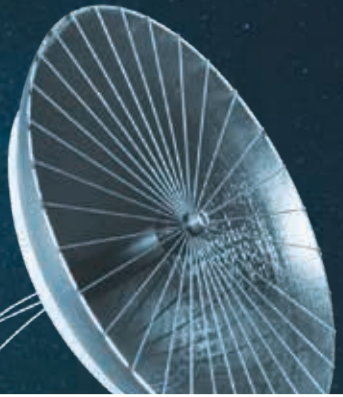
I FEEL SLOVENIA

Empowering business

GREEN.
CREATIVE.
SMART.



CATALOGUE OF SLOVENIAN SPACE INDUSTRY

COMPANIES AND RESEARCH INSTITUTIONS

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

The Slovenian Space Sector (SSS)

From Herman Potočnik Noordung's visionary book *The Problem of Space Travel: The Rocket Motor,* Slovenian science and industry have continuously developed new solutions for exploring the universe and making better use of space data across all areas of life.

Slovenian space activities are under the authority of the ministry responsible for the economy, which works closely with other relevant ministries and institutions to promote and raise awareness of civilian space activities, particularly among business community and academia. In April 2023, the Slovenian Space Office (SSO) was established within this ministry.

Slovenia has cooperated with ESA since 2009 and became its 23rd member on 1 January 2025.

Full membership in ESA brings many advantages, such as access to new programs that strengthen research, development, and commercialization of technologies, enhanced international cooperation and greater recognition of Slovenia in the space sector, opportunities for higher geographical returns of funds through projects for Slovenian companies, and contributions to sustainable development and digitalization, as well as the creation of new jobs.

ESA plays an important role in the development of the Slovenian space sector. Slovenia is increasing its contributions and joining new optional programmes. To date, Slovenia has subscribed to the following optional programmes of ESA: GSTP (General Support Technology Programme), Future Earth Observation, Digital Twin Earth, InCubed, HRE (Human Spaceflight and Robotic Exploration Programmes), CSS (Civil Security from Space) and BASS (Space Solutions and Business Applications). As of 1 January 2025, Slovenia also a member of the mandatory Science Programme.

Slovenian companies and scientific institutions are engaged in various civil fields of the space industry, with a particular focus on niche products and services, such as applications related to Earth observation and the processing of big data obtained from space for different purposes (agriculture, water monitoring, spatial planning, rescue and early warning operations, traffic etc.), control and measuring systems, new materials suitable for the harsh space environment, artificial intelligence, 3D printing, robotics, ground station equipment (antennas, domes, measuring instruments), micro coolers, innovative solutions in miniaturisation, microgravity facilities, on-board health monitoring of astronauts, micro- and nanosatellites, on-board computers and more.

In September 2020, Slovenia launched its first satellites, Nemo HD and TriSat, into LEO, followed by a third satellite, TriSat R, launched into MEO in 2022. With near real-time multispectral images and videos from space, Slovenia's first two satellites have marked significant progress, featuring new miniaturised equipment designed for the harsh space environment. The third microsatellite in MEO focuses on miniaturisation and robustness of equipment for use above LEO. A fourth satellite is scheduled for launch in 2025.

Slovenia has joined ESA's Human Spaceflight and Robotic Exploration Programmes (HRE) to help stimulate the involvement of new research institutions and industry in the space sector (recycling, 3D printing, robotics, AI, health, etc.). Additionally, the Jožef Stefan Institute conducts "bed rest studies" through the Laboratory for Gravitational Physiology, an ESA ground-based research facility located at the Planica Nordic Centre in Slovenia. In 2021, an upgraded short-arm human centrifuge (SAHC) was transferred to the Centre, making Slovenia one of only three ESA Member States with this facility. The results of these studies can be used to help prepare for human spaceflight and will play a key role in future missions.

In recent years, space activities have increasingly become the focus of industry and research institutions. For this reason, Slovenia's ambition is to involve new companies in space activities, working hand in hand with research institutions and universities.

The Slovenian Space Strategy 2023–2030 was prepared to guide and support the country's rapidly growing space industry, foster academic cooperation and strengthen ties with European space institutions and other international partners.

We consider the space sector as one of our priority areas and the Slovenian ministry responsible for the economy strongly supports the development of this segment. Cooperation between the Government, industry and research institutions is essential to keep pace with rapid developments in space technologies and international cooperation.

We must also highlight the importance of space technology spin-offs and the role these technologies can play in accelerating economic growth and facilitating the green and digital transition.

Slovenian companies specialise in demanding high-tech products and services, and they excel in global markets. We are confident that their services and solutions will also be of interest to foreign partners seeking to improve their performance and competitiveness in the space sector.

The catalogue of Slovenian space industry and research institutions is intended as a useful tool to help potential partners find the right match in Slovenia.

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AaltaLab

SHORT DESCRIPTION OF THE COMPANY

Aalta Lab is a company offering services in data analytics and HPC software development. We participate in European H2020 projects and projects for the European Space Agency, while also providing services to industrial clients and partners across various domains. More than 30 external experts in different areas work with us to improve the competitiveness of our industrial clients. We use innovative approaches to uncover insights hidden in data and the processes behind them. We use the knowledge gained to support well-informed decision-making.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Earth observation.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Data analysis,
- HPC software development,
- Development and implementation of algorithms,
- Development of simulators.

VALUE PROPOSITION / OFFERING

We provide AI/ML expertise and support for custom data analytics and AI/ML solutions. Depending on your needs, we can carry out analyses, develop models, and implement tailored solutions. Our team creates customised algorithms based on your specific requirements and integrates them in a way that fully leverages multi-CPU and multi-GPU infrastructure. With our support, customers receive optimised software designed to meet their exact needs – enabling faster results and allowing them to focus on more projects.

We combine technological expertise with industry-specific knowledge. Our extended team is currently developing several space-driven data intelligence products for climate and energy forecasting.

REFERENCES IN THE SPACE INDUSTRY

- RPS Experiment (European Space Agency – H2020-ESA-038.15),
- Hermes-SP (H2020-SPACE-2018),
- Gaia Transients (European Space Agency, University of Nova Gorica),
- Lifeline (European Space Agency – 4000132262/20/NL/GLC/hh),
- Définition d'un référentiel spatio-temporel autonome dans un constellation de satellites (TéSA ASSOCIATION and Paris Observatory),
- GAME (European Space Agency, University of Nova Gorica).

Aalta Lab d.o.o.

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5250 Solkan, Slovenia

Uroš Kostić

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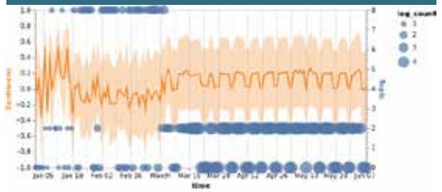
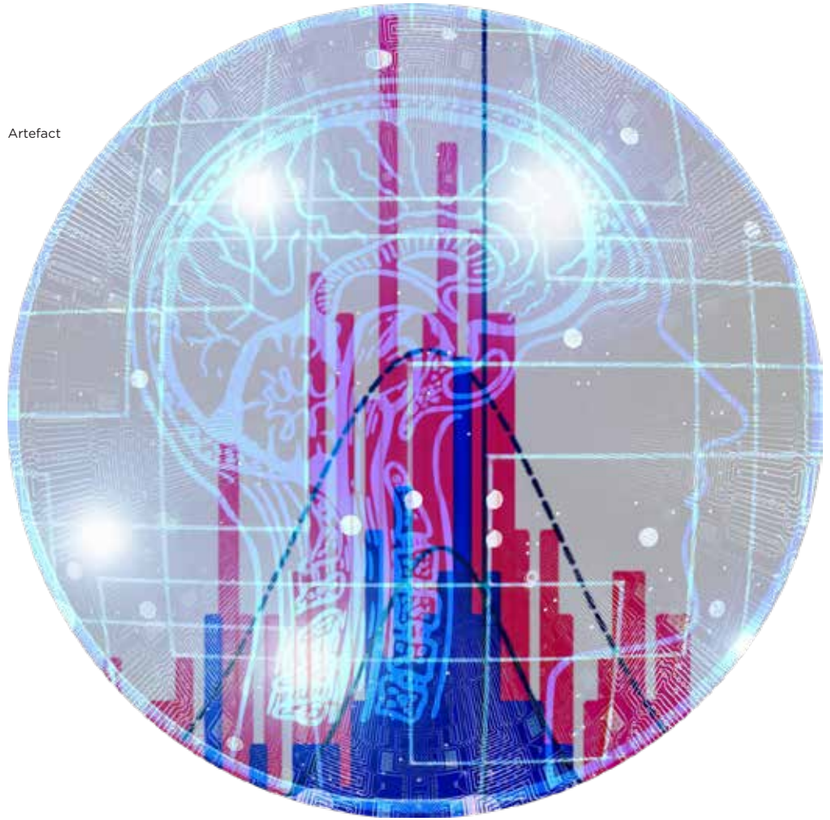
info@aalta-lab.com

www.aalta-lab.com

A plot presenting information and various results in graphical form.



Artefact



addiblast®

SHORT DESCRIPTION OF THE COMPANY

Addiblast provides advanced post-processing technology for the additive manufacturing industry, specializing in de-powdering, surface treatment, and powder recycling. Building on more than 60 years of experience in surface treatment from its parent company, FerroČrtalič, Addiblast focuses on creating solutions that support the efficiency and precision required in modern 3D printing workflows. The company's systems are designed to handle complex geometries while optimizing material reuse, contributing to reduced waste and more sustainable operations.

Addiblast's equipment is used in industries such as aerospace, automotive, medical, and others where high-quality finishing and dependable post-processing are crucial. The company's automated systems streamline key stages of the additive manufacturing process, ensuring efficient depowdering, thorough surface treatment, and effective powder recycling. By offering flexible, scalable solutions, Addiblast enables manufacturers to improve productivity while meeting strict quality standards. Their post-processing systems align with Industry 4.0 standards, providing easy integration and automation to reduce manual intervention and lower production times.

These solutions are particularly relevant in industries where precision and sustainability are priorities, such as aerospace and automotive. As additive manufacturing technology evolves, Addiblast is committed to supporting manufacturers with reliable and adaptable post-processing systems.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Launchers,
- Satellites,
- Space applications,
- Space exploration.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Automated and manual depowdering systems for 3D-printed metal parts,
- Surface treatment solutions for 3D-printed components,
- Powder recovery and recycling systems.

VALUE PROPOSITION / OFFERING

Addiblast offers reliable, efficient post-processing solutions for additive manufacturing, helping companies meet production demands while maintaining high standards of quality and sustainability. Our systems are designed to be flexible and scalable, suitable for handling a wide range of materials. With a focus on reducing production time and waste through automated depowdering and powder recovery, Addiblast provides solutions that fit into diverse manufacturing environments and align with Industry 4.0 initiatives.

REFERENCES IN THE SPACE INDUSTRY

- Rocket propulsion manufacturer,
- Space flight service provider,
- Rocket/Satellite launching provider.

Addiblast d.o.o. (FerroČrtalič)

Sela pri Dolenjskih Toplicah 47,
8350 Dolenjske Toplice, Slovenia

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www.addiblast.com

Year of establishment: 1964

Number of employees: 39

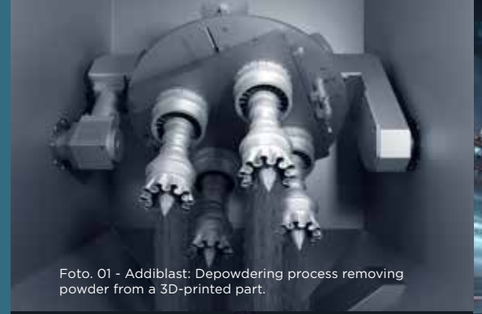

Foto. 01 - Addiblast: Depowdering process removing powder from a 3D-printed part.

Foto. 02 - Addiblast: Showcasing the MARS olution in 3D post-processing technology.

Foto. 03 - Addiblast: Comparison of a part before and after depowdering.

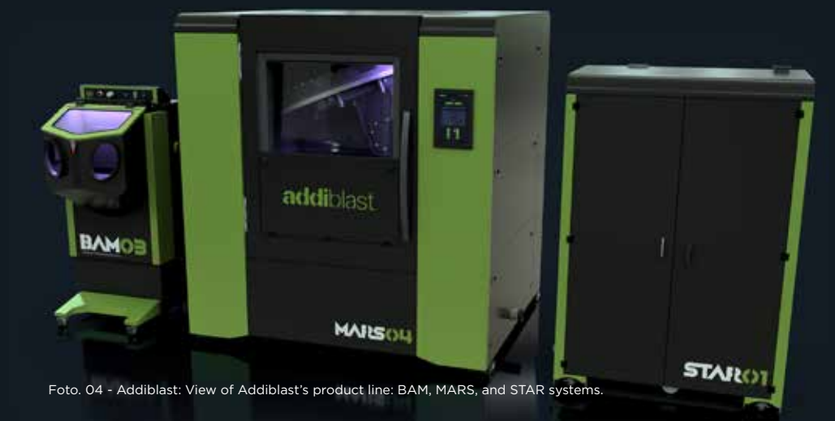

Foto. 04 - Addiblast: View of Addiblast's product line: BAM, MARS, and STAR systems.

SHORT DESCRIPTION OF THE COMPANY

Arctur is a privately owned company specialising in advanced and innovative IT solutions, with a strong focus on R&D. For over three decades, we have shared our passion for creativity and collaboration with the world from our headquarters in Slovenia, driven by a mission to develop innovative solutions that help make the world a better place.

We don't just follow change — we co-create it!

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Earth observation.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- **FLOWS** is an advanced data analytics application that helps destinations understand the flows patterns of visitors and residents. It integrates multiple data sources to provide a comprehensive insight. The system provides real-time monitoring and historical data analysis through an intuitive user interface with clear visualisations. FLOWS aims to help destinations optimise resource allocation and overall offer based on accurate numbers and flow patterns. Arctur recognises the potential of data, which is why ESA projects are the perfect entry point for using satellite data in tourism,
- **High-performance computing and Cloud services (SaaS):** Arctur has its own HPC and Cloud Computing infrastructure in a distributed, high-redundancy environment. The company has extensive experience in the deployment of complex IT systems for small and medium-sized enterprises (SMEs) in various sectors: from manufacturing to tourism and cultural heritage.

VALUE PROPOSITION / OFFERING

An interdisciplinary spirit is the cradle of innovation, where concepts, solutions and products come to life.
Our core strengths are creativity and innovation – merging research, science, art and business.

Project management is the driving force of our organisation, enabling continuous progress and the successful execution of operations regardless of their scale or complexity.

Software design and development – complex IT software design and development form the foundation that allows us to innovate and stay one step ahead.

REFERENCES IN THE SPACE INDUSTRY

- Project SD4TIM: implementing satellite Earth Observation data into a Tourism Impact Model.

Arctur computer engineering d.o.o.

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5000 Nova Gorica, Slovenia

Urška Starc Peceny, PhD

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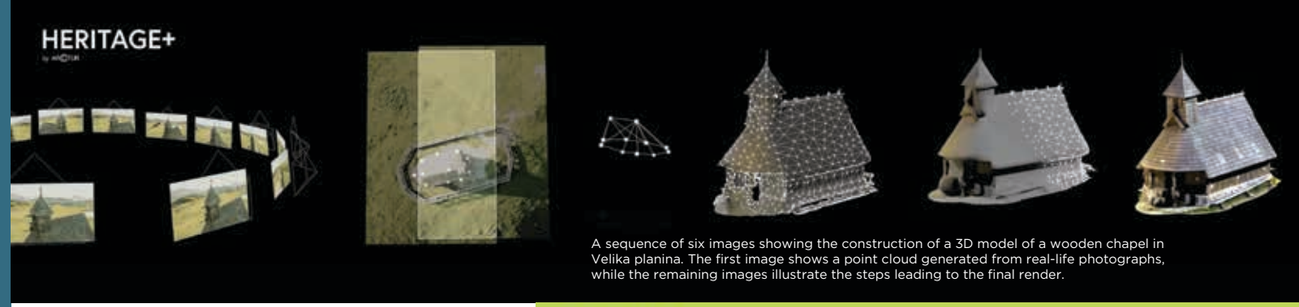
info@tourism4-0.org
urska@arctur.si

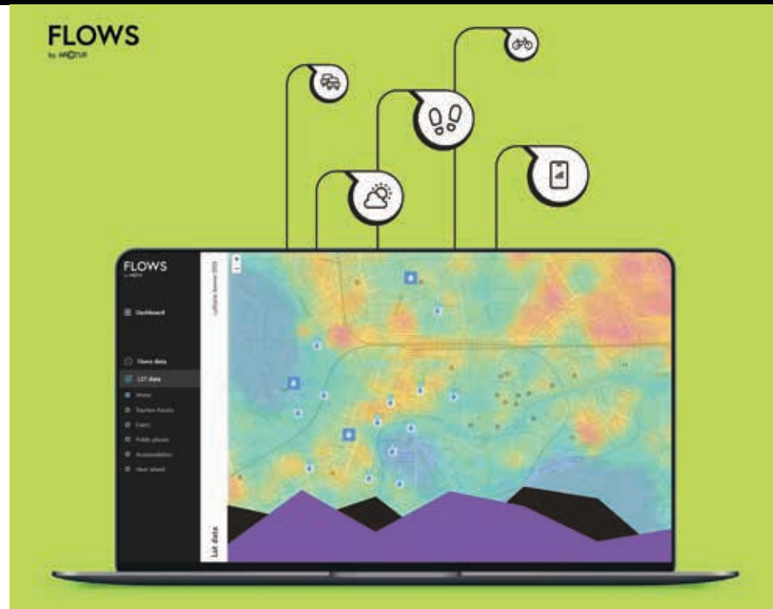
www.arctur.si

Year of establishment: 1991

Number of employees: 55



A sequence of six images showing the construction of a 3D model of a wooden chapel in Velika planina. The first image shows a point cloud generated from real-life photographs, while the remaining images illustrate the steps leading to the final render.



The image shows the FLOWS application by Arctur, visualizing tourist flow data on a color-coded map with icons representing different data sources, such as traffic, weather, and foot traffic.

BALMAR

SHORT DESCRIPTION OF THE COMPANY

BALMAR d.o.o. is a privately owned small-sized enterprise (SME) providing services and R&D activities in the aerospace, space, biomedicine and automotive (tooling) industries. The company's main area of activity is advanced manufacturing / additive manufacturing, including prototyping, technology and product development, industrial implementation, and technology promotion.
Key business partners in the space sector include the European Space Agency (ESA), Beyond Gravity Germany GmbH, Thales Alenia Space Italia S.p.A., Fraunhofer IWS, and Puli Space Technologies Ltd.
Another area of activity involves aviation services, including the organisation and management of operations for airlines and other flight organisations, in accordance with EASA regulations.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Satellites (structures),
- Launchers,
- Space exploration,
- Space mining.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Development of advanced metal products for space structures, space mechanisms and rovers,
- Additive manufacturing of metal products for space structures, space mechanisms and rovers,
- Classical machining of metal products for space applications,
- Advanced joining solutions for structural elements (example of metal fitting),
- Effective repair solutions for space applications,
- Improvements and upgrades of manufacturing technologies for space applications,
- R&D and testing of metal materials for space applications,
- Function-gradient metal materials for advanced space applications (example of Ti-TiC MMC),
- In-Situ Resource Utilization (ISRU).

VALUE PROPOSITION / OFFERING

BALMAR provides a wide range of products and services for the space and aerospace industries. A major advantage is the company's flexibility in product design and manufacturing processes, enabling the development and production of space products with higher added value.

REFERENCES IN THE SPACE INDUSTRY

- ESA: Development, Prototyping and Manufacture of special Metal Components for Space Applications with Advanced Laser Technology LENS (LENS FOR SPACE,
- ESA: Assessing the Use of Advanced Manufacturing to Improve and Expand Space Hardware Capabilities,
- ESA: Secondment of Dr. Simon Malej at ESA as the Advanced Manufacturing Engineer in the Structures and Mechanisms Division (TEC-MS), ESTEC, the Netherlands (2020-2023),
- ESA: New Approach to Improve Mechanical and Wear Resistance Properties by Hybrid Addi–tive Manufacturing of Ti-Alloy (Ti-TiC MMC),
- ESA: Advanced Manufacturing in Space combining Additive Manufacturing and Reduction for direct resource conversion to metallic parts (AMScAMR).

BALMAR d.o.o.

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Mr. Matej Balažic, CEO

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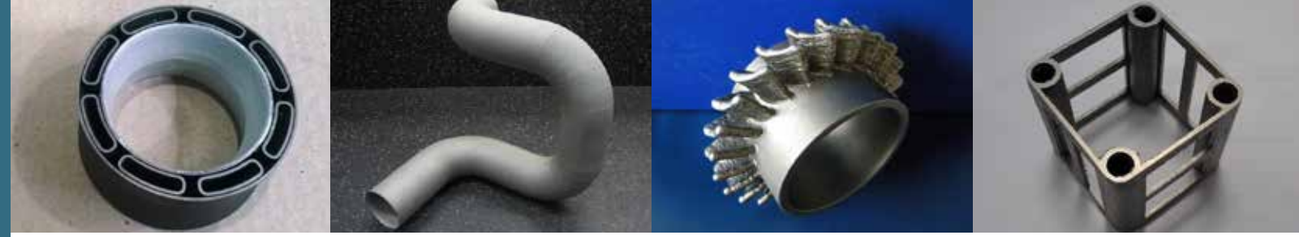
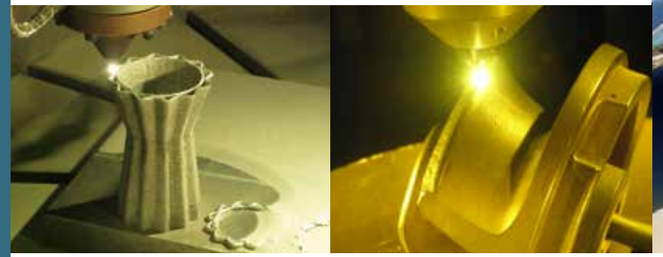
Year of establishment: 2008

Number of employees: 6



The image shows the FLOWS application by Arctur, visualizing tourist flow data on a color-coded map with icons representing different data sources, such as traffic, weather, and foot traffic.

Hybrid manufactured space components (advanced metal fitting design).



Prototyping and repair solutions for space application.

Company aviation service.

SHORT DESCRIPTION OF THE COMPANY

Bias Variance Labs is a research-led SME founded by experts with extensive experience in developing advanced AI solutions for modelling and analysing complex systems in space research and technology. This combination of experience and expertise provides a unique, holistic perspective on the data-to-discovery and decision-making process, enabling the successful development of solutions for real-world challenges in the space sector. Our solutions are based on state-of-the-art, explainable AI approaches, leveraging the latest advancements in the field.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Earth Observation,
- Satellites,
- Space Applications,
- Space Exploration.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

Earth Observations:

- AiTLAS (AI Toolbox for Earth Observation) is an open-source AI4EO ecosystem that facilitates exploratory and predictive analysis of EO imagery. It supports data cataloging, AI model development, and analyses. Unique benefits include (i) easy customization for diverse EO tasks, (ii) a modular architecture for seamless integration of new data and models, and (iii) user-friendly functionality that accelerates advanced data analysis.
- The AI for Quality Control (AI4QC) platform collects data from the Copernicus and Sentinel missions.

Spacecraft Operations:

- GalaxAI is a novel, easy-to-use AI toolbox for spacecraft health monitoring. Applications include predicting Mars Express's thermal power consumption to enhance mission planning and science output.
- AiSTRA improves spacecraft anomaly investigation via expert-in-the-loop Knowledge Graph reasoning, enabling better description and understanding of anomalies across data sources and subsystems

VALUE PROPOSITION / OFFERING

Bias Variance Labs delivers innovative deep-tech solutions that cover every stage of the data lifecycle – from data storage and stewardship to knowledge representation, machine learning, data analysis and visualisation. We are committed to open data, open source and open science, offering flexible, actionable and intuitive designs that empower users to explore, understand and leverage data with ease.

REFERENCES IN THE SPACE INDUSTRY

- FAIR-EO - FAIR, Open and AI-Ready Earth Observation Resources (Horizon Europe),
- AI4QC: The Artificial Intelligence for Quality Control,
- AiSTRA: Understanding spacecraft anomalies with knowledge graph reasoning,
- GalaxAI: Machine learning for space operations,
- AiTLAS: Artificial Intelligence for Earth Observation,
- TII ALS ML: Automatic detection of archaeological features from LiDAR data using machine learning techniques (TI Ireland).

Bias Variance Labs, d.o.o. (BVLabs)

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dr. Dragi Kocev

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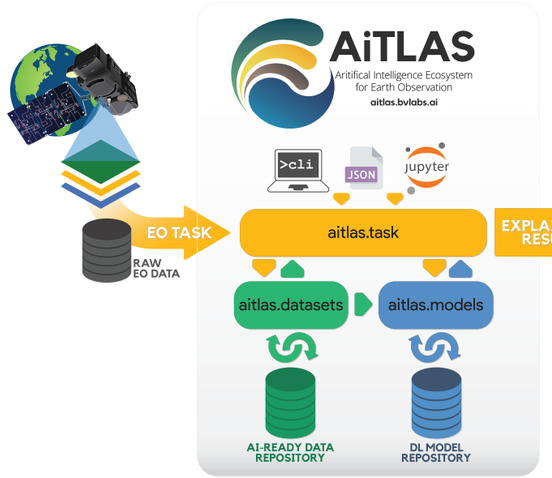
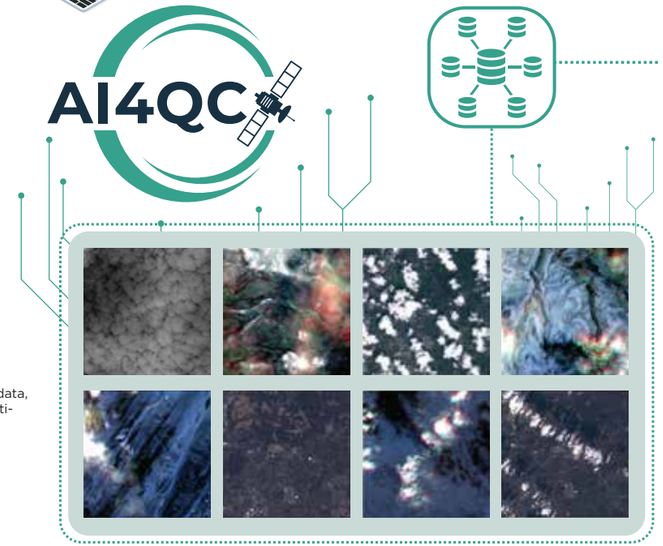
dragi@bvlabs.ai

www.bvlabs.ai



AiTLAS (Artificial Intelligence Toolbox for Earth Observation) is an open-source AI4EO ecosystem that facilitates exploratory and predictive analysis of Earth observation imagery.



The AI4QC platform offers AI-ready datasets with semantically rich metadata, designed for automated clouds and anomaly detection in Copernicus Sentinel-1 and Sentinel-2 missions.

SHORT DESCRIPTION OF THE COMPANY

The Centre for Computational Continuum Mechanics (C3M) is a high-tech company specialising in the development of customised numerical solutions based on the finite element method (FEM). These solutions are applied in inverse modelling, sensitivity analyses, and optimisation for Multi-field, Multi-scale, Multi-body, Multi-phase, and Multi-objective (M5) problems. C3M follows an advanced software development strategy based on a symbolic approach to automatic code generation, enabling the creation of solutions for a wide range of industrial and scientific challenges.

C3M has expanded into high-tech fields such as biomechanics, geomechanics, chemical engineering, pharmaceutics, the food industry, and aerospace. The company has participated in numerous EU projects, including H2020, FP7, FP6, and Eureka, as well as national initiatives in Slovenia, and has published over 100 papers in scientific journals and conference proceedings. From 1992 to 2002, C3M's growth was driven by material forming technology, with subsequent investments in M5 models contributing to expansion in nanotechnology, biotechnology, and aerospace.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Launchers,
- Life in space,
- Satellites,
- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Multi-scale digital twins of a satellites,
- Digital twins of advanced manufacturing processes,
- Reliable modelling of functionally graded materials,
- Optimization of material structure at micro level,
- Thermal digital twins,
- Biomechanical modelling,
- Environmental digital twins.

VALUE PROPOSITION / OFFERING

The company has a high level of expertise in developing industrial digital twin projects, where models are fully integrated into the production systems of client companies. The model setup and analysis are fully automated, with all required data retrieved from existing databases. Upon completion, analysis reports are generated and added to the databases automatically.

REFERENCES IN THE SPACE INDUSTRY

- ESA-SURE AO 021 (2006): In vivo biomechanical measurements of human skin properties under accelerated aging conditions during ISS mission (SKIN-B),
- ESA-PECS AO/1-7708/13/NL/KML: Inverse system for evaluation of biomechanical properties of human skin (BioInSys),
- ESA-RPA: How to better utilize micro structures of new materials to improve space missions reliability (Micro-Mat4Space),
- ESA-RPA: Modelling platform for spaceflight associated neuro-ocular syndrome biomechanics
- (BioMechSANS),
- Environmental Digital Twin (in collaboration with Space-SI) with application to flood modelling in Kenya.

C3M d.o.o.
Centre for Computational Continuum Mechanics

Tehnološki Park 21,
1000 Ljubljana, Slovenia

dr. Tomaž Šuštar

+386 59 082 010

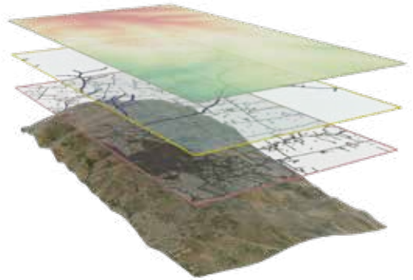
info@c3m.si

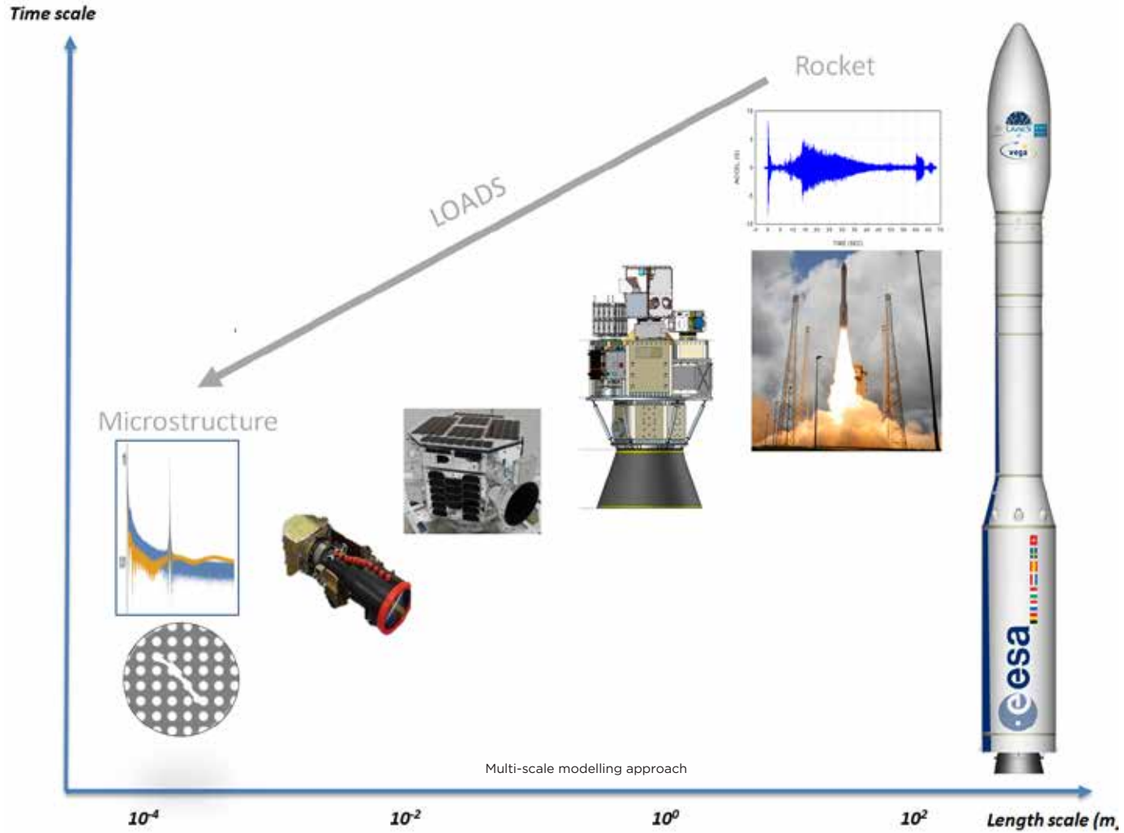
www.c3m.si

Year of establishment: 1992

Number of employees: 5

A plot presenting information and various results in graphical form.





Multi-scale modelling approach

C-ASTRAL
AEROSPACE

SHORT DESCRIPTION OF THE COMPANY

C-Astral Aerospace specialises in unmanned aerial systems (UAS) and sensors, with operations dating back to 2007. Known for its Bramor line and the award-winning SQA eVTOL UAS, the company delivers rugged, efficient and user-friendly systems adaptable to a wide range of applications.

R&D

C-Astral invests heavily in innovative UAS technologies, including C3P software for mission planning, the Astraltrack antenna for extended range, and anti-jamming systems for GNSS-denied environments. In 2025, the SQA2 will launch with enhanced batteries, sensors and AI-based target recognition capabilities.

CUSTOMER SERVICE

We prioritise client needs, offering tailored solutions based on initial consultations. Operator and maintenance crew training is provided by certified C-Astral personnel, either in Slovenia or at the client's location.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Autonomous, small lifting-body reusable re-entry vehicles,
- Satellite telecommunications / UAS mesh networks,
- High-detail Earth terrain mapping (RGB, LiDAR, Multispectral),
- High-altitude UAVs for planetary simulation,
- Autonomous aerial vehicles for low-pressure/low-density atmospheres (e.g., Martian aerial vehicles).

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Development of small UAVs with high-endurance, autonomous capabilities,
- Advanced technology integration (autopilots, digital comms, space data applications),
- Aerodynamics and autonomy expertise for reusable spacecraft,
- Remote sensing and payload integration for space exploration,
- Contribution to autonomous space technologies.

VALUE PROPOSITION / OFFERING

C-Astral brings extensive experience in UAV and aerospace technology, with capabilities that are readily adaptable to space exploration. Our expertise in aerodynamics and autonomy contributes to the development of cost-effective, reusable spacecraft. We are highly skilled in customisation and rapid adaptation to specific client needs.

REFERENCES IN THE SPACE INDUSTRY

C-Astral applies satellite data and solar cell technologies originally developed for space. Notable projects include AI-powered UAV forestry analysis, aerial surveys for flood damage assessment, and spectral analysis in agriculture.

Research Contributions:

- Solar energy use in aerial mapping,
- Modular space architecture for planetary exploration,
- Interplanetary space vehicle design concepts.

C-astral d.o.o.

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Nejc Trošt

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www.c-astral.com/en

Year of establishment: 2007

Number of employees: SME <50

SQA eVTOL Unmanned Aircraft System in flight (C-Astral SQA unmanned system 1)

SQA eVTOL Unmanned Aircraft System in flight – left with nose mount gimbal, right with belly mount gimbal camera (C-Astral SQA unmanned system 2)

SQA eVTOL Unmanned Aircraft System received front view with nose mounted EO/IR/LI gimbal camera (C-Astral SQA unmanned system 4)

SQA eVTOL Unmanned Aircraft System perspective view (C-Astral SQA unmanned system 5)

SQA eVTOL Unmanned Aircraft System modular assembly view with main components (C-Astral SQA unmanned system 6)

SQA eVTOL Unmanned Aircraft System received Best of The Best Red Dot design award in 2024 (C-Astral SQA unmanned system 3)

SQA eVTOL Unmanned Aircraft System received Best of The Best Red Dot design award in 2024 (C-Astral SQA unmanned system 7)

SQA eVTOL Unmanned Aircraft System received Best of The Best Red Dot design award in 2024 (C-Astral SQA unmanned system 8)

CGSLABS

SHORT DESCRIPTION OF THE COMPANY

At CGS Labs, we develop digital tools and services for the design, construction, maintenance and management of transport infrastructure. Our building information modelling (BIM) solutions already incorporate the dimension of maintenance (6D), in addition to visualisation (3D), execution time (4D) and cost (5D).

We integrate sensor networks with the digitalisation of the built environment, enabling more comprehensive infrastructure management. Our advanced weather and road weather information systems use a range of parameters to improve road safety, support informed decision-making and promote more systematic adaptation to climate change.

CGS Labs is an SME with roots dating back to 1990. As a research team registered in the fields of environmental and spatial information science, we participate in R&D projects at both the national and EU level.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Earth observation,
- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Software development for transport infrastructure design (roads, railways, water courses...),
- Building information modelling,
- Digital twins of transport infrastructure,
- Environmental monitoring (hydrometry and meteorology),
- Warning and prediction tools for weather hazards on the roads,
- Research and development activities.

VALUE PROPOSITION / OFFERING

The products developed by CGS Labs enhance the competencies of professionals working in public infrastructure, construction and the increasingly important field of environmental monitoring. Those seeking to improve their performance and make optimal use of time and resources choose solutions that integrate BIM (Building Information Modelling), sensor networks and modern IoT concepts.

Our solutions establish a new level of cooperation, integration and co-creation – helping to build a safer and more resilient future.

REFERENCES IN THE SPACE INDUSTRY

- ESA-RPA (2023) Assessing the potential of Landsat satellite imagery for Road Weather Information Systems.

CGS Labs d.o.o.

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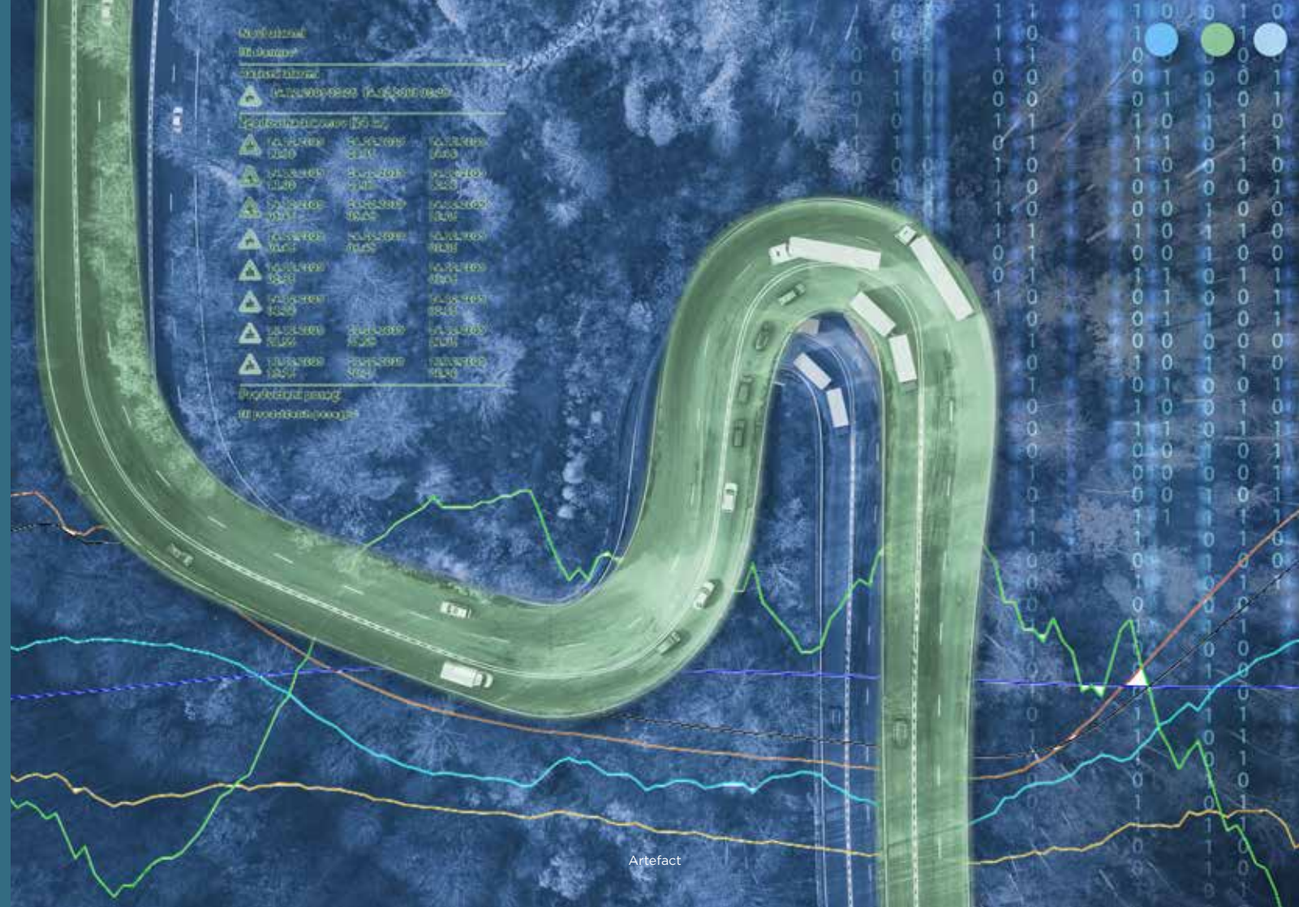
www.cgs-labs.com

Year of establishment: 1990

Number of employees: 20



Artefact

COSYLAB

SHORT DESCRIPTION OF THE COMPANY

COSYLAB is an EU-headquartered engineering company with worldwide operations, employing 300+ people. Specialised in control systems software in various high-tech industries, COSYLAB has been collaborating with ESA and primes in the software domain to support space missions.

With vast engineering expertise, COSYLAB helps companies in the space sector establish their software systems faster to shorten the time needed to market and lower business risk.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Launchers,
- Satellites,
- Space applications,
- Large telescopes and telescope arrays.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Engineering services for EGSE development and system integration (Software & Electronics),
- Control systems engineering services for mission pre-launch and operations phases,
- ECSS-compliant project execution; expertise in space-specific communication protocols, space-system data-models preparation and editing, MCS software vertical column expertise, ground station system integration, AIT, etc,
- Development of telescope and ground station systems software.

VALUE PROPOSITION / OFFERING

- Optimisation of end-product complexity, risk and cost from the very early stages of requirements engineering and design,
- Subject-matter experts from both space systems and software engineering,
- Delivery of complete documentation according to the required standards and processes,
- Worldwide support, remote and on-site, with the possibility to tap into a large pool of experienced engineers,
- Clients remain focused on their core business. Cosylab is responsible for the timely delivery of software systems,
- Clients gain competitive advantage by shortening their time-to-market and by decreasing their business risk,
- Execution of large-scale projects (10+ person-years).

REFERENCES IN THE SPACE INDUSTRY

- Airbus Defence and Space: Development of the system for remote control and diagnostics of the Optical Ground Station,
- OHB Italia: Cooperation in a software system for FLYEYE – an extremely wide field of view telescope,
- ESA/ESOC: Integration of various communication bus technologies (MIL-STD-1553, CAN/CANopen, SpaceWire) into the EGS-CC for AIT use cases,
- European Ground Segment - Common Core (ESA): end-to-end system validation,
- Design and development of the Cosylab Testing Facility (C-TF) – an infrastructure for testing and validating satellite On-Board Software,
- Design of systems software and services for large telescopes and telescope arrays, such as ALMA, ELT, CTA and SKA

COSYLAB d.d.

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business development manager

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www.cosylab.com/space

Number of employees: 300+

Automated 'Flyeye' telescope, inspired by insect eyes, scans the sky nightly to detect hazardous asteroids, enhancing Europe's asteroid impact monitoring.

Credit: A. Baker/ESA

Several of the 12-metre antennas that comprise a part of the Atacama Large Millimeter/submillimeter Array (ALMA) peer at targets in the night sky. The recognisable glow of the Milky Way cuts across the image amongst a sea of stars.

Credit: A. Duro/ESO

SHORT DESCRIPTION OF THE COMPANY

DBS Engineering presents a new generation of state-of-the-art inflatable and timber halls for sports, industrial, and other specialised purposes. In the development and design of these products, the company prioritises energy efficiency in extreme climate conditions and the creation of eco-membrane systems that enable maximum energy savings.

Over the years, DBS has developed many prominent air-supported structures, including the largest air dome in Eurasia and several architecturally innovative air domes. These structures incorporate numerous systems pioneered by DBS, such as the smart dome system, custom lighting solutions, and advanced membrane applications.

DBS Engineering is particularly proud to have collaborated with companies involved in the development of space settlements. One of the company's key achievements and ongoing focuses is the development of technical fabrics for use in constructing living habitats in space. More recently, the company has also been involved in the development of HVAC technology for closed ecosystems.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space exploration,
- Life in space,
- Space settlement.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Air-supported structures,
- Custom technical tensile membranes/fabrics for space habitats,
- Development of technological solutions for life in space.

VALUE PROPOSITION / OFFERING

- Innovation in the field of air-supported structures with more than 25 years of experience,
- Over 1,000 completed projects and satisfied customers,
- Precision and outstanding quality,
- Advanced HVAC systems for space development projects,
- Innovative membrane solutions for air dome structures and space habitats,
- Fully customized air dome design and development,
- First-class 24/7 customer support.

DBS Engineering

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1000 Ljubljana, Slovenia

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info@dbs-engineering.com

https://dbs-engineering.com

Year of establishment: 2009

Number of employees: ≈15

Figure 1: Visualization of our inflatable space habitat system on the surface of Mars. The prototype in the picture was set up and tested at DBS's headquarters this year.

Figure 2: DBS Engineering team presenting their newest tensile membrane, HVAC technology and solar panel application at the FSB international fair in Köln, Germany.

Figure 3: Unique transparent dome installed and developed by DBS engineering, which was set up for a fashion show in Greenwich, London.

Figure 4: DBS Engineering headquarters in Ljubljana, Slovenia.

DEWESoft®

SHORT DESCRIPTION OF THE COMPANY

Dewesoft is a leading provider of data acquisition (DAQ) and analysis solutions. The company offers a wide range of aerospace testing solutions – from standard data recording, structural dynamics, rotating machinery analysis and acoustic testing, to more specialised applications such as ground station telemetry.

Its distributed, rugged DAQ hardware and flexible software meet the demanding requirements of spacecraft and satellite testing – whether in the air, in space or on the ground, including proving grounds, wind tunnels, vibration shakers and acoustic chambers.

Dewesoft also provides solutions for launchpad instrumentation and the testing of components and engines, as well as experimental flight testing and satellite testing. These include data recording, FFT analysis, power analysis, order tracking, balancing, modal testing, sine reduction, vibration analysis, fatigue analysis, and temperature-stress testing.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Launchers,
- Satellites,
- All types of measurements performed on space products and components.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- SIRIUS data acquisition instruments – a versatile, powerful, high-dynamic USB and EtherCAT measurement system, which can connect with any signal and sensor. In addition, the data acquisition system combines high-end signal conditioning amplifiers and real-time EtherCAT data bus for low latency data output capability to 3rd party EtherCAT real-time controllers like Syclone Clemessy, Labview, and others.
- DewesoftX software – a software suite storing, analysing and visualising data from multiple sources like PCM, Chapter 10, iNET, ARINC 429, MIL-STD-1553 and in-depth vibration analysis of modal analysis, GVT and many other specialised software modules.

VALUE PROPOSITION / OFFERING

With proven performance and test records Dewesoft data acquisition systems are used in mission critical applications. Designed to be modular and extendable, our equipment is suited for testing and measurement in a wide range of applications and in all kinds of environments. All DAQ units come with a seven-year warranty and free lifetime software upgrades.

REFERENCES IN THE SPACE INDUSTRY

Cooperation with:

- ESA,
- NASA,
- DLR,
- SpaceX,
- Clemessy,
- Boeing,
- Virgin Galactic and others.

Dewesoft d.o.o.

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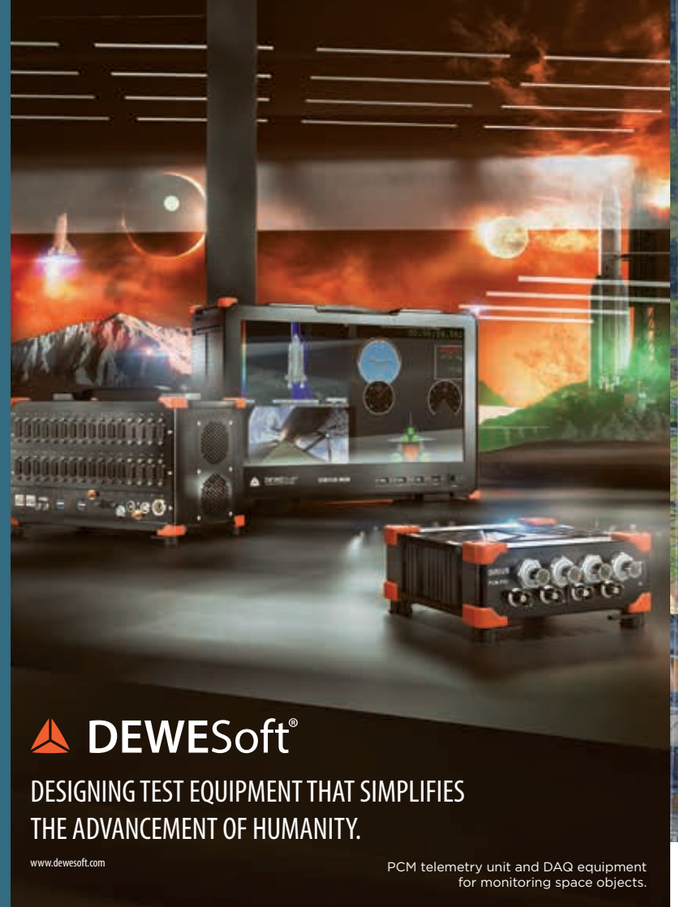

PCM telemetry unit and DAQ equipment for monitoring space objects.

Rocket engine testing for Ariane 6 made with Dewesoft measuring and monitoring equipment with 2000 sensors integrated with SYCLONE controller (Clemessy)

DUOL

SHORT DESCRIPTION OF THE COMPANY

Today, DUOL is a global leader in the air dome industry, with more than 2,000 covered structures worldwide. Its custom-designed air domes, air-inflated, and frame structures are built to meet all local standards and requirements, making DUOL a trusted partner for investors across a wide range of sectors – from sports, events and entertainment to industry, warehousing, agriculture, the military and space.

With numerous high-profile references, extensive experience and a skilled team, DUOL is well-positioned for a bright future. Air-supported structures have proven to be an ideal solution, offering a faster and more cost-effective alternative to traditional construction – whether for temporary or permanent coverage.

In short, there's still plenty of ground left to cover – both on Earth and beyond – as opportunities for membrane structures expand into the realm of space exploration.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Earth observation,
- Space settlement (development phase),
- Life in space.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

Design, manufacture and installation of Radomes and other:

- Sports construction engineering:
  - Design, manufacture and installation of air supported structures & wooden/steel construction, covered with membrane.
- Military, civil protection, lifeguard service and other terrain users:
  - Modular pneumatic tents,
  - Temporary shelters,
  - Air domes.
- Industrial production or storage halls:
  - Temporary or permanent warehouses,
  - Mobile and modular storage systems,
  - Landfill AirDomes.

VALUE PROPOSITION / OFFERING

DUOL is a world-renowned company in the field of inflatable structures. It maintains its leading position in the industry through cutting-edge, state-of-the-art solutions.
In recent years, the company has also become a pioneer in the space sector, contributing to programmes involving inflatable Radomes and inflatable Mars habitats.

REFERENCES IN THE SPACE INDUSTRY

DUOL Radomes – envelope protection with exceptional RF performance for antenna systems. These radomes enhance pointing and tracking accuracy and allow continuous 24/7 operation, regardless of weather conditions.

DUOL d.o.o.

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Gregor Rijavec,
Head of Global Partner Network

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www.duol.eu

Year of establishment: 1992

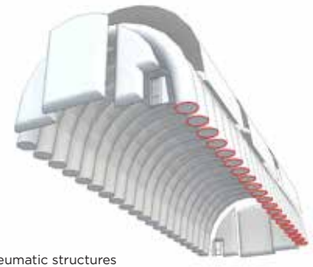
Number of employees: 40

Air dome as logistics center: Main distribution center for Saudi Post

DUOL provides the most sustainable air domes

DUOL radome protects antenna systems while providing outstanding electromagnetic transmission performance throughout a broad range of frequencies.

Inflatable Mars habitat: One step closer to life on Mars



Pneumatic structures

Radome – exterior view

ELEP ELECTRONICS

SHORT DESCRIPTION OF THE COMPANY

ELEP Electronics is a small company active in the field of advanced radio communication technologies. Its strengths lie in innovative R&D, proven expertise in RF/microwave engineering, and high-performance hardware development.

ELEP actively participated in Slovenia's first microsatellite mission, NEMO-HD (SPACE-SI, 2020). The company designed and manufactured an X-band high-speed data downlink transmitter payload for the NEMO-HD spacecraft, which reached TRL 9 in 2021.

ELEP focuses on the development of advanced spacecraft communication (sub)systems and ground-segment satellite technologies (SATCOM).

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Spacecraft and launcher communication payloads,
- Ground station systems,
- Satellite communications,
- Satellite developers and integrators.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Communication devices (transmitters, receivers, converters),
- Custom communication solutions and related support systems,
- Antenna design and development,
- Ground station antenna autotrack dual-band feeds,
- RF hardware: S- and X-band LNAs, synthesizers, level detectors, etc.

VALUE PROPOSITION / OFFERING

- Flight heritage and proven expertise: TRL9 achieved in 2021,
- Innovative and efficient hardware development,
- Rugged and reliable RF (sub)systems,
- 20+ years of RF, microwave and millimetre-wave developments.

REFERENCES IN THE SPACE INDUSTRY

- Space Flight Laboratory, University of Toronto (UTIAS), Canada and SPACE-SI, Slovenia – delivery of a X-band data transmitter payload (flight model) for the NEMO-HD mission,
- TRL9 achieved in May 2021 (X-band transmitter payload),
- SPACE-SI, Slovenia – delivery of a dual-band S+X-band autotrack feed for a 5.4m ground station antenna, in addition to various RF processing hardware (X-band downconverters, X-band LNAs, S-band downconverters, S-band LNAs, cavity filters, precision RF power detectors, UHF transmitter controllers, etc.).

ELEP ELECTRONICS

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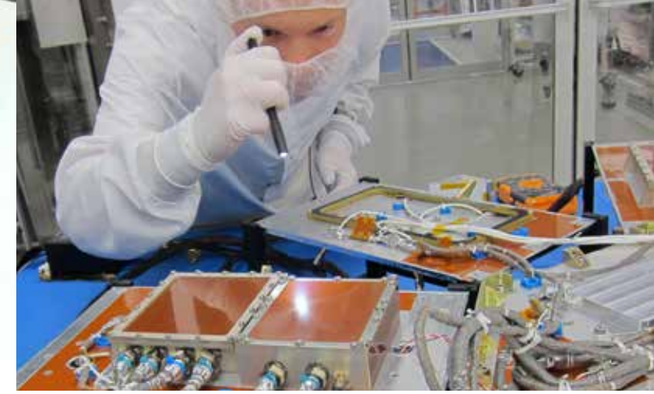
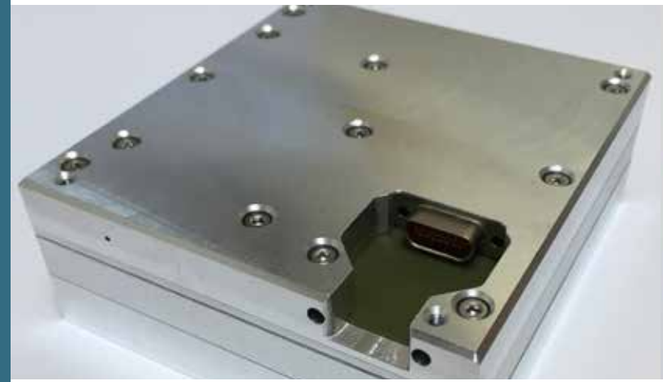
ELEP ELECTRONICS achieved the first flight heritage in 2021 with its X-band data transmitter payload on-board the first Slovenian microsatellite NEMO-HD (SPACE-SI, 2020). This TRL9 payload continues to deliver the data to the Earth after more than two years of in-orbit operation.



The ELEP ELECTRONICS X-band data transmitter payload (TRL9, 2021) integrated in the flat-sat of the first Slovenian microsatellite NEMO-HD (SPACE-SI, 2020).



The ELEP ELECTRONICS second generation X-band data transmitter payload capable of up-to 200Mbit/s data rate features a compact size that fits to the nanosatellite class.

ELEP ELECTRONICS also designs and manufactures advanced ground-station RF systems, such as the above autotrack dual-band S+X-band feed for the parabolic-mirror antennas used in most LEO ground stations.

SHORT DESCRIPTION OF THE COMPANY

Flai was founded in 2022 with a mission to automate the extraction of custom user-driven products from Earth observation datasets by deploying state-of-the-art AI solutions. Our main focus is the analysis and classification of LiDAR point cloud data. Generated products can be used for general large-scale LiDAR mapping surveys, power-line monitoring, forestry inventory production, infrastructure asset mapping, digital elevation model creation and many other applications.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Satellites,
- Space applications,

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

Flai web application:

- Intuitive browser for point cloud, raster and vector datasets,
- Point cloud annotation tool for manual classification,
- Running custom workflows for the production of usable end products,
- Making ready-to-use AI solutions available to everyone,
- Retraining our AI models for user-specific requirements,
- Scalable operations depending on customer needs.

Research activities:

- Data analysis and generation of comprehensive training sets,
- Development of AI models,
- Usage of Machine learning for the development of the customised earth observation services.

VALUE PROPOSITION / OFFERING

Flai is one of the first companies in the world to offer customisable automatic processing of LiDAR point clouds and imagery. Such automatic processes decrease the need for currently common manual annotation work, speeding processing times and saving time and money.

Flai d.o.o.

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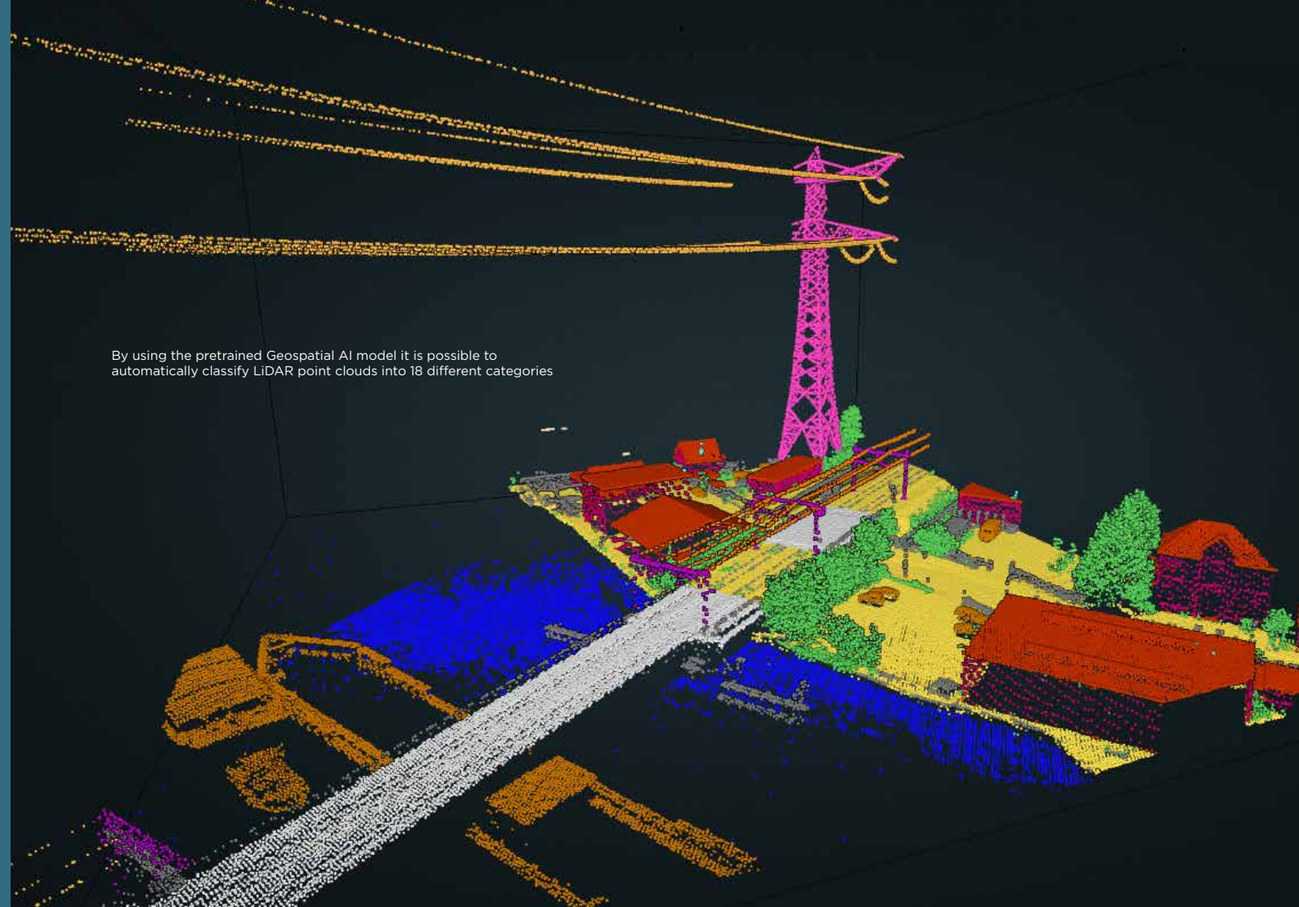
www.flai.ai

Flai Robot – Artifact



By using the pretrained Geospatial AI model it is possible to automatically classify LiDAR point clouds into 18 different categories

SHORT DESCRIPTION OF THE COMPANY

Flycom Technologies has been a trusted leader in airborne and mobile remote sensing data acquisition, processing and management services for over 15 years. The company delivers highly accurate spatial data — including LiDAR point clouds and derived products, photogrammetric outputs, thermal (IR) and UV imaging, asset mapping, and spaceborne EO data — serving a wide range of governmental and private clients in Slovenia and internationally.

Flycom has developed the next-generation location intelligence platform LIFT, which supports the creation of advanced location-based applications. LIFT enables seamless 2D/3D access, editing and exchange of information, offering a user-friendly platform where spatial data plays a key role in business processes such as land cadastre management, real estate, insurance, public safety, forestry, telecommunications and government operations.

Flycom is also developing AI models to optimise processes for users of the LIFT platform. The company aims to further strengthen its position as a leader in remote sensing and a key provider of innovative spatial solutions.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Earth observations.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- **Location intelligence platform (LIFT):** Natural Hazard Module and LIFT Sentinel AI Terrain Detector,
- **Remote sensing services:** aerial and mobile remote sensing data acquisition (LiDAR, photogrammetry, thermal and UV imaging), processing, and management services (inventory management) and analysis.

VALUE PROPOSITION / OFFERING

Location intelligence (LIFT):

- Natural Hazards Module – once geospatial data becomes available, it is instantly imported and analysed, saving clients' time and money (analysis, disaster response, etc.),
- LIFT Sentinel AI Terrain Detection: automatization of land cover detection,
- the possibility of customised integrations and development in accordance with the customer's needs.

Remote sensing services:

- High technological level of equipment,
- Highly accurate geospatial data that enable further analysis according to client needs,
- A wide range of remote sensing services and products (classified and RGB point cloud, digital terrain models, digital surface models, true orthophoto, oblique orthophoto, 3D mesh, 360° panoramic images, IR, UV and visual inspections etc.).

REFERENCES IN THE SPACE INDUSTRY

- Copernicus Accelerator (Y2019) – startup of the month,
- Copernicus Incubation – winners with our Natural Hazards Module (Y2020),
- AI4Copernicus - LIFT Sentinel AI Terrain Detector (Y2023),
- Providing remote sensing services and products in more than 20 countries in Europe and worldwide.

Flycom Technologies d.o.o.

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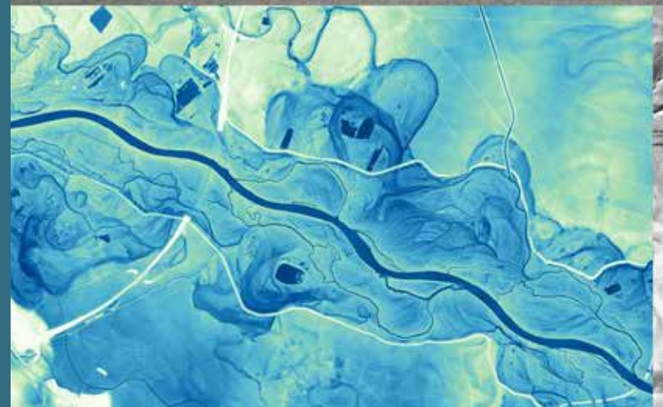
https://www.flycom.si/en

Year of establishment: 2019

Number of employees: 36

The top image shows our aircraft used for remote sensing surveys. The bottom left image illustrates the changing river channels of the River Mura over time. The bottom right image presents a digital elevation model of the terrain with the logo of Flycom's location intelligence platform (LIFT).



SHORT DESCRIPTION OF THE COMPANY

GeoCodis Ltd. is a Slovenian high-tech company with a proven track record of delivering innovative AI and Earth observation solutions. With successful collaborations involving the European Space Agency, the European Union, GIZ, and Slovenian funding bodies, GeoCodis has established itself as a trusted partner in advanced technology projects. Beyond its extensive EU-based scope of work, GeoCodis maintains a strong presence in Africa, working on impactful water management, agriculture, and urban planning projects across Uganda, Rwanda, Kenya, Ethiopia, Egypt, South Sudan, and Ghana.

GeoCodis specializes in using artificial intelligence and machine learning to tackle complex problems in Earth and space-related areas. Their expertise in Earth observation helps turn satellite data into useful insights, supporting important decisions in environmental monitoring. They also offer consulting and training services, helping organizations easily adopt AI, Earth observation, and GIS tools to improve efficiency and achieve strategic goals.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Development of customized earth observation services,
- AI-based geospatial and temporal data analytics,
- Drought- and flood-related applications.

VALUE PROPOSITION / OFFERING

GeoCodis combines extensive AI and EO know-how with software development capabilities. Our team also has experience of working with customers from different countries including EU, the Middle East, Africa and Asia.

REFERENCES IN THE SPACE INDUSTRY

- HidroSmart – research and development project for real-time smart irrigation system based on satellite imagery,
- UPMIS – a water management system deployed in Uganda, utilizing advanced AI and Earth Observation (EO) data to automatically assess the population's access to safe drinking water,
- UrbanGIS – urban revitalization and development of Cairo project in Egypt using geoinformation, machine learning and satellite technologies,
- SDA4Wetlands – project for monitoring wetlands' conditions using diverse satellite monitoring techniques,
- WSW Monitoring – satellite-based assessment of the impact of water spread weirs on landscape in Ethiopian dry valleys,
- WhereIsWater.at and VodaKje.si are near real-time water detection and monitoring portals using SAR satellite imagery with advanced flood mapping capabilities,
- ML4EO – Open Machine Learning course for Earth Observation in Rwanda,
- NIZIS – a demonstration project for autonomous intelligent Earth satellite communication infrastructure,
- CEOIS (customized earth observation information services) – ESA funded project to develop specific EO information layers using machine learning to assist the Geospatial Operations Support Team of the World Bank.

GeoCodis, information systems, Ltd.

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Matjaž Ivačič

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www.geocodis.com

Year of establishment: 2014

Number of employees: 11

GUARDIARIS

Train **The Brain.**

SHORT DESCRIPTION OF THE COMPANY

Guardiaris is a high-tech company specialising in the production of custom-designed indoor and outdoor simulators for both military and civilian sectors. Its simulators range from driving systems to small arms, anti-tank and missile system trainers.

All advanced software and hardware solutions are developed and produced entirely in-house, including the proprietary GUARD simulation engine and patented laserless technology. Together, these systems enable comprehensive data collection and real-time training management across a wide range of applications.

The company's civilian portfolio includes the Driver's Response Analytics System (DRAS), which uses eye-tracking technology to support the planning of new and existing motorway infrastructure — offering a novel perspective in virtual driving simulation. It also features a virtual reality (VR) simulation for narrow reef equipment operation, specifically designed for the mining industry, providing immersive training for special-purpose machinery.

Guardiaris serves as an OEM partner to some of the world's largest corporations and is a direct supplier to a growing number of armed forces worldwide, offering solutions for various forms of skill-acquisition training.

The company operates in accordance with ISO 9001 and AQAP 2110 standards.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Space applications,
- Space mining,
- Space settlement.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Sensor image fusion from multiple sources into a 3D synthetic computer-generated environment,
- Integration with existing digital twins and development of new ones,
- Customization of proprietary graphics engine based on specific requirements,
- Indoor and outdoor simulation solutions,
- Autonomous vehicles (UGV) system solutions for space exploration,
- UAV simulation,
- 4D After-Action Review and performance analytics for training management.

VALUE PROPOSITION / OFFERING

We deliver custom advanced simulators and training solutions for customers worldwide. By implementing cutting-edge digital twins, we provide highly immersive modular simulators, enhancing operational readiness and ensuring mission success. Committed to innovation and precision, we empower you with the tools you need to train smarter and perform better.

REFERENCES IN THE SPACE INDUSTRY

- Semi-autonomous vehicles for Ministry of Defence,
- UAV and control station facility,
- 3D objects and a terrain generation framework,
- Missile simulator for Ministry of Defence.

GUARDIARIS d.o.o.

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Dr. Radovan Sernec

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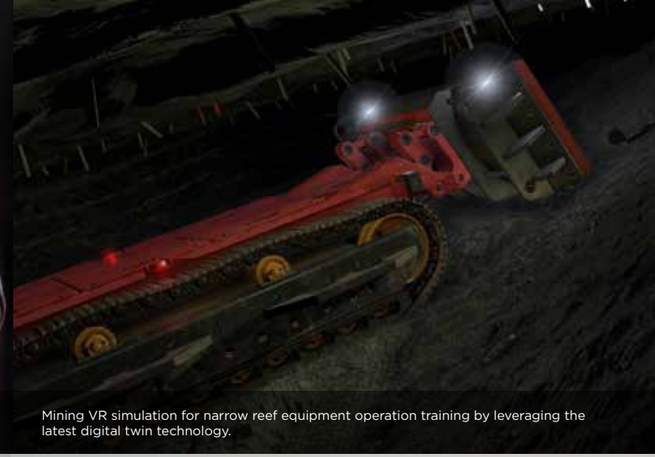
Year of establishment: 2007

Number of employees: 150

Mining VR simulation for narrow reef equipment operation training by leveraging the latest digital twin technology.



Mining VR simulation for narrow reef equipment operation training by leveraging the latest digital twin technology.

Development of a demonstrative technological model of a multifunctional, unmanned wheeled platform.

Digital model of future road infrastructure inserted within 3D digital elevated map geography.

INSTRUMENTATION TECHNOLOGIES

SHORT DESCRIPTION OF THE COMPANY

Instrumentation Technologies is a high-tech company developing instruments for high-speed signal acquisition (DAQ) and data processing, offering FPGA engineering solutions, and design services.
We started 25 years ago in the field of particle accelerators, where we are now offering diverse high-performance instruments, known by the brand name Libera. We are present in almost all particle physics research institutes like Brookhaven National Lab, or Argonne National Laboratory, with more then 7,000+ systems in the field. Using the knowledge gained in high-energy science, we provide complex hardware, FPGA, and embedded software design, rapid prototyping, product development, and EMC certification assistance in technologically demanding fields, such as Transportation, Telecommunications, Aerospace, Energy, and Defense.
In 2013 we introduced to the market the first open-source, precise multifunction measurement tool, called Red Pitaya, which has become the de facto standard in Space Prototyping stages and testing.
In 2022 we developed an advanced submerged wireless conductivity sensor system providing measuring, reporting, and visualizing the performance of RO membranes within pressure vessels, called SWICSSY. Water Reclamation with reverse osmosis system is an unavoidable process in extra-terrestrial environment. SWICSSY ensures maintenance which is done only when necessary and on membranes that are faulty, avoiding premature replacements, reducing costs and cutting payload weight by minimizing the need for spare membranes.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Life in space,
- Satellites,
- Space applications,
- Earth observation,
- Space exploration.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Analogue and digital data acquisition platform (up to 1GSps),
- SDR platform (COTS) - FPGA based receivers and transmitters,
- Key components for quantum communications (e.g. quantum random number generation), quantum radars, quantum sensor systems,
- Femtosecond level timing and synchronisation,
- Readout devices in spectrometry and conductivity measurements,
- Electronics providing the housekeeping, monitoring, control and connectivity of complex RF and optical devices.

VALUE PROPOSITION / OFFERING

We help our customers to:

- Expedite time to market by using our know-how and competences in complex electronics design,
- Cut development costs by providing solutions based on already field-proven building blocks,
- Focus on their core business by eliminating the burden of detailed technical implementation.

REFERENCES IN THE SPACE INDUSTRY

- NASA,
- Jet Propulsion Laboratory,
- Thales,
- CERN.

Instrumentation Technologies d.o.o.

Velika Pot 22,
5250 Solkan, Slovenia

Uroš Jerman
Iztok Špacapan

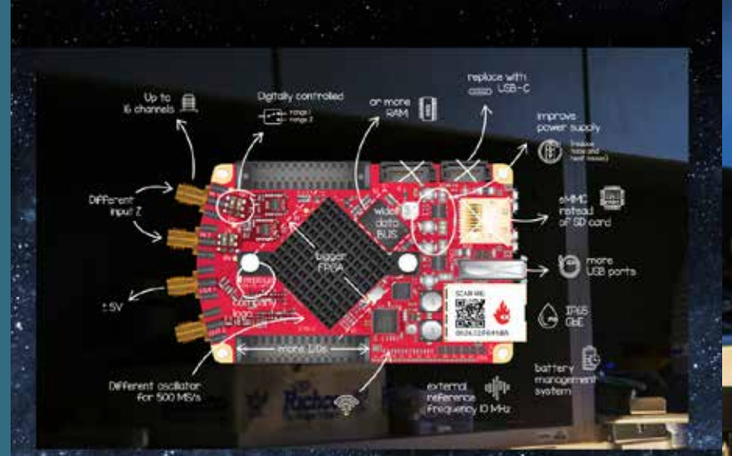
+386 53 352 600

info@i-tech.si
uros.jerman@i-tech.si
iztok.spacapan@i-tech.si

www.i-tech.si

Year of establishment: 1998

Number of employees: 53



Possible customizations of a Red Pitaya together with a product developed from Red Pitaya for JPL

Artefact

INTECTIV

SHORT DESCRIPTION OF THE COMPANY

With more than 5 decades of experience and over 100 highly qualified employees, Intectiv adheres to the highest environmental and technological standards. With AS9100D, we are setting the trend in the European aerospace industry, providing solutions for space-grade PCBs to become an indispensable part of new technology end products.

Our main advantages are high-tech production and expertise, continuous improvement and development, as well as flawless customer support with fast and high-quality production. With a high level of development and technologically innovative solutions, new standards are set, pushing the limits of what is possible and thus promoting the progress of the electronic and electrical industry in highly demanding global markets.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Launchers,
- Earth observation,
- Satellites,
- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Printed circuit boards (PCB), produced according to AS9100 standard.

VALUE PROPOSITION / OFFERING

- High quality, short lead time, wide technical range.

REFERENCES IN THE SPACE INDUSTRY

- Communication and observation applications (satellite-Earth), high-frequency PCBs.

Intectiv d.o.o.

Ljubljanska cesta 24a,
4000 Kranj, Slovenia

Majda Sever

+386 40 262 682

majda.sever@intectiv.si

Jure Kranjc

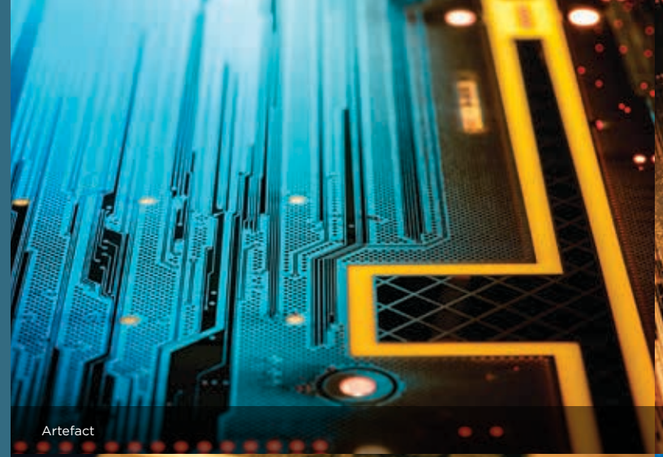
+386 51 259 593

jure.kranjc@intectiv.si

www.intectiv.si

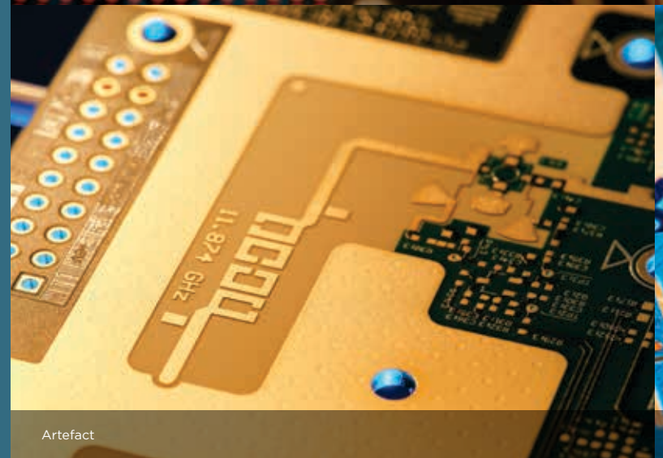
Year of establishment: 1973

Number of employees: 103



Artefact

Artefact



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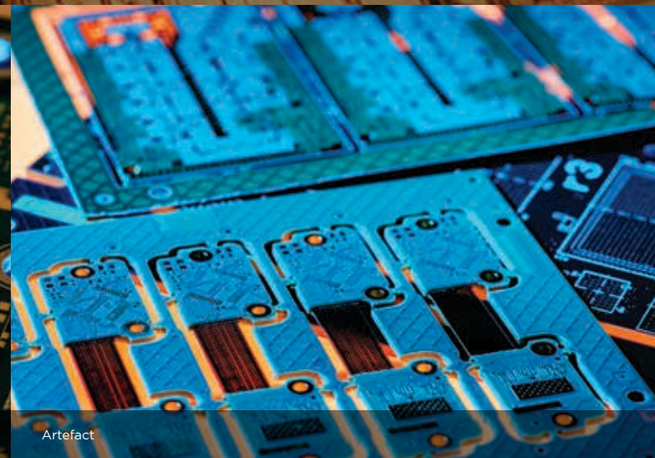


Artefact

SHORT DESCRIPTION OF THE COMPANY

KENS electronics produces samples and prototypes, and assembles small, medium and large series (up to several thousand pieces) of electronic circuits. We also offer assembly of custom-made final products. Both SMT and THT technologies are used, complemented by manual soldering and in-house development.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems
- Launchers
- Space applications

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Prototyping,
- Producing prototypes,
- Assembly of PCB boards,
- Manufacturing electronic devices using state-of-the-art technology.

VALUE PROPOSITION / OFFERING

- We offer a high-quality and rapid response. We meet technological challenges head-on and provide custom-made PCB board assembly.
- With many years of experience, and a reputation for reliability, stability and professionalism, we remain committed to the production and development of high-quality electronic circuits for the high-tech devices of the future.

REFERENCES IN THE SPACE INDUSTRY

- Producing electronic devices for FAIR, Germany
- Producing photon detectors for accelerator SuperKekB in BelleII, Japan
- Producing different electronic equipment for different accelerators as a partner in projects with multiple companies involved
- Producing navigation instruments for ultralight planes

KENS electronics d.o.o.

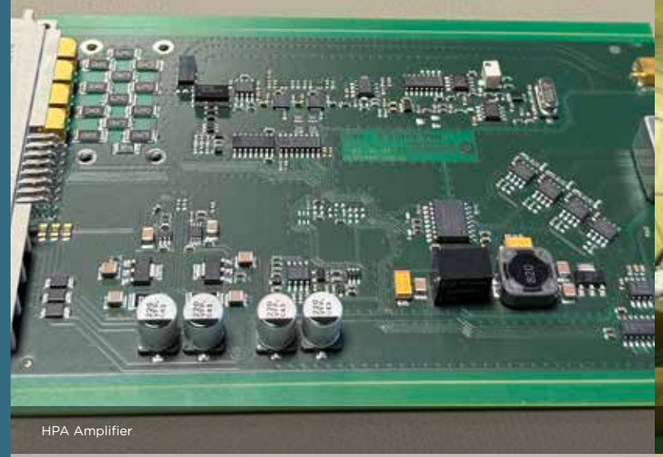
Tovarniška cesta 8a,
3312 Prebold, Slovenia

Aleš Hvala, manager
Anžej Tomaž Hvala, sales

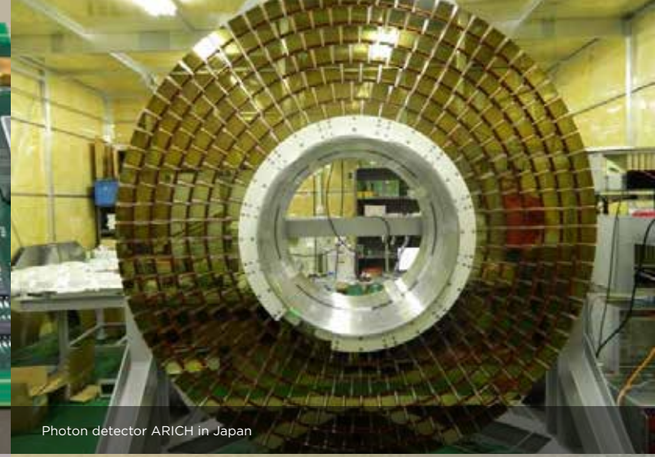
+386 41 704 809 (Aleš Hvala)
+386 41 821 835 (Anžej Tomaž Hvala)

info@kens.si
ales.hvala@kens.si
anzej.hvala@kens.si

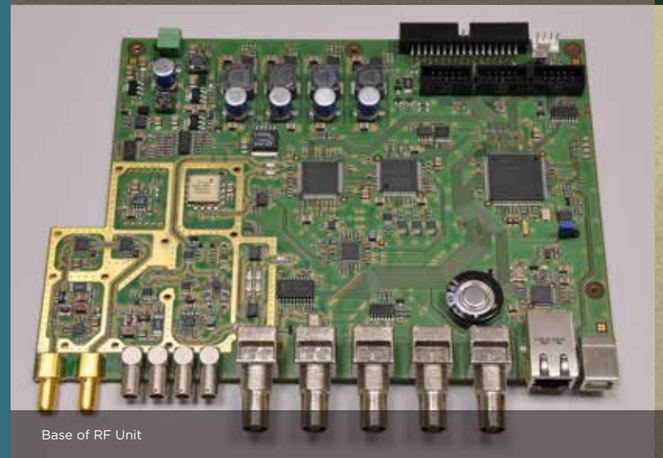
www.kens.si/en



HPA Amplifier



Photon detector ARICH in Japan



Base of RF Unit

Navigation instrument for glider

SHORT DESCRIPTION OF THE COMPANY

LE-TEHNIKA is a family-owned SME engaged in cryocooler development and production. In addition, the company is present in the field of LED street lighting and manufacturing of hydraulic systems.

With more than 30 years of experience in cryogenic sector we have become experts of miniature Joule-Thomson and Stirling cryocoolers designed for cooling infrared detectors. Other applications include cooling of high temperature superconducting magnets and cold traps for gas impurities. Our core expertise includes cryocooler development and production, while we have also capabilities for their integration into dewar-detector assemblies and other complex systems. We are operating in more than 15 countries worldwide. Le-Tehnika offers premium specialised Joule-Thomson and Stirling coolers made to order. Apart from serial production, our flexible production enables production of samples or small series, always delivering high-quality coolers at affordable prices. Joule-Thomson coolers we are offering include self-controlled, fixed orifice, actively controlled, fast cool down and various nonstandard coolers, while Stirling coolers we are offering are possible with linear or rotary motor in integral or split configuration.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Earth Observation
- Generic Technologies and Techniques

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

Miniature Stirling cryocoolers for Cubesats or other use.

VALUE PROPOSITION / OFFERING

Experts in cryogenic coolers for temperatures down to 65K. Experience in development and manufacturing of serial production and customized cryocoolers and cryostats. Stirling coolers manufactured by Le-Tehnika are known for their good quality and reasonable price.

REFERENCES IN THE SPACE INDUSTRY

- GSTP project (2021/22)

LE-TEHNIKA d.o.o.

Šuceva ulica 27,
4000 Kranj, Slovenia

Franc Megušar

+386 4 202 0280

cryogenics@le-tehnika.si

www.cryocoolers.eu/

Miniature rotary Stirling cryocoolers with cooling powers from 0.25W to 1W at 77K

Integral rotary Stirling cryocooler with cooling power of 0.5W at 77K

Actively controlled JT cryocooler
for independent use or combined
application with other type of coolers

SHORT DESCRIPTION OF THE COMPANY

Marand is a customer-centric software development company providing flexible, standard-based products & solutions for communication service providers.

The company is a TM Forum Open API gold certified member and in the forefront of development and standardization of BSS products based on TM Forum ODA architecture and exposing standard APIs.

It has successfully delivered BSS transformation projects with proven business outcomes for its customers.

Marand offers cloud-native core commerce components such as product catalog management, customer care, and billing implementing TM Forum's frameworks, coupled with professional services.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Product Catalogue Management,
- Product Order Capture & Validation,
- Product Inventory,
- Party Interaction Management,
- Billing Account Management,
- Party Management,
- Billing,
- Usage Management,
- Rating,
- Invoicing.

VALUE PROPOSITION / OFFERING

Marand provides flexible, standards-based software solutions for communication service providers, enabling business transformation through agile and customer-centric development. With years of proven success in delivering BSS transformation projects, the company helps clients achieve business enablement, increased agility, reduced complexity, streamlined operations, and enhanced customer experiences. Marand's commitment to innovation is demonstrated through focus on AI/ML research, and upholding highest standards with ISO 9001:2015 and ISO/IEC 27001:2013 certifications.

REFERENCES IN THE SPACE INDUSTRY

- Part of SpaceRISE consortium.

MARAND, programska oprema d.o.o.

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1000 Ljubljana, Slovenia

Tomaž Tomšič

+386 41 726 058

info@marand.si

www.marand.com/en

Year of establishment: 1973

Number of employees: 103

Marand was awarded the Gold Level Open API Conformance Certification by TM Forum for 13 APIs.

The Open Digital Architecture (ODA) provides a blueprint to help Communication Services Providers transform into agile digital organizations

Marand's team with its 'Ready for ODA' award

MARSi group

SHORT DESCRIPTION OF THE COMPANY

MARSi Group offers high quality services in fields of 3D metal print, CNC machining, 3D metrology, Research & Development, consulting and technical support in the field of revolutionary technologies.

It has developed chain of services to meet the highest demands of customers while developing and producing high quality products, that cannot be produced with conventional technologies. Our AM system and process parameters are fully compliant with 3D printing standards, ensuring optimum and high-quality smart manufacturing. We offer complete production of individualised products, with a wide range of suitable materials for the aerospace industry which meet the stringent requirements. Together, we can achieve your requirements and goals in the areas of production, development and design.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Satellites,
- Launchers,
- Ground systems,
- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Additive manufacturing of complex metal parts with DMLS® technology & HQ materials such as: Nickel Alloy 625 (W.Nr. 2.4856); Stainless Steel 316L (W.Nr. 1.4404); Aluminium Alloy AlSi10Mg,
- Depending on your needs for small or medium series production, we can introduce and certify new materials in our AM system that will meet your application,
- CNC machining of metals and other materials on 5-axis CNC milling machine. With our machining services we can also post-process of complex additively manufactured parts,
- 3D metrology services with GOM ScanCobot (ZEISS) & ATOS Q which is suited for efficient quality control of small and medium-sized parts made of plastic, metal or cast iron,
- R&D services: Topology-optimisation, simulation and additive manufacturing of extremely stable lightweight individualised parts for space crafts.

VALUE PROPOSITION / OFFERING

MARSi's vision is to develop and modernise manufacturing processes using 3D metal printed parts with DMLS® technology. We are offering fast and efficient manufacturing of finished 3D printed metal parts in different applications. Our added value is that we can offer you other 'smart' services under one roof, such as 5-axis CNC milling and 3D metrology services. The aforementioned services can be offered individually or as part of a package, i.e. from 3D printing, post-processing to quality control.

REFERENCES IN THE SPACE INDUSTRY

- Manufacturing of complex cost-efficient parts for satellites
- Manufacturing of topology optimised lightweight combustion chamber for rocket engine

MARSi group d.o.o.

Slovenska vas 4K,
8261 Jesenice na Dolenjskem, Slovenia

Mario Šinko, CEO

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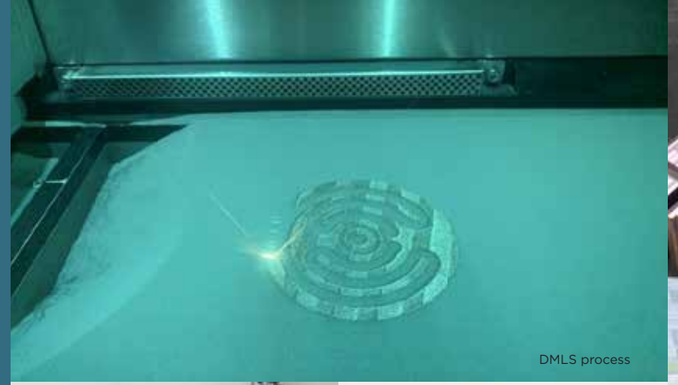
www.marsi.at

3D metrology – 3D scanning



DMLS process

Topology-optimised reductors

High-quality valve prototype

Prototype of exhaust manifold

Serial production with DMLS technology

CNC serial production

3D scanning process

PARADIGMA technologies

SHORT DESCRIPTION OF THE COMPANY

Paradigma Technologies is a leading space technology company specializing in the development of advanced high-frequency telecommunication systems for small satellites.
The company provides custom solutions up to Q/V Band systems, including receivers, transmitters, transponders, and transceivers. Additionally, Paradigma Technologies offers antenna solutions such as horn and patch antennas.
Paradigma Technologies adheres to the stringent ECSS and NASA standards for design, testing, and product acceptance, ensuring high reliability and performance for mission-critical space applications. The company's processes are optimized to meet the rigorous demands of the space industry, guaranteeing the delivery of space-qualified systems.
Paradigma Technologies is committed to providing energy-efficient, high-performance, and miniaturized telecommunication solutions that address the growing demands of the New Space industry.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Satellites
- Space Exploration,
- Ground Systems.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

Products:

- Development of custom telecommunication systems up to Q/V Band,
- Design and production of receivers, transmitters, transponders, and transceivers,
- Antenna solutions, including horn, patch and phased array antennas,
- Satellite SDR-based telecommunication systems.

Services:

- Custom telecommunication module end-to-end design,
- Space qualification services: vibration, thermal, EMC, ESD, TID, SEE,
- Product industrialization.

Research:

- R&D institutional projects: ESA, EU, Research Institutes, Universities,
- Novel space and telecommunication technologies.

VALUE PROPOSITION / OFFERING

Paradigma Technologies offers highly customizable, miniaturized, and scalable telecommunication systems designed for small satellite platforms, ensuring high data-rate communications.

- 10x to 20x higher data rates using Ka and Q Bands,
- High efficiency with low energy consumption and heat dissipation,
- Miniaturization for low mass and faster satellite integration,
- Modular design for easier customization and upgrades,
- High reliability, with products adhering to ECSS standards for space qualification.

REFERENCES IN THE SPACE INDUSTRY

Space missions:

- MOCKINGJAY (NEOSAT, D-Orbit),
- GENA-OT (Orora Technologies),
- ORBITGUARD-2 (Infinite Orbits),
- ATHENE-1 (Universität der Bundeswehr München, LuxSpace OHB),
- STEP (Space Inventor, Terma, GomSpace, Aarhus University),
- ENDURANCE (Infinite Orbits).

Institutional projects:

- COCHISA (Thales Alenia Space, IHP, IMST, ALTER)

Paradigma Technologies d.o.o.

Kraška ulica 2,
6210 Sežana, Slovenia

Federico Pergolesi, CTO
Massimiliano Vecchiet, COO

+386 8 205 3232

info@paradigma-tech.com

www.paradigma-tech.com

Year of establishment: 2019

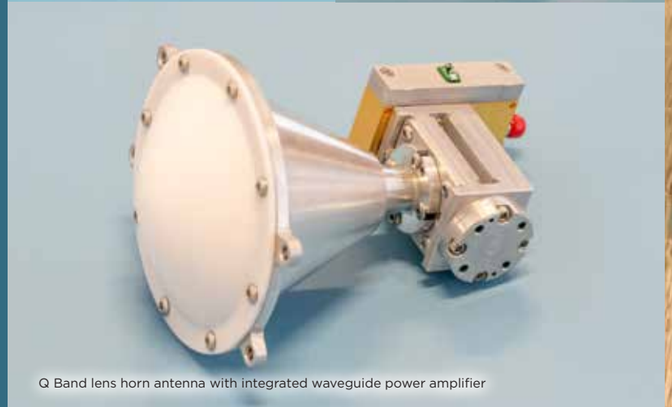
Number of employees: 6

Miniaturized K-Ka Band Radio Transceivers for smallsats

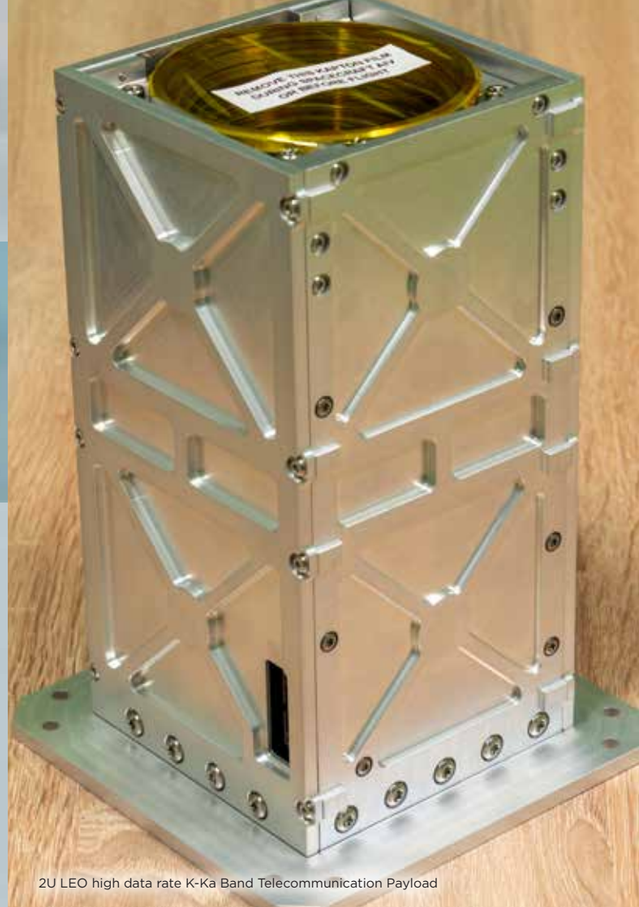
Miniaturized Q Band Radio module for smallsats

2U GEO redundant Transponder Telecommunication Payload

K-Ka Band dual polarized horn antenna for smallsats



Q Band lens horn antenna with integrated waveguide power amplifier



2U LEO high data rate K-Ka Band Telecommunication Payload

PRIOT DIGITAL SYSTEMS

SHORT DESCRIPTION OF THE COMPANY

PRIOT Digital Systems is a research and development company based in Slovenia. It was founded in 2019 by Dr. Blaž Jakopin and Dr. Grega Logar, following their academic careers in robotics and mechatronics. The company is active in Industry 4.0, IoT, and web platform development, with a strong focus on user experience, product design, and understanding the value delivered to end users.

In 2022, PRIOT began exploring remote sensing technologies after winning both the national and EU CASSINI events with its concept for early bark beetle detection using satellite imagery. Since then, the company has joined the CASSINI business acceleration framework, collaborating with experts in the space sector to further develop the solution. Additionally, PRIOT won the Idea Track of the myEUspace competition organised by EUSPA.

In Slovenia, the company has established several research partnerships within the national innovation ecosystem. PRIOT is now building expertise in satellite data analysis, image processing, artificial intelligence, and deep learning for forestry applications. Its project, Early Bark Beetle Detection Using Deep Learning, has been successfully approved for implementation by ESA under the ESA Fourth Fixed Call for Proposals within the Requesting Party Activity (RPA) in Slovenia.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Earth Observation.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Downstream application development,
- Forest monitoring,
- Infrastructure surveillance.

VALUE PROPOSITION / OFFERING

- Focused on understanding end-users and ROI,
- Wide area of expertise across various Downstream applications,
- Active in multiple industries,
- Quick prototyping.

REFERENCES IN THE SPACE INDUSTRY

- Early Bark Beetle Detection Using Deep Learning, ESA RPA Project,
- Vegetation Analysis for Railway Safety (VARS).

PRIOT Digital Systems

Ulica skofa Maksimilijana Drzecnika 6,
2000 Maribor, Slovenia

Dr. Blaz Jakopin

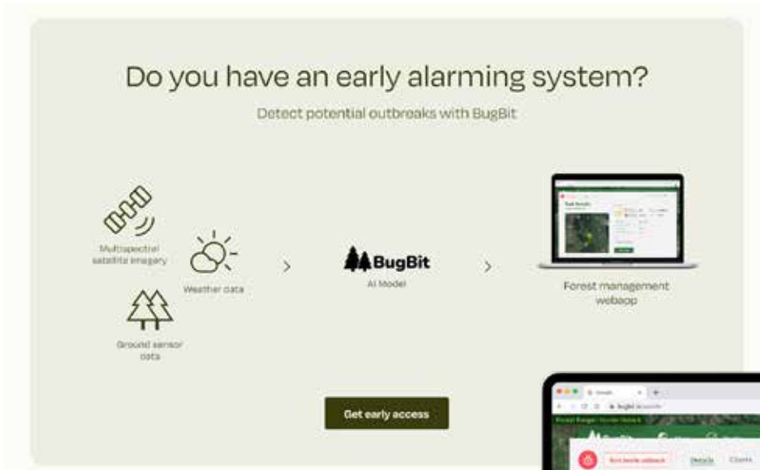
+386 40 550 371

blaz@priot.io

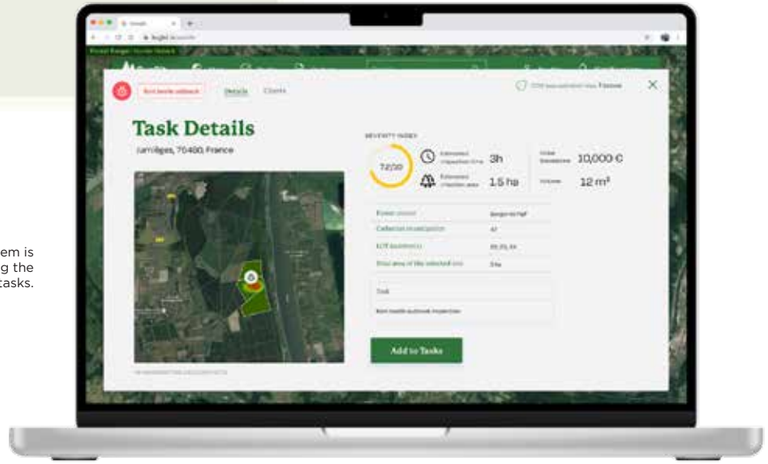
www.priot.io

Year of establishment: 2019

Number of employees: 7



A graphic representation of how the BugBit system processes various data sources to deliver value to users within a forest management platform.



The user interface of the BugBit system is used for task management, allowing the forest manager to view and manage tasks.

RIEDL GROUP | RIEDL PRECISION | RIEDL AEROSPACE | RIEDL INVEST

SHORT DESCRIPTION OF THE COMPANY

The RIEDL GROUP produces precise, high-quality metal parts for the aerospace, motorcycle and railway industries, as well as components for the medical, precision mechanics and telecommunications sectors. We also design and manufacture custom machinery, including precision measuring machines and devices.

Our primary goal is to meet – and exceed – the expectations of each individual customer, based on the quality of our products and services. We aim for steady, continuous growth while expanding the company's recognition on the international market. In doing so, we are building long-term relationships with our customers, suppliers and employees.

We are committed to achieving the highest quality standards in everything we do. Our management system is designed to meet the requirements of international quality standards in accordance with ISO 9001:2015 and environmental management standards in accordance with ISO 14001:2015.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Satellites,
- Space applications,
- Ground systems.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- CNC turning,
- CNC milling,
- Assembly,
- CNC sheet metal bending,
- Laser cutting,
- Clean room assembly & packaging,
- Research & development.

VALUE PROPOSITION / OFFERING

- Precision and quality,
- High responsiveness,
- Flexibility,
- Individual approach,
- Long-term experiences.

REFERENCES IN THE SPACE INDUSTRY

- Enpulsion,
- SkyLabs,
- Magna Aerospace,
- FACC (Bombardier, Airbus, Boeing),
- Thales France (approval process running).

RIEDL GROUP
Group legal entities:
RIEDL PRECISION d.o.o.
RIEDL AEROSPACE d.o.o.
RIEDL INVEST d.o.o.

Preradoviceva ulica 42,
2000 Maribor, Slovenia
Tomaz Riedl, CEO
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www.riedl.si

Bar end – satellite part

Mounting bracket for
private jets – interior part

Satellite ion thruster parts

Table mechanism for private jets

Hinge mechanism for private jets

Nano satellite body

Turbine blades measuring device

Turbine blades measuring machine

sij | metal ravne

SHORT DESCRIPTION OF THE COMPANY

SIJ Metal Ravne, a member of SIJ – Slovenian Steel Group, is one of the largest steel companies in Europe. We produce a wide range of over 200 steel grades in various dimensional shapes – from alloyed structural steels to tool steels and special stainless steels – in the form of rolled and forged long products.

We are committed to global and European climate goals and operate in line with the principles of the circular economy. With our steel, we are the right partner to support Europe's green transition. As a modern recycling mill, 100% of our products are made from recycled steel scrap.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

We produce special steels that can be used for various purposes, like fasteners, landing gear components, engine parts, highly stressed fuselage and wing parts, etc.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Production and ingot casting of special steel grades like stainless steel, highly demanding structural steels, tool and high-speed steels,
- Advanced production technology of special steels like VOD (Vacuum Oxygen Decarburisation) method, ESR (Electroslag Remelting) method,
- Forging, rolling and machining of stainless and special steels,
- Performing in house NDT quality control and Metallurgical tests,
- Strong research and development team, that can offer customers all needed support or be leading partner at developing new products or even new steel/alloy grades.

VALUE PROPOSITION / OFFERING

Quality System Management

- EN/AS 9100,
- ISO 14001,
- OHSAS 18001,
- ISO/IEC 17025,
- Cooperation with companies active in the aerospace industry,
- Own heat treatment furnaces,
- Experience with forging/rolling and heat treatment of nickel and titanium alloys.

Control and Testing of Materials

- Through in-house metallurgical research, we support the development of new products and the improvement of technologies in collaboration with our customers,
- We advise customers on the most suitable steel grades for their specific applications.

SIJ Metal Ravne d.o.o.

Koroška cesta 14,
2390 Ravne na Koroškem, Slovenia

Matej Poročnik, Sales Manager

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+386 2 870 7082 (Matej Poročnik)

marketing@metalravne.com
matej.porocnik@metalravne.com

https://www.metalravne.com/en

Year of establishment: 1992

Number of employees: 960

Premium-quality steel bars produced at SIJ Metal Ravne

Quality control for high-performance and ultimate safety materials which perform exceptionally at all times

SINERGISE

SHORT DESCRIPTION OF THE COMPANY

Sinergise Solutions is a European company, part of the Planet Labs PBC, building large geospatial systems based on cloud and web technology, focusing on areas where it can have the greatest impact: Earth Observation, making it easier for individuals, institutions, and value-adders to get actionable insights into what is happening with our planet; and supporting IT processes in Agriculture that ensure more efficient use of resources while ensuring ecosystem sustainability.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Earth Observation.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Sentinel Hub – an award-winning satellite imagery archiving, processing and distribution service - powers EO applications around the world, processes hundreds of millions of requests each month, crunching more than 50 PB of data from Sentinel, Landsat, PlanetScope, SkySat, WorldView and other missions.
- Area Monitoring – machine-learning assisted extraction of information from EO data for proactive monitoring of state of the land (identification of agriculture activities, new building constructions, etc.).

VALUE PROPOSITION / OFFERING

Sinergise Solutions' vision is to facilitate the vast amounts of available EO imagery to be used in people's everyday lives. By partnering with AWS, they have brought the open Copernicus Sentinel data to the cloud and made it accessible to everyone. Hundreds of thousands of people use it to monitor wildfires, environmental disasters, Amazon rainforest deforestation, find new penguin colonies in Antarctica, and even to find missing hikers. The next step in their journey is an automated, continuous monitoring of our planet, shuffling through dozens TB of data that become available every day to extract relevant information. Such as Blue Dot Water Observatory, which monitors more than 15,000 water bodies globally, uses machine learning (ML) to extract the extent of water and shows the worrying impacts of global warming. They are using Batch processing to create ML-ready features to demonstrate cost-efficient low-scale analysis, combined with drill-down methods and fusing data from non-EO sources. ML is also used to ensure agricultural sustainability. Along the way, Sinergise Solutions shares its experiences on the blog, posts open-source tools on GitHub, and engages the community to do similar things.

REFERENCES IN THE SPACE INDUSTRY

European Space Agency, European Commission

- Copernicus Data Space Ecosystem,
- EO Browser,
- Euro Data Cube,
- Query Planet.

NASA, Geoscience Australia

- Sentinel-1 CARD4L tool

European Environmental Agency, Joint Research Centre

- Sentinel-2 Global Mosaic, part of Copernicus Land Monitoring Services
- Various corporate clients (Maxar, TomTom, CLAAS, EU Satellite Centre, JRC and 1,500 others) - using Sentinel Hub data to power their applications.

Sinergise Solutions d.o.o.

Cvetkova ulica 29,
1000 Ljubljana, Slovenia

Grega Milčinski

+386 1 320 6150

info@sinergise.com

www.sinergise.com
www.sentinel-hub.com

Sinergise Solutions' Sentinel Hub – an award-winning satellite imagery archiving, processing and distribution service – powers EO applications around the world. It processes hundreds of millions of requests every month and handles more than 50 PB of data from Sentinel, Landsat, PlanetScope, SkySat, WorldView and other missions.

skylabs

SHORT DESCRIPTION OF THE COMPANY

SkyLabs is a space-technology oriented company providing miniaturised satellite platforms, EGSE and innovative approach to space engineering. SkyLabs is providing high-tech solutions and services for the most demanding aerospace and terrestrial applications.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground Systems,
- Satellites,
- Space Applications,
- Earth Observation,
- Space Exploration.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Miniaturised satellite platforms with complete EGSE represent comprehensive turn-key solutions for micro and small-scale satellite constellations.
- Semiconductors design expertise is leveraged in innovative radiation protection techniques, ICs and radiation sensors.

VALUE PROPOSITION / OFFERING

SkyLabs provides innovative solutions by following the latest technology trends with a proactive and creative design approach, without sacrificing reliability nor performance.

REFERENCES IN THE SPACE INDUSTRY

- EAGLET-2 EO satellite constellation mission based on OHB Italia M3 Platform,
- SAT4EO constellation mission, prime Elecnor Deimos Group,
- HEREMS-TP/SP/SpIRIT scientific constellation mission, prime INAF,
- TRISAT IoD satellite mission – demonstrating SkyLabs key technologies, prime UM,
- TRISAT-R technological pathfinder for Space Weather, prime UM,
- TRISAT-S IoD satellite mission – demonstrating management of a secure link, prime UM,
- CASSINI missions,
- LEOPNT constellation mission,
- CISERES mission, prime Elecnor Deimos Group.

SkyLabs d.o.o.

Zagrebška cesta 104,
2000 Maribor, Slovenia

+386 59 338 890

info@skylabs.si

www.skylabs.si

Year of establishment: 2016

Number of employees: 32

Our products and areas of work and research:
Satellite avionics platform for micro- to small- scale satellites. On-board computers, Earth ground station equipment, Electrical power system, Communication subsystems, Remote terminal units, Embedded software with FDIR, Space weather, Microelectronics & IP cores, SWIR spectroscopy, SARA - autonomous low-cost arachnid all-terrain crawler, nanosatellites TRISAT (In-orbit demonstration of our products in Low Earth orbit) and TRISAT-R (In-orbit demonstration of our products in mid-Earth orbit).

skylabs

We are market leader in fault-tolerant and turn-key satellite avionics

SHORT DESCRIPTION OF THE COMPANY

Since 2004, STN has grown into a leading global teleport, known for innovation and reliability. Our expert team delivers tailored solutions that help broadcasters and content owners succeed.

We provide 24/7 support with fast turnaround times to meet the demands of time-sensitive projects. Our advanced services, from satellite distribution to content management, ensure our clients stay ahead in a competitive market. Committed to quality, flexibility, and innovation, STN is a trusted partner, helping clients expand their reach and navigate the evolving media landscape.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground infrastructure for antennas in various bands,
- Ground systems / Connectivity,
- Satellite Uplink / Downlink / Monitoring / TT&C.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- **SATELLITE:** End-to-end, managed communication solutions globally through satellite, fibre, and IP connections, with Points of Presence (PoPs) in major data centers across Europe, seamlessly connected via a global fibre network,
- **TT&C** (Telemetry, Tracking & Control): Dedicated space for hosting TT&C antennas, secure, controlled site access, a diverse and redundant fibre network, highly skilled personnel, comprehensive tools for complete or partial TT&C installations, with optional office space available as needed,
- **SERVER ROOM / RACK SPACE:** Secure, temperature-controlled server room with continuous power supply supported by UPS, fixed power, and a diesel generator for backup ensuring reliable and stable operation for all hosted equipment,
- **AVAILABLE GROUND SPACE:** Additional land space for the installation of new antennas, including gateways for emerging Low Earth Orbit (LEO) and Medium Earth Orbit (MEO) projects, facilitating expansion and support for the next generation of satellite services.

VALUE PROPOSITION / OFFERING

STN is built on a flexible and scalable infrastructure, offering end-to-end services for satellite, IP, and fibre networks. Our solutions include satellite distribution, OTT and streaming, cloud services, and co-location for antenna installations. With strategic PoPs across Europe and 24/7 support, we ensure reliable, secure, and innovative communication solutions that adapt to evolving industry needs, empowering our clients to succeed in a fast-changing digital landscape.

REFERENCES IN THE SPACE INDUSTRY

Many space and technology industry leaders like Eutelsat, SES, Intelsat, iKOMG, Avanti PLC, ST Engineering, ASC, Level 3 Communications, Amazon Web Services (AWS) and Cisco.

Sinergise Solutions d.o.o.

Kidričeva ulica 22a,
1233 Dob, Slovenia

Aleksander Šibila
Viktorija Debevec

+386 1 527 24 60

sales@stn.eu
aleksander.sibila@stn.eu
viktorija.debevec@stn.eu

https://www.stn.eu/

Year of establishment: 2004

Number of employees: 30

Antenna farm at Dob, Slovenia

Equipment centre (EQC) with 119 racks and more than 5000 rack units

STN Headquarters

tekstina
SINCE 1828

SHORT DESCRIPTION OF THE COMPANY

At Tekstina Tech, we specialize in advanced textile solutions that deliver superior protection and performance. Founded in 1828 we leverage our extensive expertise to produce high-performance fabrics that meet the stringent needs of sectors such as personal protective equipment (PPE), defence, and industrial applications. Our textiles are engineered to protect against hazards like electric arc, welding spatter, fire exposure, and chemical spills.

Our product portfolio includes innovative fabric solutions divided into three key brands:

- **URIM:** This is our proprietary fabric for protection against electric arc. With a unique structure and polyester-free fiber composition, URIM shields workers from the consequences of arc flash while providing exceptional comfort. It is also highly effective in protecting against weld and grind spatter.
- **AGNI:** Developed for heat and flame protection for firefighters, AGNI offers **all-in-one protection** that extends beyond fire resistance. It also safeguards against electric arc, tearing, traction, and abrasion, providing comprehensive defence while being significantly lighter than traditional protective fabrics.
- **ANGE:** This range of linings is designed to provide additional heat protection and improve the comfort of firefighter turnout gear.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Life in space,
- Satellites,
- Space exploration,
- Space settlement.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Technical fabrics to protect personnel, satellites and other equipment on space missions,
- Non-flammable textile materials to prevent fire and “fast extinguishing” of fires on space stations/colonies,
- Textile materials to help heal wounds, for electricity generation in space and for the basis of space food production in space colonies,

VALUE PROPOSITION / OFFERING

- Globally the Lightest Fabric in Its Class: Our outer fabrics, weighing between 150–250 g/m², provide equal or superior protection compared to competitor fabrics that are 50 g/m² heavier.
- Polyester-Free Composition:
- Flame-Resistant Fiber Blends: We utilize a blend of modacrylic, aramid, and flame-retardant viscose fibres. This combination ensures superior safety and durability,
- Temperature-Regulating Fibers: Our fabrics incorporate fibres that help maintain an optimal internal temperature of 37.5°C,
- High-Visibility Orange Option: Tekstina Tech is the only provider offering non-polyester fabrics in high-visibility orange. This option enhances worker safety in low-visibility conditions without compromising the fabric's protective qualities,
- Fibers for Extreme Conditions: Engineered with specialized fibres, our fabrics can retain heat or coolness,
- Enhanced Worker Safety and Practicality: Specifically designed for hazardous activities like welding and grinding,
- Sustainability: The long-lasting durability of our fabrics reduces the need for frequent replacements,
- Quality Assurance: All products are certified to meet international standards such as ISO 9001 and OEKO-TEX®.

Tekstina d.o.o.

Tovarniška cesta 15,
5270 Ajdovščina, Slovenia

info@tekstina.si

www.tekstina-tech.si

Year of establishment: 1828

Number of employees: 82

Tekstina's production process.

Tekstina lightweight skin-safe high-quality protective technical fabrics for protective garments.

BOSCAROL GROUP

TIMTEC

TIMTEC DEFENSE

SHORT DESCRIPTION OF THE COMPANY

Timtec Defense is specialized in rapid design, verification, testing and production of integrated systems for land, sea and aerospace applications from prototype to small and medium quantities.

Our systems are fully customized to meet specific customer/end user needs and special environmental requirements. The company is vertically integrated, with in-house development of electronic, mechatronic, robotic and optical sub-assemblies together with firmware and software.

The company is capable of complete in-house prototyping, small series production, (including metals 3D printing) and programming.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Satellites and subassemblies,
- Instruments and electrooptics,
- Earth observation,
- Space exploration,
- Communications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Engineering services for electrical ground support equipment development and automated mechanical systems integration,
- Sensor systems and subsystems (Data collection),
- Robotic Autonomous Systems on multiple levels (air, subsea, space),
- Ground control station and EO data aggregation systems,
- 3D printing & manufacturing of metal and composite products for space applications.

VALUE PROPOSITION / OFFERING

- Custom built automated mechanical solutions,
- Products designed for demanding environments,
- Integrated systems for subsea, land, air and space applications,
- Customizable multisensor data gathering gyro-stabilized devices,
- Area-denial systems and electronic data integrity solutions.

REFERENCES IN THE SPACE INDUSTRY

- ESA
- EDA
- EDF
- Teledyne
- MBDA
- Rapid Space
- Pipistrel
- US DoD
- UK MoD
- SI MoD

TIMTEC Defense d.o.o.

Goriška cesta 6c,
SI-5271 Vipava, Slovenia

Martin Lamut, VP Space

+386 51 628790

info@timtecdefense.eu

www.timtec.eu

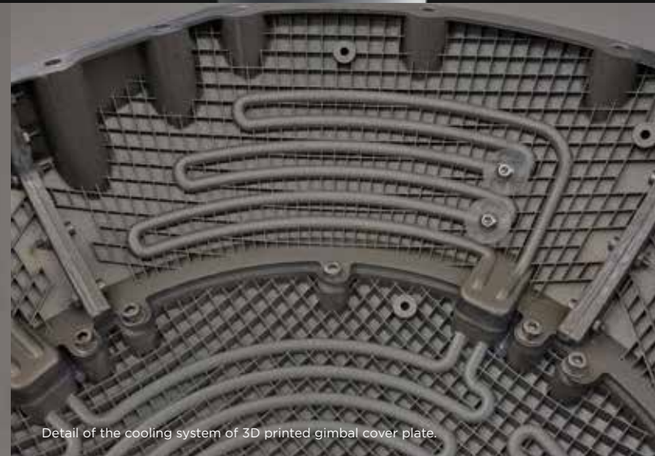
Year of establishment: 2013

Number of employees: 25

Gyro-stabilized electro-optical infrared multisensor gimbal device.

Close up of multisensor gimbal device.

3D printed stainless steel cover plate of gimbal device.



Detail of the cooling system of 3D printed gimbal cover plate.

UBIQUITY ROBOTICS

SHORT DESCRIPTION OF THE COMPANY

Ubiquity Robotics empowers businesses and individuals to build custom robot rovers with a modular and user-friendly approach. We offer a range of robot rover platforms, parts, and consulting services, catering to a diverse set of applications.

The company is distinctive due to its modular design and wide application use. The versatile robot platforms are built from a small number core components that allow customization and as such serve a broad spectrum of industries, from education and hobbyist communities to advanced commercial applications.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Ground systems,
- Space applications,
- Space mining,
- Space settlement,
- Earth observation.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Advanced motor control,
- Advanced navigation technology,
- Development of robots that provide ground-based observations that enable calibration of sensors on satellites.

VALUE PROPOSITION / OFFERING

We offer a flexible robotics platform that can be adapted to fit your unique requirements. No matter your industry or project goals, we'll work closely with you to design a customized solution that delivers the performance and functionality you need.

REFERENCES IN THE SPACE INDUSTRY

- Project Micro-tractortruck supported by ESA

Ubiquity Robotics

Tehnološki park 19, stavba B,
1000 Ljubljana

David Crawley, PhD

+386 70 492 541

office@ubiquityrobotics.com

https://www.ubiquityrobotics.com

Year of establishment: 2021

Number of employees: 15

Photo of a woman sitting next to a robot that is carrying her items.

Ubiquity Robotic's robot platform

Artefact

SHORT DESCRIPTION OF THE COMPANY

XLAB is a cutting-edge software company with a robust research foundation, delivering innovative solutions tailored for demanding users. Specializing in low-bandwidth, high-availability remote access systems, AI and HPC tools, 3D analysis and segmentation for GIS and medical applications, XLAB's technologies excel in reliability, precision, and scalability. With proven expertise and a global footprint, XLAB delivers high-performance technologies designed to meet the unique challenges of its customers.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Space applications – remote control and access to computers in low-bandwidth and high-latency conditions ISL Online,
- Space applications – automated mass deployment of computers SteamPunk Spotter,
- Space applications – telemedicine, remote diagnostics,
- Earth observation – GIS systems, AI detection and planning.

VALUE PROPOSITION / OFFERING

XLAB is a software company with expertise in low-bandwidth and high-latency conditions. We are developing cutting-edge technology with a particular focus on secure communications.

- ISL Online, one of our flagship solutions, provides seamless remote access and support in even the most demanding environments,
- Our radiology, orthopedics and transfusion telemedicine tools are used for remote diagnostics in defense applications and civilian remote locations,
- With a specialized AI team, we lace our GIS systems to provide increased awarenes,
- Steampunk Spotter is out latest tool, aimed at orchestrating vast amounts of computers.

REFERENCES IN THE SPACE INDUSTRY

- Anschütz,
- European Defense Agency,
- Deutsche Bahn,
- ENI.

XLAB d.o.o.

Pot za Brdom 100,
1000 Ljubljana, Slovenia

Mitja Vavpotič

+386 1 244 7760

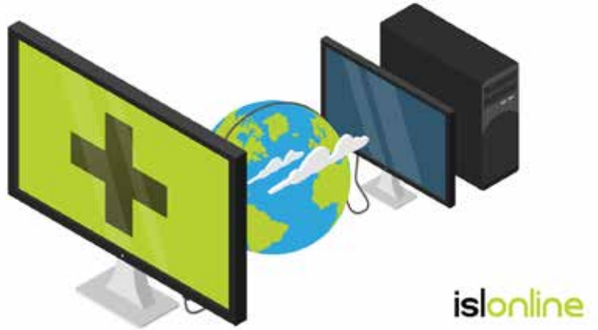
info@xlab.si mitja.vavpotic@xlab.si

www.xlab.si www.islonline.com

Year of establishment: 2001

Number of employees: 150

ISL Online – remote control and access to computers in low-bandwidth and high-latency conditions.



ISL Online remote control connects to distant computers also in LAN-only environments.

XLAB provides AI EO capabilities laced with user-provided data to enhance situational awareness and decision making.

XLAB provides telemedicine and remote operation planning tools in radiology, orthopaedics, dentistry and transfusion.

ZLATARNA CELJE
1344

SHORT DESCRIPTION OF THE COMPANY

Zlatarna Celje d.o.o. is a long-time manufacturer of products from precious metals for the jewellery, dental and industrial sectors, with a well-established market brand and market share in south-eastern Europe. Its core technological activity is the processing of noble metals and alloys, from producing finished products from raw materials to refining of scrap noble metals and production of nanomaterials. The company's research and development in nanotechnology focuses on the synthesis of gold nanoparticles and their applications in various forms and products for optical, medical, pharmaceutical, industrial and space applications.

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Satellites
- Space applications
- Earth observation
- Space exploration

The applications of gold nanomaterials in space operations are in nano-inks for circuits, flexible electronics and functional elements in electronic components, sensors and diagnostics. Developments for the use of these materials include monitoring biological properties, contaminants, colour change sensors, uses in catalytic processes and for optical applications as colourants, functional coatings and filters.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Nanoparticle production and characterisation,
- Preparation of nano inks,
- Research and development activities,
- Gilding.

VALUE PROPOSITION / OFFERING

Zlatarna Celje can provide tailored gold nanoparticles in wet suspensions or dry form, with different stabilisers, sizes and shapes, as nano-inks and nanomaterials for satellite and ground system components. The research and development activities include conventional processing of precious metals for production of components, as well as development of new nanomaterials based on precious metals for advanced space applications. Extensive characterisations of nanomaterials and functional properties of components are available. With well-established processing of precious metals, gilding services are also available for improving the electronic properties, stability and corrosion resistance of electronic and structural elements for space missions.

REFERENCES IN THE SPACE INDUSTRY

- Lyo-Gold in PCB fabrication concerns for mmWave Circuits in the next generation of space telecommunications (ESA),
- Testing of novel nano gold ink for inkjet printing, https://doi.org/10.14743/apem2020.3.371,
- Jettability and printability of customized gold nanoparticles-based ink on flexible substrate through inkjet printing process, https://doi.org/10.1016/j.colsurfa.2023.132837,
- Optical Characteristics of Directly Deposited Gold Nanoparticle Films, https://doi.org/10.3390/surfaces7020023,
- Proprietary nanotechnology research and development.

Zlatarna Celje d.o.o.

Kersnikova ulica 19,
3000 Celje, Slovenia

Rebeka Rudolf

+386 3 426 7100

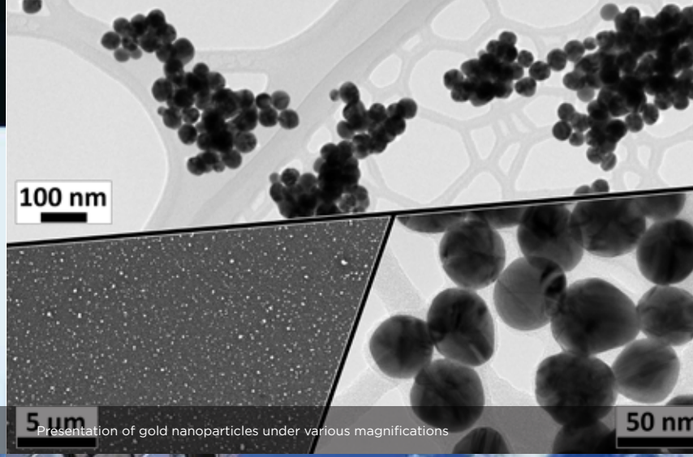
zc@zlatarnacelje.si
rebeka.rudolf@zlatarnacelje.si

www.zlatarnacelje.si

Year of establishment: 1844

Number of employees: 250

Production of gold nanoparticle suspensions



Presentation of gold nanoparticles under various magnifications

Artifact

Artifact

ŽustAl

SHORT DESCRIPTION OF THE COMPANY

ŽustAl d. o. o. is a modern, family-owned company situated in Žiri, Slovenia. Founded in 1996, it has grown into a successful business in CNC technology and welding throughout Slovenia and abroad. We have 3 and 5 – axis CNC milling machines.
With years of experience, high-quality work and traditional values, the company has established strong business relations by constantly adjusting to the modern market.
We specialise in the milling and welding of special materials such as Stainless steel, Duplex, Titanium, Inconel alloys, ARMCO® Pure Iron, Hastelloy, Aluminium 7075 and other materials.
Maintaining only high-quality production standards, we are constantly developing and creating long lasting growth opportunities.
Through recent years we have established many solid partnerships with other leading companies, specialising in CNC turning, grinding, water jet cutting, laser cutting and other techniques. All this makes it possible for us to take care of your projects, from the initial plan to the final product. Our firm is ISO 9001:2015 certified and our welders are certified for TIG and MIG/MAG welding in Standard SIST EN ISO 9606-2:2005 and SIST EN ISO 9606-1:2018.

Some of our references are:
- Science Industry (CERN, Kyma d.o.o., ASG Superconductors S.p.A.)
- Space industry (AIRWORKS S.r.l., Skylabs d.o.o.)
- Automotive industry (Kolektor d.o.o.)
- Hydropower industry (Tinck inzeniring d.o.o.)

SPACE SEGMENTS MOST RELEVANT TO THE COMPANY

- Space applications,
- Satellites (structures),
- Launchers,
- Space exploration,
- Space mining.

MAIN ACTIVITIES / PRODUCTS / SERVICES RELEVANT FOR THE SPACE SECTOR

- Milling and welding of special materials such as Stainless steel, Duplex, Titanium, Inconel alloys, ARMCO® Pure Iron, Hastelloy, Aluminium 7075 and other materials,
- 5-axis CNC milling,
- Wire erosion,
- Upgrades and improvements of manufacturing technologies for space applications.

VALUE PROPOSITION / OFFERING

Diversity of high-quality specialised services.

REFERENCES IN THE SPACE INDUSTRY

- AIRWORKS S.r.L.
- Skylabs d.o.o.

ŽustAl d.o.o.

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4226 Žiri, Slovenia

Grega Žust

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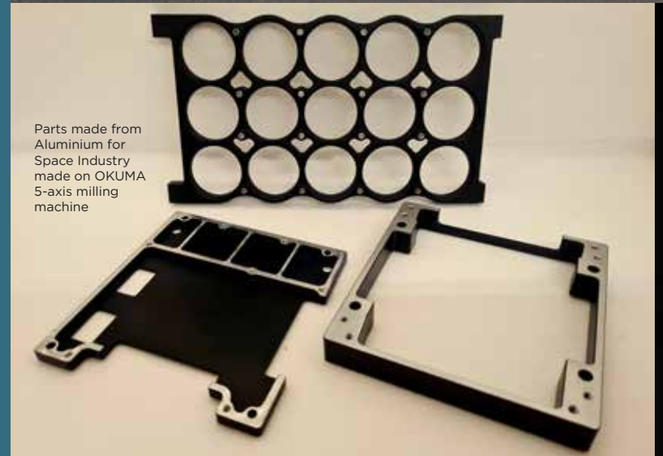
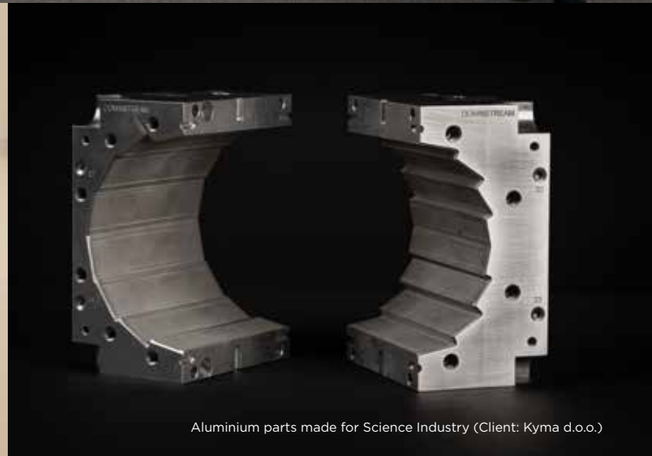
www.zustal.si

Team ŽustAl; Our employees



Parts made from Aluminium for Space Industry made on OKUMA 5-axis milling machine



Aluminium parts made for Science Industry (Client: Kyma d.o.o.)

RESEARCH INSTITUTIONS
TABLE OF CONTENTS

SHORT DESCRIPTION OF THE INSTITUTION

In Vitanje stands a fascinating building – unique not only in Slovenia, but also globally. It offers rich and engaging content about the vastness of the universe, extraordinary achievements, and incredible stories for all space enthusiasts. The core mission of the Center Noordung is to research, collect and communicate knowledge about space and space technologies to the public, in a way that clearly connects and intertwines science, the economy, tourism and art.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Life in space,
- Satellites,
- Space applications,
- Earth observation,
- Space exploration,
- Space mining,
- Space settlement.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Promotion of space technologies and the manifestation of human achievements in space,
- Innovative layout of the exhibitions about history of cosmology, visionaries of space travel and space technologies with the interplay of art, communicativeness and interactivity,
- Virtual reality experiences,
- Artificial intelligence in the form of a humanoid robot.

VALUE PROPOSITION / OFFERING

Modern and futuristic architecture stirs something more in us. Our unique place adds a cultural and humanistic contribution to human efforts to explore and understand the universe.

By connecting with and integrating into international connections, we ensure greater recognisability of Slovenian and international institutions in the field of space activities in all areas. Through the implementation of symposiums, we present and expand the significance of space exploration to the public and enable guided or independent tours of space exhibitions.

REFERENCES IN THE SPACE INDUSTRY

Cooperation with:

- United States Embassy in Slovenia,
- NASA's Johnson Space Center,
- The Smithsonian Institution
- Partner of ESA ESERO education program for Slovenia

Center of Space Technologies Herman Potočnik Noordung

Na vasi 18,
3205 Vitanje, Slovenia

Neža Pavlič Brečko, director

+386 40 300 052

neza.pavlic.brecko@center-noordung.si
info@center-noordung.si

www.center-noordung.si

Geodetic Institute of Slovenia

Jamova cesta 2,
1000 Ljubljana, Slovenia

Dalibor Radovan, Head of R&D sector

+386 1 200 2900
+386 31 244 873 (Dalibor Radovan)

dalibor.radovan@gis.si

www.gis.si

SHORT DESCRIPTION OF THE INSTITUTION

The Geodetic Institute of Slovenia (GIS) is a leading Slovenian public institution for geodetic, geoinformatic, cartographic, photogrammetric and hydrographic research and development, established in 1953. A significant portion of the projects is carried out for national ministries and agencies.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

GIS processes all types of remote sensing imagery for the supervision of agricultural subsidies and land cover mapping. It is also authorised to distribute precise GPS/GNSS data, maritime hydrographic data, and national periodical aerial surveys dating back to the Second World War.

VALUE PROPOSITION / OFFERING

GIS serves as a bridge between the public, private and research sectors, integrating systematic spatial solutions at the national level. As a public institution, GIS is uniquely positioned to implement remote sensing data into public administration, with in-depth knowledge of the relevant processes and legislation.

REFERENCES IN THE SPACE INDUSTRY

- Monitoring of illegal and incompliant constructions with machine learning,
- Mapping of intermittent water bodies from satellite imagery and chemometrics in combination with spectral imaging,
- Land use and land cover monitoring.

Jožef Stefan Institute

SHORT DESCRIPTION OF THE INSTITUTION

The Jožef Stefan Institute is Slovenia's leading research organisation, conducting a broad spectrum of basic and applied research in the natural sciences and technology. With over 1,200 staff members, the institute specialises in fields such as physics, chemistry, biochemistry, electronics, information science, nuclear technology, energy utilisation and environmental science.

The institute's main headquarters is located at Jamova 39 in Ljubljana, with additional facilities at Teslova 40, Tržaška 134, and the Reactor Centre Podgorica in Dol near Ljubljana.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Space mining,
- Space applications,
- Life in space,
- Satellites,
- Ground systems,
- Space exploration,
- Space settlement.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Characterization of minerals,
- Extraction of the required elements,
- Synthesis of necessary compounds for further value chain (metallurgy, additive manufacturing, etc.),
- Artificial intelligence,
- Machine learning,
- Design of optimisation algorithms,
- Food data mining,
- Adaptive computing platforms,
- Image processing,
- Decision support and citizen science,
- Propulsion Systems (Ion Thrusters): Research and optimization of plasma parameters for efficient space propulsion,
- Material Testing in Plasma Environment: Evaluating material resistance and durability in plasma conditions for space applications,
- Nano Generators and Nano Energy: Development of energy harvesting systems using plasma-based processes,
- Plasma-Based Food Processing and Decontamination: Using plasma technology to enhance food safety and extend shelf life by effectively decontaminating food products,
- Confinement studies,
- Hypoxic bed rest studies,
- Development and evaluation of countermeasures,
- Evaluation of resistance vibration exercise in combination with artificial gravity as a potential countermeasure,
- Sub part-per-million (ppm) detection levels and wide mass range (10–300 AMU) for gaseous trace species for planetary atmosphere analysis or cabin crew atmosphere monitoring,
- Trace gas analysis for cabin crew monitoring and planetary prospecting,
- Sub part-per-million (ppm) detection levels for bio-signature molecules in liquid samples in search for other forms of live organisms in space.

Jožef Stefan Institute

Jamova cesta 39,
1000 Ljubljana.

prof. dr. Boštjan Zalar

+386 1 477 35 12

bostjan.zalar@ijs.si

https://www.ijs.si/ijsw/V001/JSI

VALUE PROPOSITION / OFFERING

- Comprehensive mineral characterisation using ICP-OES, XRD and Raman spectroscopy
- Research and development of extraction technologies, delivering efficient, tailored solutions
- Extensive knowledge and experience in inorganic and organometallic chemistry, enabling the synthesis of even the most complex compounds
- Scientific and applied research in computer science for diverse data applications
- Strong expertise, flexibility, robust support infrastructure with advanced analytical tools, and close ties to research and academic institutions
- The ESA ground-based facility PlanHab, maintained by the Jožef Stefan Institute, is the only facility in the world conducting hypoxic bed rest studies and the only one housing a short-arm human centrifuge within a hypoxic chamber
- Extensive expertise in plasma processes with applications in space technology, including propulsion and materials testing
- Focus on the development of plasma-based materials processing techniques for extreme space environments
- Proven capability in applying plasma technology across a wide range of sectors
- Strong commitment to collaborative research and partnerships with industry to advance innovations in space technology

REFERENCES IN THE SPACE INDUSTRY

- Active collaboration within the Horizon 2020 MSCA project: UTOPIAE - Uncertainty Treatment and Optimisation In Aerospace Engineering, http://utopiae.eu/,
- Partner in the Horizon Europe MSCA project: EXOWORLD - Understanding the evolution of EXOplanets and towards habitable WORLDs, https://cordis.europa.eu/project/id/101086149,
- Research on error correction in FPGA circuits useful in space applications, resulting in a journal paper: Legat, Uroš, Biasizzo, Anton, Novak, Franc. A compact AES core with on-line error-detection for FPGA applications with modest hardware resources. Microprocessors and microsystems, DOI: 10.1016/j.micpro.2011.03.001,
- Research on stellite scheduling optimisation, resulting in a journal paper: Petelin, Gašper, Antoniou, Margarita, Papa, Gregor. Multi-objective approaches to ground station scheduling for optimisation of communication with satellites. Optimisation and engineering.
- DOI: 10.1007/s11081-021-09617-z,
- Collaboration with the Slovenian company Cosylab which carries out strong activities in the space sector,
- Spacecraft Atmosphere Monitor: https://en.wikipedia.org/wiki/Spacecraft_Atmosphere_Monitor,
- Space Science Reviews: https://link.springer.com/article/10.1007/s11214-020-00785-5,
- Several completed and ongoing national and international research projects funded by national and foreign research agencies, NATO and the European Commission,
- "Lunar Habitat Simulation" (ESA Topical Team),
- "LunHab: Lunar Habitat Simulation with male participants" (ESA contract),
- "FemHab: Lunar Habitat Simulation with female participants" (ESA contract),
- "PlanHab: Planetary Habitat Simulation" (EC FP7 contract),
- "Individual variation in human response to prolonged bed rest in Slovenia bed rest programme" (ESA contract),
- "FAVE 1: Feasibility study regarding resistance vibration training on a short arm human centrifuge" (ESA contract),
- "FAVE 2: Feasibility study regarding resistance vibration training" (ESA contract);
- "INTREPID" (ESA contract),
- "SAHC: Short Arm Human Centrifuge" (ESA loan agreeement),
- "Implementation of 60-d hypoxic bed rest for ESA" (ESA contract),
- "BioMechSANS (ESA contract. Partners: University of Caen, France; DRL Koeln, Germany; Faculty of Medicine, University of Ljubljana, Slovenia. Principal partner: 3M, Slovenia),
- "MIBER_RNA" (ESA contract. Principal partner: Karolinska Institutet, Sweden),
- "BRAVE Cart" (ESA contract. Principal partner: Faculty of Medicine, University of Ljubljana, Slovenia)",
- https://www.esa.int/ESA_Multimedia/Images/2021/10/New_spin_on_space_research.

NACIONALNI INŠTITUT ZA BIOLOGIJO
NATIONAL INSTITUTE OF BIOLOGY

SHORT DESCRIPTION OF THE INSTITUTION

The National Institute of Biology (NIB) conducts both basic and applied research in areas including viruses, bacteria, plants, invertebrates and higher-order animals, with a particular focus on biomedical topics. NIB works in close cooperation with affiliated universities, research institutions, and the private sector in Slovenia and abroad. This synergy ensures that the knowledge developed at NIB is made widely available to society through educational and outreach activities and benefits the business community through practical application and technology transfer.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Life in space,
- Space applications,
- Earth observation,
- Space exploration,
- Space settlement.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Space food production: development of crops and/or algae production kit for optimised yield in space by adapting existing technologies,
- Studying the impact of decreased gravity and space radiation on human health, applying advanced test systems to simulate conditions in space and human exposure to these conditions, and furthermore study and potentially develop new therapies against cancer in the decreased gravity and space radiation environment,
- Development of products based on raw satellite measurements and tailored to waters. Such products (e.g. algal bloom detection) could benefit aquaculture, fisheries, tourism or other sea-based enterprises (e.g. desalination plants),
- Monitoring of biological systems in space: (i) plant and microorganism biosensors that enable monitoring of target molecular mechanisms of growth, development and interactions in situ (ii) on-site diagnostics of microorganisms, e.g. pathogens or endophytes, (iii) analysis of water and air for biological agents and development of methods to control sterilisation techniques and materials with antimicrobial activity,
- Monitoring of Earth factors from space: Interactive real-time images of the Earth and multispectral images allow the development of systems for analysis/detection of plants under stress, and it is possible to develop sensor plants for stress.

VALUE PROPOSITION / OFFERING

NIB offers:

- Creation of new fundamental knowledge through basic and applied research in biology and related sciences, environmental protection, biotechnology and biomedicine
- Knowledge transfer to practical application, aimed at improving quality of life, supporting environmental policy, and developing biotechnology for the needs of national and local institutions, as well as economic stakeholders
- Access to high-tech instrumentation and infrastructure

National Institute of Biology

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National Institute of Chemistry

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Center for Development,
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NATIONAL INSTITUTE OF CHEMISTRY

SHORT DESCRIPTION OF THE INSTITUTION

The National Institute of Chemistry is a globally recognised research organisation advancing chemistry and related fields. We focus on developing impactful technologies and products through strategic partnerships with industry. Our DUBT Center and the Department of Inorganic Chemistry and Technology lead our efforts in space applications, specialising in catalysis for energy, CO_2 capture, hydrogen generation, and the development of lightweight materials and hydrogels for use in space.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Life in space,
- Space applications,
- Space exploration,
- Space mining,
- Space settlement.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Materials and processes for energy and chemical production: CO_2 capture from the atmosphere and chemical conversion processes; thermal-, photo-, electrocatalysis; in situ hydrogen, methane, alcohols, olefins, ammonia; rapid low/high temperature induction heating; solar-electrolysis/solar-induction heating systems,
- Hydrogel and lightweight composite development: hydrogel formation; production of hydrogel ingredients in space; 3D printing inks, injectables and scaffolds, carriers and coatings,
- Circular approaches: green H_2 production optimisation, wastewater recycling for water treatment and simultaneous H_2 recovery; recovery and recycling of inorganic materials (catalysts, batteries, other advanced metal components); recyclable polymer materials / adaptive networks/ bio-based, biomass-derived, new polymer recycling processes; new DES extraction procedures; fractionation of organic waste and plant residues.

VALUE PROPOSITION / OFFERING

- Leading in R&D for catalysis and chemical reaction engineering, particularly for hydrogen production, H_2 and CO_2 conversion and biomass utilization,
- High-end expertise in various carbon capture methods and standard and advanced material characterisation techniques for i.e. catalysts, sorbents, electrodes and membranes,
- Equipped with a facility (Center DUBT) for high TRL development of chemical processes at ambient to high pressures and temperatures in ATEX test environments.

REFERENCES IN THE SPACE INDUSTRY

- Design and construction of a modular induction catalytic fixed bed reactor for in situ resource generation (used in ESA MICRO project for CO_2 methanation at increased pressures, 2023-2025, led by Dr. Janvit Teržan),
- Mitigation of CO_2 levels with the confined space by advanced metal-organic framework foam adsorbent (ESA project, 2023-2024, led by Dr. Matjaž Mazaj),
- Ongoing national and international research and industrial R&D projects.

SPACE-SI
CENTRE OF EXCELLENCE FOR SPACE SCIENCE AND TECHNOLOGIES

SHORT DESCRIPTION OF THE INSTITUTION

SPACE-SI specialises in the development of microsatellite technologies and advanced Earth observation (EO) missions. The organisation provides satellite video and multispectral imagery from space and operates three ground stations in Slovenia for UHF, S-band, and X-band satellite communications. SPACE-SI developed Slovenia's first microsatellite mission, NEMO-HD, along with the STREAM transportable ground station and the STORM processing chain for EO data. The centre is equipped for thermomechanical testing and the integration of materials, components and complete space systems. The main applications of SPACE-SI technologies support advanced EO missions focused on data acquisition for Digital Twin Models of Smart Cities and River Basins, enabling responsive climate action. These innovative approaches combine precise, agile satellite video and multispectral data acquisition for real-time and near-real-time ecosystem monitoring.
SPACE-SI is developing a satellite constellation and demonstrating its technological capabilities on all continents within the framework of ESA, the United Nations, Team Europe programmes and the global Coalition for River Basin Innovation and Management. Recent technology demonstrations have focused on using EO data to model ecosystem interactions across urban, industrial, agricultural, forestry, mining, and transport sectors.
This includes satellite monitoring and digital twin modelling of SDG hotspots in environments exposed to multi-hazard risks such as floods, droughts, forest fires, and other natural or human-induced disasters. In collaboration with its global partner network, SPACE-SI explores innovative approaches to financing space missions for climate action and develops science-and-arts initiatives to communicate EO findings to the wider public.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Ground systems,
- Satellites,
- Space applications,
- Earth observation.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

Small satellite mission design and operation (NEMO-HD):
- Video and multispectral imaging for low latency and real time Earth Observation,
- Agile and precise tracking of stationary scenes and Earth Observation paths.

Ground station development and operation (STREAM):
- Transportable ground station for S, X, Ka/Ku bands,
- Autotrack and feed technologies.

Earth Observation Data Processing and Applications (STORM):
- Video analytics for environmental and economic indicators,
- Monitoring of natural disasters, river basins, ports, etc.

Testing and integration of materials, components and systems:
- Thermomechanical testing in TVAC,
- Nanoindentation of materials.

VALUE PROPOSITION / OFFERING

SPACE SI develops NewSpace products and services from satellite and ground segment components to complete end-to-end solutions for advanced space missions.

REFERENCES IN THE SPACE INDUSTRY

Many national and international research projects and space missions for the ESA, European Commission, Slovenian Research Agency as well as NEMO-HD, STREAM and STORM systems.

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FGG UNIVERSITY OF LJUBLJANA
Faculty of Civil and Geodetic Engineering

SHORT DESCRIPTION OF THE INSTITUTION

The Faculty of Civil and Geodetic Engineering of the University of Ljubljana was founded in 1919. The Faculty offers study and research programmes in geoinformatics and Earth observation. It is the only Faculty in Slovenia offering bachelor's, master's and doctoral programmes in this field. The Faculty of Civil and Geodetic Engineering has been involved in several EU research programmes, e.g. the 6th and 7th Framework Programmes, H2020, COST, Leonardo da Vinci, ESPON, INTERREG. Research and development is carried out in various research areas in the field of geospatial data – from sensors for geospatial data acquisition, including mass data acquisition, to satellite remote sensing, photogrammetry, geoinformatics, geospatial data modelling and geospatial data infrastructure.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Earth observation.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Optical image processing,
- Radar image processing, including InSAR processing,
- Applications of Earth Observation,
- Timeseries and machine learning algorithms development,
- Education in Earth observation and geoinformatics.

VALUE PROPOSITION / OFFERING

With nearly 30 years of experience in Earth observation, image processing, and application development, the Faculty of Civil and Geodetic Engineering offers proven expertise in the use of remote sensing data for a wide range of applications. These include natural disaster monitoring, agriculture and forestry, environmental monitoring, land cover and land cover change mapping, water body detection, and displacement detection and monitoring.

REFERENCES IN THE SPACE INDUSTRY

- National and international projects funded by national and foreign research agencies, companies, the European Commission, and the European Space Agency,
- InSAR processing for infrastructure monitoring workflow,
- Time-series analysis workflows,
- Applications.

UNIVERSITY OF LJUBLJANA | FRI Faculty of Computer and Information Science

SHORT DESCRIPTION OF THE INSTITUTION

The Faculty of Computer and Information Science of the University of Ljubljana is Slovenia's leading educational and research institution for computer and information science. The faculty's two main functions are educating undergraduate and graduate computer science experts of various profiles, engaging in research that generates new knowledge, and uncovering solutions to contemporary problems. The faculty has a long tradition of internationally recognized research achievements in the field of AI/ML in terms of methodology as well as applications to other domains, among them medicine, biotechnology, and robotics. Additionally, the Faculty has significant expertise in data visualization, specializing in point cloud data, volumetric data, and large-scale data visualization and analysis, with collaborations on major international institutions such as CERN.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Ground systems,
- Satellites,
- Earth observation,
- Space applications,
- Space exploration.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Developing novel AI/ML solutions for Earth observation and space exploration,
- Integrating sensor systems in robotics applications,
- Visualization, exploration and analysis of various data sources,
- Developing simulations and digital twins,
- Developing VR/AR applications for personnel training and data analysis.

VALUE PROPOSITION / OFFERING

The Faculty of Computer and Information Science offers a broad range of expertise in computer systems applicable to space exploration and Earth observation. We have in-depth knowledge of modern AI/ML techniques, enabling us to address complex challenges in automated data analysis, including limited training data, sensor fusion, and real-time processing. Our experience also covers data analysis and visualisation, as well as the development of systems involving human interaction, such as novel user interfaces and training scenarios.

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FE | UNIVERSITY OF LJUBLJANA Faculty of Electrical Engineering

SHORT DESCRIPTION OF THE INSTITUTION

The Faculty of Electrical Engineering at the University of Ljubljana is a premier educational and research institution dedicated to the advancement of electrical engineering. We are committed to nurturing top-tier specialists in this dynamic field. Our focus extends beyond traditional electronics to encompass information and communication technology, automation, robotics, biomedical engineering, mechatronics, renewable energy, and multimedia communication. These areas are unified by cutting-edge information technology, innovative communications and multimedia solutions.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Ground systems,
- Satellites.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- GNSS Receiver Testing: Multi-GNSS simulations for device evaluation,
- Antenna Technology: Design, prototyping, and performance measurement,
- Microwave-Photonic Systems: Solutions for satellite applications,
- Solar Cell Technology: Development of solar cells for space applications,
- Miniature Piezoelectric Valve: For atmospheric descent sampling,
- Radar Development: Design and prototyping of radar systems,
- Autonomous Mobile Platforms: Development of intelligent, self-guided platforms,
- Mission Management and Operations: Planning and execution of satellite missions.

VALUE PROPOSITION / OFFERING

Research and Development: Over 40 years of experience in satellite communications, specializing in:

- Electrical components,
- Microwave and microwave-photonic systems,
- Photovoltaics.

Core Capabilities:

- High-frequency circuit design and prototype manufacturing,
- Antenna design,
- Rapid prototyping of complete high-frequency electrical and/or optical systems,
- Extensive testing and measurement capabilities up to 67 GHz, including:
  - Radiation pattern measurement,
  - Network measurement,
  - Spectrum observation.

REFERENCES IN THE SPACE INDUSTRY

The Faculty of Electrical Engineering has a long-standing involvement in the space sector, with its hosting of the ground station for the NEMO-HD mission serving as a prime example. The Faculty possesses deep expertise in ground system signal transmission and reception, satellite RF design, and GNSS signal monitoring. Through collaborations with leading scientific institutions and space equipment companies, it has made significant contributions to the advancement of space technology.

FS UNIVERSITY OF LJUBLJANA
Faculty of Mechanical Engineering

SHORT DESCRIPTION OF THE INSTITUTION

The University of Ljubljana, Faculty of Mechanical Engineering is the largest institution in Slovenia dedicated to mechanical engineering education and research. With over 450 employees, it specialises in power and process engineering, machine design, mechanics and maintenance, production engineering, mechatronics, micromechanical systems and automation.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Launchers,
- Life in space,
- Satellites,
- Space applications,
- Space exploration,
- Space mining,
- Space settlement.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Planetary exploration: core drilling techniques for sampling Martian subsurface materials,
- Material science: focus on lightweight designs, impact resistance, and fatigue properties of composites and alloys; development of advanced functional polymer composites and smart materials with customized properties,
- Additive manufacturing: techniques for producing mid-sized to large components,
- Fluid dynamics engineering: studies on cavitation, thermography, high-speed visualization, and water treatment technologies; optimization of hydraulic components in high-energy-density fluid power systems,
- AI and robotics: implementation of AI-based condition monitoring; research on autonomous multi-rover systems,
- Laser technology: development of high-speed, application-specific laser prototypes,
- Energy systems modeling: Advanced models for batteries, fuel cells, and electrolyzers, ensuring system-level efficiency.

VALUE PROPOSITION / OFFERING

- Innovation in space applications: development of exploration rovers utilizing advanced technologies,
- Characterization devices: custom-built devices for analyzing mechanical, thermal, and electrical properties of advanced polymer composites and smart materials,
- Predictive solutions: analytical tools for forecasting the long-term behavior of advanced materials,
- Cryogenic forming applications: development of forming techniques applicable in cryogenic environments,
- Experimental facilities: state-of-the-art setups for studying phenomena in space-relevant fluids,
- AI-based failure prediction: utilizing sensor data for predictive analytics,
- Laser system expertise: high-performance laser technologies for communication and remote detection,
- Energy system optimization: design and optimization of components for batteries, fuel cells, and electrolyzers.

REFERENCES IN THE SPACE INDUSTRY

The Faculty of Mechanical Engineering engages in space technologies through various ESA projects and industry collaboration, with our researchers publishing extensively in scientific journals.
List of ESA projects:

- Predicting residual service life of sandwich composites for reusable space vehicles, 2024-2025,
- Self-organising millirobot swarms for autonomous modification of unknown, granular terrain, 2024,
- Feasibility study of using rigid-body dynamics model to reduce vibrations of miniature rotary integral Stirling cryocoolers, 2024-2025,
- Device for non-invasive determination of jugular vein pressure and the risk of thrombosis, 2023-2024,
- SpaceDent, 2023,
- Development of tailored surfaces for a more efficient production of Hydrogen and Oxygen in-space via PEM electrolysis, 2023-2025,
- Prediction model of countermeasures efficiency on cardiovascular system and fluid shifting in simulated microgravity conditions, 2022-2023,
- Microgravity Applications Program project AO-2004-111 (Convective boiling and condensation), 2016-2019,
- Experiments and simulations on cavitation and cavitation erosion in cryogenic liquids, 2015-2017,
- Cavitation in Thermosensible Fluids, 2011-2015.

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FMF UNIVERSITY OF LJUBLJANA
Faculty of Mathematics and Physics

SHORT DESCRIPTION OF THE INSTITUTION

The University of Ljubljana is Slovenia's oldest and largest higher education and scientific research institution. Research is essential to our department, and the programs offered to our students are of the highest level by international standards, which is a direct consequence of our research activities. It contributes more than 30% to the University's "excellence" scores when calculated in various university ranking lists. This is an indisputable signature of the highest scientific standards of the working environment.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Satellites,
- Space exploration.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

The astronomy group is active in research, teaching and scientific outreach in astrophysics. Much of the research effort is related to observing the universe, using ESA's James Webb Space Telescope, Gaia mission, Solar Orbiter, Proba-3, Plato, Athena, as well as large ground-based telescopes. We run the largest and the most complete set of courses in physics in the country, with an annual enrolment of a ~130 students. The group is engaged (weekly) in public lectures, interviews for the media, and in STEM-promoting activities for secondary schools.

The meteorology group focuses on research related to the Earth-atmosphere system, such as the application of machine learning techniques in meteorological forecasting, analysis and changes in atmospheric circulation, and climate change. All the research is ultimately related to better predictions of current weather and future climate here on Earth.

The Faculty of Mathematics and Physics is also active in research of nonequilibrium quantum and statistical physics. All three groups led several ESA research projects in the last decade.

VALUE PROPOSITION / OFFERING

The Faculty of Mathematics and Physics is an active participant in several ESA space missions, positioning us as a valuable interface between end users (scientists) and industry. We specialise in advanced data manipulation and artificial intelligence methods, with the expertise and staff to develop and implement complex algorithms for modelling a range of processes, including satellite dynamics and weather simulations or forecasts. We are also equipped to carry out demanding serial or massively parallel simulations using our own and associated HPC facilities.

REFERENCES IN THE SPACE INDUSTRY

- Over the past ten years, more than 500 peer-reviewed papers have been published, with over 55,000 citations.
- Leadership roles include an ERC Advanced Grant, an ERC Starting Grant, and six ESA research projects.
- Recognitions include a national Zois Award for research excellence, a Zois Recognition Award, and a Zois Award for Ambassador of Science.
- The faculty has also hosted several international conferences in the fields of astronomy and meteorology.

University of Maribor

Faculty of Mechanical Engineering

SHORT DESCRIPTION OF THE INSTITUTION

The Faculty of Mechanical Engineering has operated as a scientific, research, and educational institution for over six decades.

We offer a range of accredited study programmes across all three cycles. Undergraduate (1st cycle) programmes include Mechanical Engineering, Industrial Engineering in Mechanical Engineering, Mechatronics, Environmental Engineering, Textile Design Technologies and Design, and Textile Materials. Master's (2nd cycle) programmes cover Mechanical Engineering, Industrial Engineering in Mechanical Engineering, Mechatronics, Environmental Engineering, Product Design, and Design and Textile Materials. Doctoral (3rd cycle) programmes include the Doctoral School FS and Industrial Engineering. Our strong and growing collaboration with industry has shaped the faculty's scientific and research orientation, with many research results successfully transferred to various sectors of Slovenian industry.

The Faculty of Mechanical Engineering is among the most successful members of the University of Maribor, measured by student numbers, graduation rates at all levels, scientific and research output, extensive industrial cooperation, well-equipped laboratories, internationally recognised academic staff, and a well-established international exchange and collaboration network.

We maintain a clear development vision based on the quality of all our activities — education, research, development, and community engagement — and on the consistent evaluation and accreditation of our study programmes. Each year, we invite new generations of students to enrol in our forward-looking undergraduate programmes. Interest in our courses continues to grow, supported by the excellent employment prospects of our graduates.

Rapid economic growth, along with modernisation in technology and production processes, demands new experts with broad knowledge and strong career opportunities.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Satellites;
- Space applications;
- Development of space devices
- Space exploration.

Development and characterisation of new functional nanomaterials is underway for various aerospace applications, with a focus on miniaturised devices. Research includes materials enhanced with nanocomponents, which demonstrate significantly improved antimicrobial properties compared to conventional materials. Efforts are also directed towards the development of rapid diagnostic tests capable of quickly detecting the presence of various viruses – a particularly important feature in space environments.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Development of new materials for space applications
- Introduction of new technologies for space exploration
- Performing demanding characterizations and testing
- Prototype studies in gorund systems

VALUE PROPOSITION / OFFERING

- Scientific excellence
- State-of-the-art research equipment
- The ability to apply

REFERENCES IN THE SPACE INDUSTRY

- ESA project (2024-2026): LyoGold in PCB fabrication concerns for mmWave Circuits in next generation of space telecommunications

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SHORT DESCRIPTION OF THE INSTITUTION

The University of Nova Gorica is a research oriented, internationally established university, providing creative environment which fosters top achievements in cutting-edge fields of science, technology and art. It promotes multidisciplinary research and contemporary study programmes with innovative teaching approaches designed to build partnerships between industry and academia and securing a high level of employability to national and international students. The Centre for Astrophysics and Cosmology (CAC) is the largest astrophysics research group in Slovenia. Its activities are interwoven with international research collaborations and focus on high-energy astrophysics: extremely energetic astrophysical sources, astrophysical transients, dark matter.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Space exploration,
- Satellites.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Research in collaborations Fermi, Swift, Gaia, HST, JWST, THESEUS, Cherenkov Telescope, Array Observatory (CTAO), Pierre Auger Observatory, Vera Rubin Observatory and others,
- Study programmes in Physics and Astrophysics at undergraduate and graduate level,
- Remotely controlled optical telescopes in Chile,
- Outreach, web portal www.portalvvesolje.si.

VALUE PROPOSITION / OFFERING

- Research in theoretical and observational astrophysics,
- Numerical modelling of processes and phenomena,
- Numerical relativity,
- Orbital dynamics calculations,
- Machine learning and other advanced methods for data analysis,
- Characterisation of atmospheric properties.

REFERENCES IN THE SPACE INDUSTRY

2014-2024:

- 310 refereed papers with 53,000 citations,
- 7 national Zois and Apple of Inspiration awards,
- Organisation of international events: first International Astronomical Union (IAU) Symposium in Slovenia (2016), Gaia Science Alerts Workshop (2018), Fermi Collaboration Meeting (2019), LSST@Europe5 (2023),
- Prominent roles in international community: membership in the European Astronomical Society Council, IAU – Div. D Steering Committee, CTAO Council; evaluators for observing projects with NASA and ESA satellites.

Leadership of:

- Horizon Europe MSCA COFUND project SMASH (Machine Learning for Science and Humanities, 10 MEu),
- ESA PRODEX Gaia Astrometric Microlensing Events – GAME,
- ESA PRODEX Gaia Transients,
- ESA PECS Relativistic Global Navigation Systems,
- ESA PECS SLOIONO.

Participation in:

- Horizon Europe DN TALES,
- H2020-SPACE-2018 HERMES-SP (High Energy Rapid Modular Ensemble of Satellites – Scientific Pathfinder),
- ESA PECS A Fast Tool for Timing Analysis of Transient Astrophysical Phenomena.

SHORT DESCRIPTION OF THE INSTITUTION

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SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Earth observation,
- Satellites.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Research in aerosol physics and chemistry,
- Development and applications – instruments for aerosol research,
- Undergraduate and graduate study programs in Physics and Environment (Earth Science),
- Outreach in media, public events.

VALUE PROPOSITION / OFFERING

- Characterisation of atmospheric properties for satellite cal/val,
- Research in atmospheric physics and chemistry,
- Development of in-situ instrumentation for the determination of aerosol properties.

REFERENCES IN THE SPACE INDUSTRY

- 2012–2022: 165 refereed papers with 6578 citations, including very high-impact publications (cited more than 500-times),
- 4 patents – aerosol instrumentation,
- 2 national Puh awards for research excellence,
- Prominent roles in international community: membership in the UN, EU and national committees on climate and science; journal boards; international and national standardisation bodies.
- Members of the CAR have led (as principal investigators, PI) international projects and work-packages therein:
- ESA – Support to the Aeolus Validation and Calibration through Airborne Aerosol In-situ Observations in the Tropics (PI),
- H2020 – Photonic Accurate and Portable Sensor Systems Exploiting Photo-Acoustic and Photo-Thermal Based Spectroscopy for Real-Time Outdoor Air Pollution Monitoring (WP lead),
- ADEME, France – Source apportionment of PM10 in the Arve Valley (France) and evolution of the contribution of biomass burning emissions (co-PI),
- EUREKA Eurostars – Real Time Analyzer of Carbonaceous Aerosols (PI),
- Commissariat à l'énergie atomique et aux énergies alternatives, France – Development and validation of an operational tool for the discrimination between fossil versus modern fuel combustion aerosols: implication for air quality and climate abatement strategies (PI),
- EUREKA Eurostars – Fast and loading compensated Aethalometer – an instrument for real time measurement of light absorbing carbonaceous aerosol (PI).

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ZRC SAZU

SHORT DESCRIPTION OF THE INSTITUTION

The Department of Remote Sensing, part of the Institute of Anthropological and Spatial Studies at ZRC SAZU, brings together leading Slovenian experts in remote sensing. Our work focuses on the development and application of machine learning methods in remote sensing, spatial analytics, and archaeology. We address challenges such as automatic satellite image registration and advanced image classification, with particular emphasis on the development of new artificial intelligence techniques and the modelling of natural and cultural landscapes.

In collaboration with other academic groups, we carry out innovative interdisciplinary research at the intersection of archaeology, anthropology, and spatial studies.

SPACE SEGMENTS MOST RELEVANT TO YOUR INSTITUTION

- Earth observation.

MAIN ACTIVITIES RELEVANT FOR THE SPACE SECTOR

- Providing AI-ready training datasets from satellite and airborne platforms for various applications,
- Analysing the importance of optical imagery preprocessing procedures (radiometric and geometric corrections),
- Development of ground software for small satellites,
- Long experience with integration of EO data and products into new domains,
- Development of special algorithms for processing airborne laser scanning data,
- Testing the applicability of machine learning methods in different fields.

VALUE PROPOSITION / OFFERING

In more than 25 years, we have successfully applied Earth observation in various applications ranging from rapid mapping and monitoring, land cover mapping in different landscapes, ground and air temperature modelling, detection of water bodies, and analysis of biophysical parameters for agriculture and forestry. We provide fast, accurate and reliable spatial data for efficient management of the natural and built environments.

REFERENCES IN THE SPACE INDUSTRY

A large number of completed and ongoing national and international projects in the field of basic and applied research, funded by various research agencies, the European Commission, the European Space Agency, the Inter-American Development Bank, various national and local government institutions and private companies.

- Developers of Relief Visualisation Toolbox (RVT), the go-to tool for visualisation of raster elevation model datasets,
- Developers of algorithms for the processing of NEMO-HD small satellite data.

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REPUBLIC OF SLOVENIA
MINISTRY OF THE ECONOMY, TOURISM AND SPORT