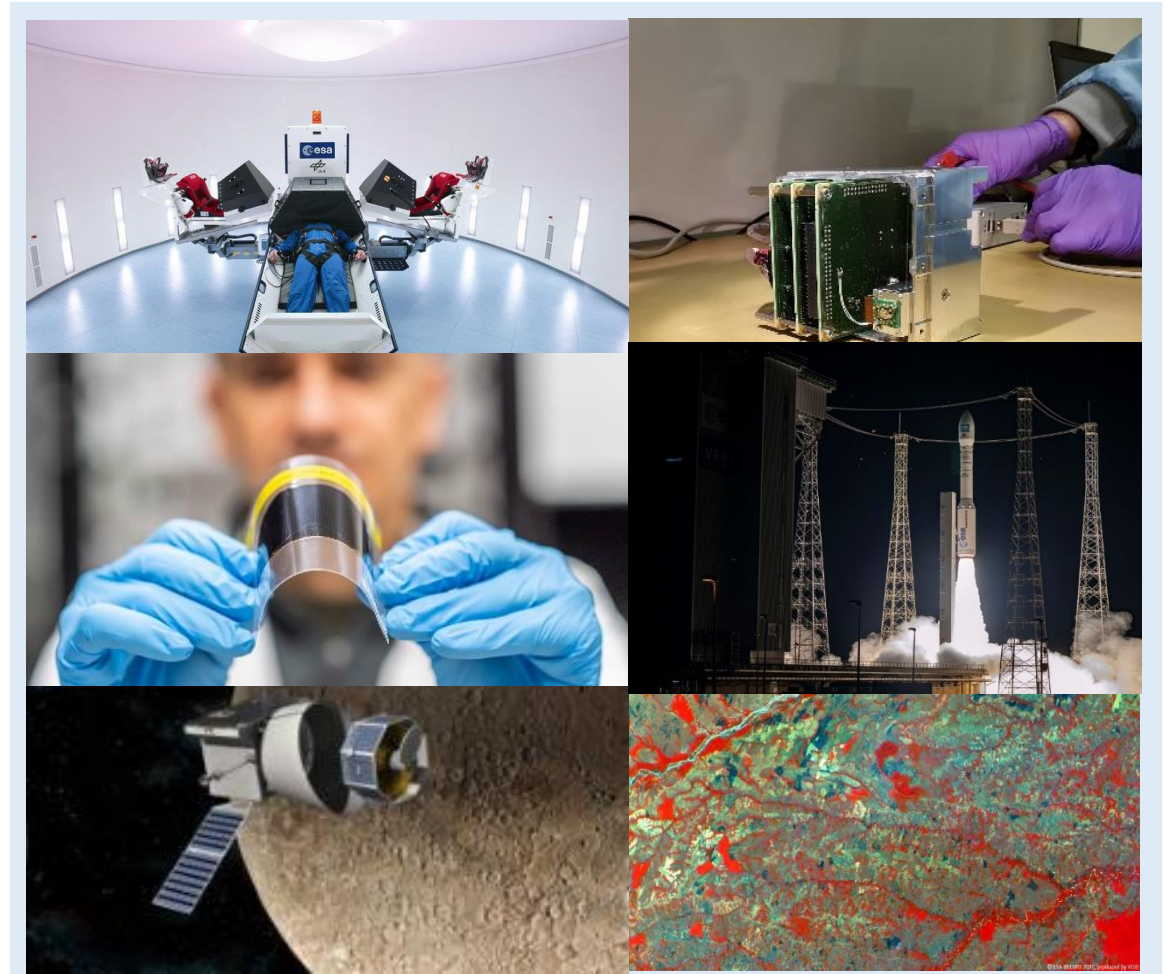
ARTIFICIAL
INTELLIGENCE

NEW
MATERIALS

EARTH
OBSERVATION

NANO- AND
SMALL
SATELLITES

CONTROL AND
MEASURING
EQUIPMENT





Slovenia – Diverse Ecosystem

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

Upstream

Midstream

Downstream

Logos in the Upstream section include: skylabs, Henkel, DEWESoft™, INTECTIV, BALMAR, INSTRUMENTATION TECHNOLOGIES, DUOL, ŽustAI, RIEDL, PARADIGMA technologies, MARSi group, Jožef Stefan Institute, University of Ljubljana, University of Maribor, and IMT Institute of Metals and Technology.

Logos in the Midstream section include: STN, COSYLAB, SPACE-SI (SLOVENIAN CENTRE OF EXCELLENCE FOR SPACE SCIENCES AND TECHNOLOGIES), AERiUM, and DUOL.

Logos in the Downstream section are grouped into three application areas:

- Navigation:** AaltaLab, University of Ljubljana, AERiUM, ix nav, VisionAnchor.
- SatCom:** skylabs.
- Earth Observation:** GOZDARSKI INŠTITUT SLOVENSKE GOŠČARNE FOLESTRE INŠTITUT, SINERGISE planet., Bias Variance Labs, AaltaLab, GeoCodis informacijski sistemi, GeoZS Geološki zavod Slovenije, University of Maribor, FLYCOM TECHNOLOGIES, ARCTUR, and SPACE-SI (SLOVENIAN CENTRE OF EXCELLENCE FOR SPACE SCIENCES AND TECHNOLOGIES).

Slovenian Space Strategy



Slovenia is uniquely positioned to capture part of the expanding space market



Diverse ecosystem of established and emerging space players



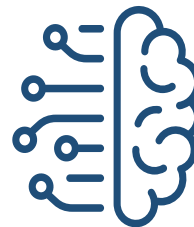
Strong academic sector & relevant research institutions



Excellent collaboration network with several European space institutions



Well-established innovation support capacities



Long-standing expertise in key technologies, incl. Industry 4.0



Solid cooperation frameworks with international industrial players

Slovenian Space Strategy



Slovenia is on an ambitious path towards becoming an important player in the space industry

Vision

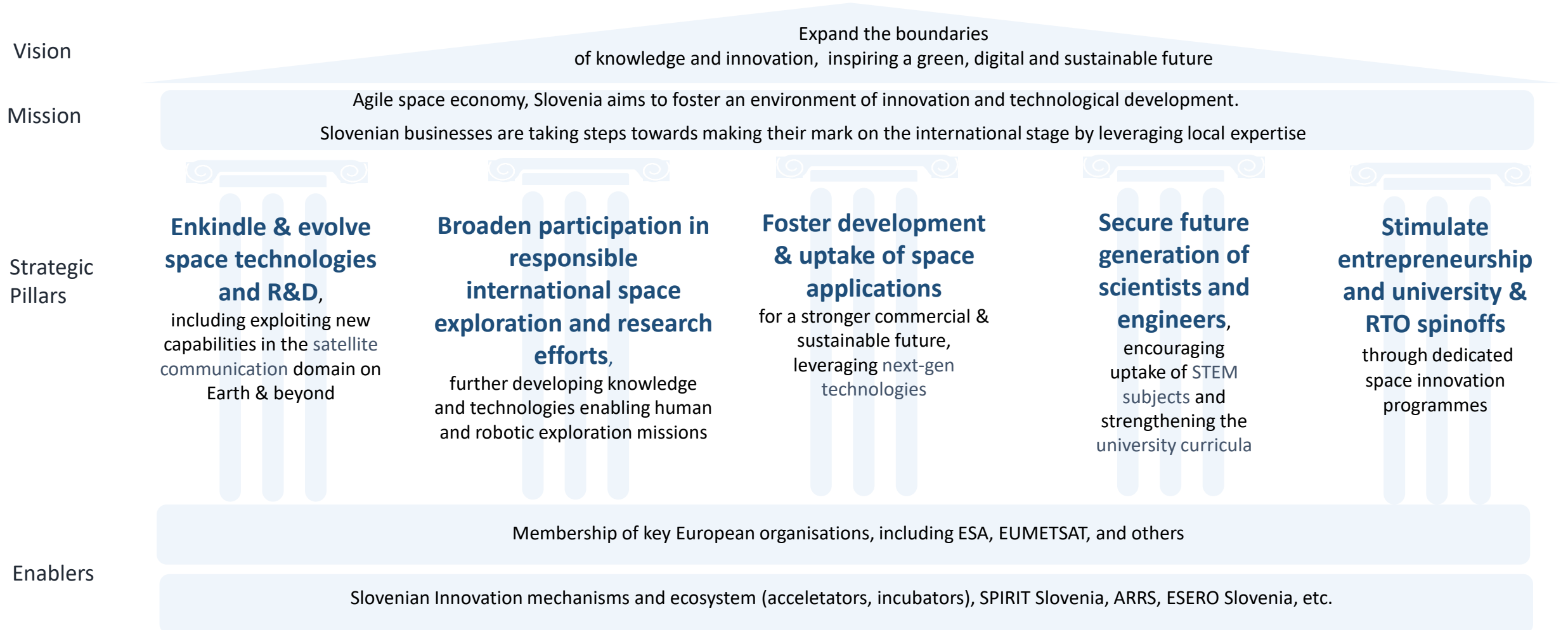
Slovenian space strives to **expand the boundaries of knowledge and innovation**, inspiring a **green, digital and sustainable future**.

Mission

Positioning itself as an agile space economy, Slovenia aims to foster an **environment of innovation and technological development** in order to rise up the ranks among its global peers.

Recognising this present inflection point, Slovenian businesses are taking steps towards making their mark on the international stage by leveraging local expertise.

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



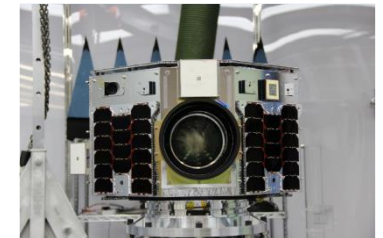
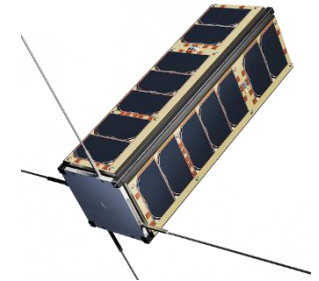
We already have global players



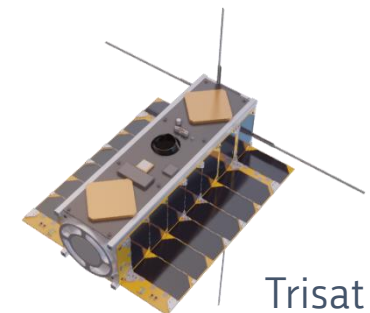
- ➔ **First Slovenian satellites launched into Space:**
 - *A satellite with interactive real-time video streaming and multispectral imaging at*
 - *2.8 m ground resolution,*
 - *One satellite provides valued ionizing radiation measurements from a Medium Earth Orbit at an altitude of approximately 6000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

To be continued ...

Trisat-R



Nemo HD

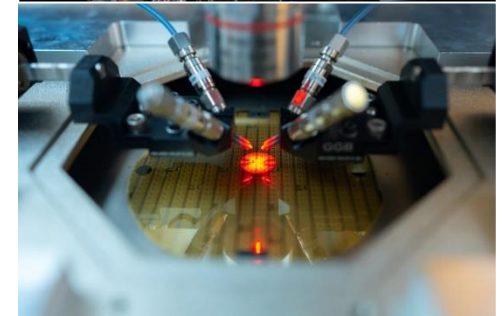
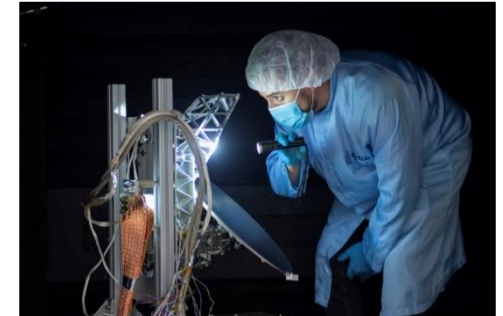


Trisat

We already have global players



- ➔ A Slovenian company has become as one of the **leading EO (Earth Observation) downstream players in the world.**
- ➔ A **leading company in the field of control systems** not only in the space industry (also in the nuclear industry, etc.).
- ➔ **Successful 3D printing company** gradually entered the field of space.
- ➔ A company, which provides **online mapping services**: detection and analysis of water surfaces and flooded areas in Africa.
- ➔ **Faculties and Research institutes** involved in international projects.



Noordung Center Slovenia



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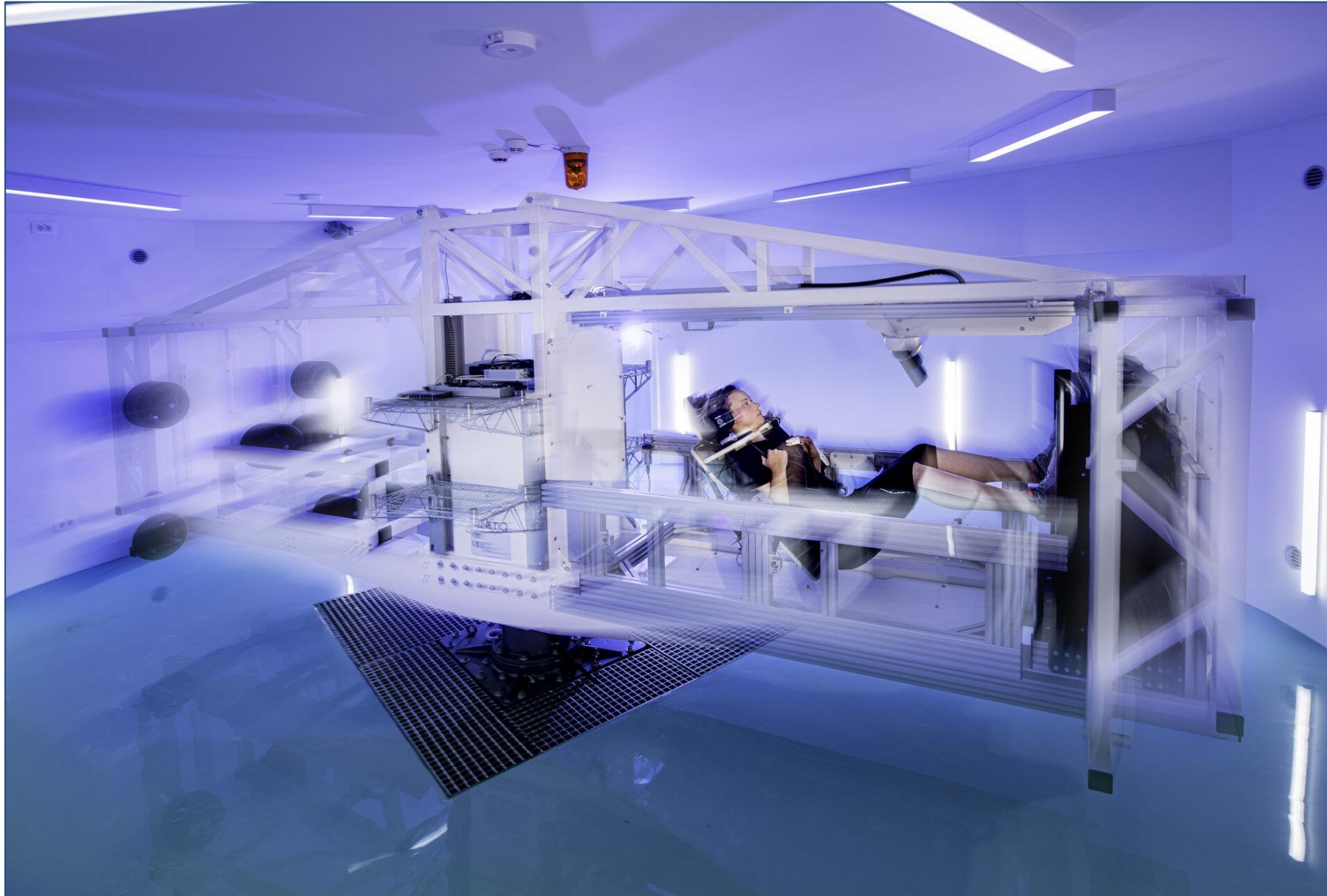
The unique place of Noordung Center is to add a cultural and humanistic contribution to human efforts to explore and understand the universe.



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.

Slovenian Space Office (SSO) – How we support companies and institutions

- Increased resources invested in the ESA and national framework
- Information about activities we carry out (mailing list)
- Informational meetings together with ESA - review of current programs
- Visiting companies and institutions (together with ESA)
- Workshops for companies, institutions, students
- Seminars and training in cooperation with ESA
- Info days:
Tenders and events (domestic and international) in the field of space
- Organization of business forums and outgoing business delegations
- Internship at ESA



The NEMO-HD satellite


Thank you




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Contact:

Slovenian Space Office
Ministry of the Economy,
Tourism and Sport
Kotnikova ulica 5
1000 Ljubljana
Slovenia

 + 386 1 400 35 47

 gp.mgts@gov.si
space.mgts@gov.si

<https://www.gov.si/en/state-authorities/ministries/ministry-of-the-economy-tourism-and-sport/about-the-ministry-of-economy-tourism-and-sport/slovenian-space-office/>