CZECH SPACE

DIRECTORY 2025/2026

INDUSTRY

START-UPS

ACADEMIA

STUDENT INITIATIVES

Czech Republic
Ministry of Transport

„The Czech Republic considers space and space activities as strategic areas with high added value for our society, national economy, security, science and technology.“

Content

Organisation of Space Activities

Since 2011 the Ministry of Transport of the Czech Republic is the coordinator of all space activities in the Czech Republic. For effective and transparent coordination, the Minister of Transport established a Coordination Council as his permanent advisory and initiatory body.

The Coordination Council consists of high level representatives of the Ministry of Transport, the Ministry of Industry and Trade, the Ministry of Education, Youth and Sport, the Ministry of the Environment, the Ministry of Foreign Affairs, the Ministry of Defence and the Office of the Government of the Czech Republic. The Coordination Council has established cross-sectional committees as an interface with industry and academia - "Industry and Applications" and "Science Activities". The "Security and International Relations" Committee deals with security and international aspects of space activities.

The Ministry of Transport has been responsible for elaborating and delivering the National Space Plan to the Government of the Czech Republic. The document has been updated in cooperation with other relevant Czech ministries and bodies and the new plan was approved by the Government in October 2019. The National Space Plan 2020 – 2025 represents a basis for decision-making of further Czech involvement in space, support of industry and academia, and participation in European and international projects and programmes. The Czech Republic acceded to the European Space Agency (ESA) in November 2008 and the Ministry of Transport provides the only formal interface to the European Space Agency in the Czech Republic. The Ministry of Transport is also responsible for all space issues in the European Union, in particular the European space policy and the administration related to Galileo and EGNOS programmes.

Concerning Copernicus Programme, it shares its responsibility with the Ministry of Environment. The successful bid for the European GNSS Agency (GSA) seat in Prague has also been coordinated by the Ministry of Transport team. The GSA has transformed into the Agency for the EU Space Program (EUSPA) in 2021.

CZECH SPACE PORTAL

Space Strategy and Major Activites

In terms of strategic objectives of the National Space Plan 2026+, through priority areas for intervention and sub-objectives, measures, aims to contribute to the Czech Republic:

- has a comprehensive and robust chain for the design, construction, operation, and use of small satellites and, in line with the technological profile of Czech industry, develops highly advanced products at the level of large subsystems or instruments and applications, including end-to-end solutions, and maximizes technology transfer from space activities to other sectors and vice versa;
- benefited from the use of satellite system data and services in a number of economic sectors for the needs of society, security, and defense;
- established and further developed strategic partnerships with international partners with the aim of creating comprehensive advanced technologies and solutions for commercial, scientific, and government use;
- had an educational and popularization ecosystem that systematically develops human potential for the space sector, inspires a new generation, and ensures the continuity of professional capacities;
- strengthened excellent scientific teams capable of participating as Principal Investigators in the instrumentation of national and international scientific missions;
- through state institutions, the Czech Republic acted as a key customer for Czech space technologies and applications, thereby actively supporting the development of new technologies and the implementation of innovations in practice, and had its own space and related ground infrastructure, capacities, and capabilities to ensure the self-sufficiency, security, and defense capabilities of the Czech Republic and its foreign partners and allies;
- had adequate financial resources for the development of space activities; the necessary institutional framework and human resources for the management of space activities in the Czech Republic.

Space activities of the Czech Republic include especially:

- Participation in ESA mandatory activities and especially in ESA optional programmes, which are the main tool for the development of Czech space activities.
- Participation in EU space programmes and in the EUMETSAT programmes.
- Securing ESA's support of space-related activities in the Czech Republic through a dedicated framework project.
- Development of space technologies, design, analysis and testing.
- Space applications development activities in several sectors, e.g. transport, industry, environment and resource management.
- Space-related scientific research at universities and institutes of the Academy of Sciences of the Czech Republic.

National Space Plan

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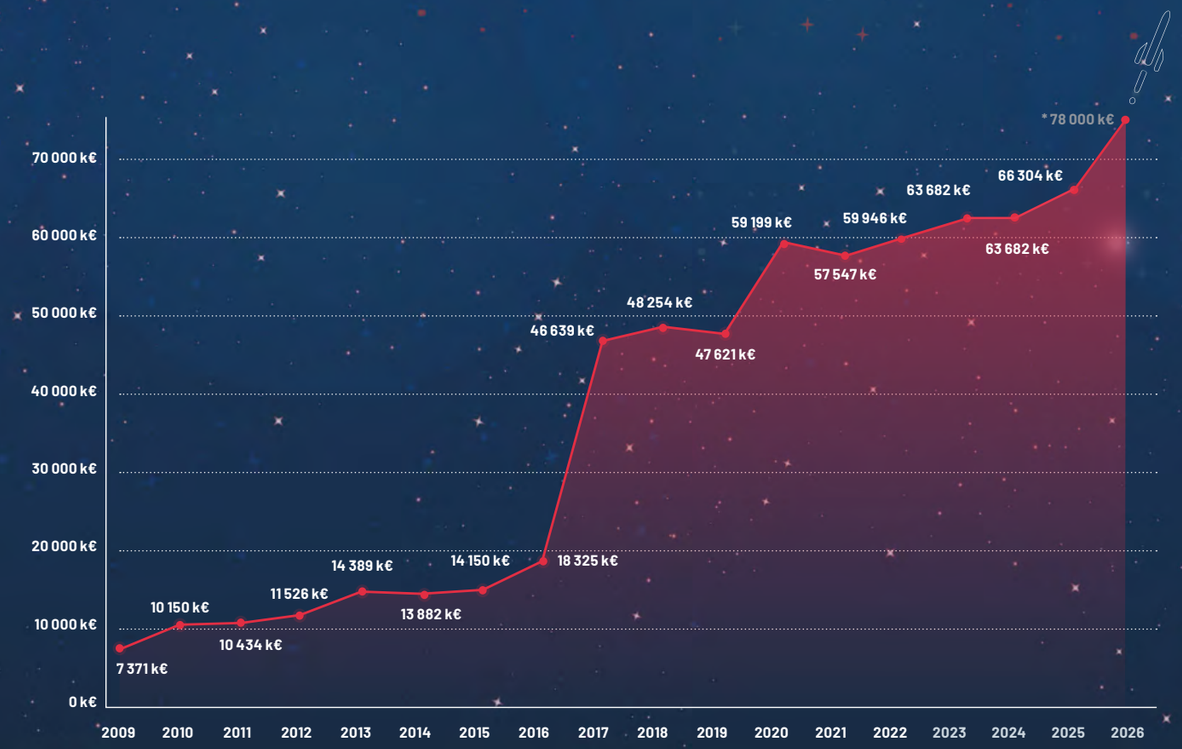
Contributions to ESA



*** Proposed budget**

Evolution of the Czech Space Activities

1978

First astronaut Vladimir Remek and satellite Magion

1996

ESA Cooperation Agreement signed

2008

ESA full membership

2010

IAC organised in Prague

2011

Ministry of Transport of the Czech Republic appointed as a national coordinator of space activities

2012

GSA moved to Prague

2018

First Czech Space Week

2021

EUSPA was established and replaced GSA in Prague

2022

2nd Czech Presidency of the Council of the EU and successful negotiation of a compromise on the new satellite IRIS² constellation for secure communication

2024

Launch of the national project Czech Space Journey, with the aim of maximizing the potential of space activities.

2025

Decision on the flight of the Czech astronaut to the ISS

Czech Space Capacities and Capabilities

Multi-Discipline Technologies

- **Design, Simulation and Testing of Mechanical Systems for Space Applications:** Stress, thermal and fluid dynamic calculations; Fatigue life and fracture mechanics evaluation; Design of highly loaded components and their optimization; Numerical computation involving complex physical effects; Climatic, mechanical and life-time testing of components, parts and materials; Additive manufacturing; Composite production and bonded sandwich structures, epoxy adhesives for extra high strength bonds; Production and delivery of qualified mechanical parts, assembled modules and subsystems.
- **Flight Hardware Design and Production:** Development of digital circuits and single-chip microcontrollers; In-flight use of wireless sensors; System health monitoring (SHM); Space hi-rel electronics cleanroom manufacturing activities; Products for crystal chemistry, growth of crystals for technical applications, optics including x-ray, acousto-optics, electro-optics etc.; Equipment for material sciences and technology in space; Development and manufacturing of apparatuses and devices according to specific requirements, including use of COTS components suitable for space environment.
- **Inertial Sensors for Space Application**
- **Electric Power and Controls for Space Applications:** Power management, including conversion and distribution; Electric actuation; Energy storage systems (including energy accumulation and generation); Thermal management;
- **Software:** On-board software (Flight Software for various missions; Complete software packages; StartUp SW, Mission critical SW & Application SW); Ground segment software (Satellite Control Systems, Mission Control System and EGSE; robotization of antennas and telescopes, control systems development, tracking software); Software development for the Earth Observation and Navigation Services Infrastructure.
- **On-board Systems:** avionics incl. hardware, software, network interfaces / data buses, modules to provide integrity of on-board data systems, integrated test-beds, AOCS.
- **Laser Technologies:** various laser instruments, laser communication, laser tracking of space debris (photon detectors), space resources prospecting and analysis.
- **Development of High Altitude Platforms/Pseudosatellites (HAPs)**
- **Midstream Segment:** Building of whole mission operation centres, uplink and downlink communication antennas and related infrastructure; Building and operation of data centres and archives, computational and dissemination platforms for EO or any other kind of space data; Big data computing, cloud computing.

Earth Observation (EO)

- EO data processing – multispectral, hyperspectral and SAR data. Development of new EO data based products (incl. integrated applications) based on EO data, e.g. SAR ground motion and infrastructure monitoring, SAR, multispectral and hyperspectral data for environment applications, agriculture, land use, land cover, monitoring or natural disasters, monitoring and modelling of atmosphere etc., development of new processing algorithms;
- Laser scanning data use / products development;
- Integration of EO data based information into GIS and customers systems, services for both midstream and end-users;
- Scientific EO data processing, e.g. GOCE, SMOS, SWARM and others;
- Machine learning and Artificial Intelligence for EO data processing; blockchain based services / technologies for EO;
- Spectroscopy, spectrometry, SAR interferometry, gravimetry;
- Calibration / Validation, development of Internet of Things (IoT) networks, which could serve for calibration and validation of EO data;
- Cryogenic and coolers for cooling of the payload on EO satellites;
- TIR polarising optics and acousto-optical filter;
- Optical systems and cameras for EO/deep space observation

Satellite Navigation

- Precise time and clocks (on-board management of atomic clocks or for precise time distribution through optical satellite networks); GNSS science (atmospheric effects on propagation of electromagnetic waves); space geodesy; precise orbit determination of satellites;
- Building and operation of GNSS permanent reference station networks (excl. manufacturing of the GNSS receivers / antennas); Developing software suites for real time monitoring performance of GNSS, across all international constellations and over extended periods, showing relative trends among different constellation developments;
- GNSS enabled applications in many domains (transportation and logistics, fleet management, intelligent transport systems, e-Call, drones, environmental protection, civil engineering, precise agriculture and forestry, personal tracking and health monitoring, location based services, sports, geo-marketing, media and entertainment etc.); autonomous mobility (automated and connected cars, precision agriculture by automated tractors and harvesting vehicles); crew management of police and rescue forces in crisis and emergencies; GNSS performance prediction SBAS Simulator, Machine learning.

Czech Space Capacities and Capabilities

Satellite Communication

- SatCom airborne terminals development for both civil and military aviation including unmanned aerial vehicles (UAVs), associated products like high power amplifiers, data links and security gateways (focus on safety critical air-ground data and voice communication for air traffic management);
- Secured quantum optical communication (unbreakable quantum encryption techniques, laser photon emitters and receivers and sensor heads);
- modelling of electromagnetic field propagation through the atmosphere;
- space and ground hardware development (super-capacitors, solar panels deployment mechanisms, antenna pointing mechanisms, propellant tanks and other components);
- Satellite TV, integrated applications.

Launchers and Propulsion Systems

- Mechanisms and composite and metallic structures; Low shock Hold Down Release Actuators;
- Monomers and polymeric materials (coatings, adhesives, casting resins); Synthesis and tailored surface modifications of nanoparticles; Nanocomposites and hybrid composites; Thermo-insulation materials; Multifunctional anticorrosive coatings;
- Embedded microcontrollers; In-flight use of wireless sensors; Structural health monitoring systems;
- Pyrotechnical systems; Separation systems for small satellites;
- Computational mechanics; System level design Launcher aerodynamics, aerothermodynamics, launch acoustics;
- Payload Fairing technologies; Isolation systems and payload comfort damping;
- High-performance Valves and control electronics;
- Inertial sensors for inertial navigation, on-board computer navigation and control systems Thrust Vector Control (TVC) technology based on electromechanical actuators;
- Electrically driven pumps for rocket propellants; High-performance valves for cryogenic rocket engines and their control electronics.

Space Situational Awareness (SSA)

- **Space Weather (SWE):** Provision of SWE services (Solar activity forecasts, Real-time Ionospheric monitoring, Daily geomagnetic forecasts, Radiation dosimetry); SWE sensors exploitation (Solar white light and H-alpha imaging, Solar radio observation, Ionospheric measurement, Geomagnetic observations); SWE Application development (Ionospheric disturbance detection and monitoring, Magnetospheric research, geomagnetic disturbance forecasts, Dosimetry applications for crewed space missions); SWE sensors development (various fields); SWE studies and modelling; SWE data processing;
- **Space Surveillance and Tracking (SST):** SST monitoring and cataloguing; SST data processing and Software applications development; SST Assets networking technologies; SST sensors development and qualification (optical and laser technologies); telescope control and processing software;
- **Near Earth Objects (NEO):** NEO observations & information provision; NEO mitigation support (incl. fireball monitoring); Advanced NEO spectroscopy technologies; Research and development in the field of special optics, optoelectronics systems and optical measurement methods, robotisation and remote control of telescopes; NEO Software development (tasking and scheduling of telescopes, long-term archiving and analysation of NEO data, processing data from optical telescopes, asteroid identification).

Space Science and Exploration

- Various scientific instruments, including e. g.: Langmuir probes, thermal plasma measurement units; Low frequency wave receivers; Wave analysers; Space radiation detectors; Micro-accelerometers; Single photon laser detectors; X-ray scintillation; Power supply and distribution units; Optical assemblies; Plasma wave instrument units for Solar Orbiter mission; Scientific data simulations; High-power lasers; High-resolution mass spectrometry etc.

The main Czech goals in academia in the field of space R&D area include:

- **For space physics:** plasma and radiation environment near Earth and in solar system, solar research, meteorite research, objects in solar system, stellar research;
- **For Earth sciences and EO data applications:** gravitational research, space geodesy, magnetospheric and ionospheric research, planetary atmospheric spectroscopy and analytical chemistry, atmospheric and hydrological research, mineralogical and carbon cycle studies, land cover and urban development, disasters management;
- **For life sciences:** biological research (algae grow) and radiation biological modelling, psychological aspects (stress) of spaceflight;
- **For telecommunication research and application:** atmospheric radio propagation, generic satellite navigation signal receiver development, indoor signal modelling, microwave onboard transmitters;
- **For propulsion systems research:** system analysis, innovative thermal protection, structural and thermal modelling, pyrotechnic devices;
- **For space platform systems:** small satellites systems, electronic and electromechanical systems, robotic systems, composite advanced materials, optical and polarization filters;
- **For ground segments:** satellite data processing architecture and method development, spacecraft ground control and testing procedures.

CZECH SPACE JOURNEY

National project Czech Space Journey aims to contribute to the transformation of the Czech economy into the economy based on activities with high added value, and also to develop our society and boost the future human potential of the Czech Republic.

Objectives of the National project

Inspiration and motivation
The project aims to increase interest in studying technical and scientific disciplines that are crucial for the development of the Czech economy, creating positive role models for the younger generations. The Czech Astronaut Mission and the selection of young ambassadors of the Czech Space Programme play a key role.

Increased awareness
It aims to enhance public understanding of the benefits of space activities and highlight the significant achievements of the Czech Republic in modern history. The project should help us to become proud on what we can achieve as nation.

Inclusiveness and cooperation
The project aims to enhance active cooperation and coordination among various stakeholders and interested entities, including schools and universities, the Academy of Sciences of the Czech Republic, student initiatives, science centres, planetariums and observatories, companies and others.

Industrial competitiveness and scientific excellence
The project provides new opportunities for Czech industry and academia to implement complex space projects and to prepare experiments for the Czech Astronaut Mission. The implementation of such projects aims to increase our competitiveness and scientific excellence.

International cooperation
The project aims to boost international cooperation both at state, industry and academia level, generate more opportunities for Czech industry and academia and make the Czech Republic globally more visible.

Václav Kobera
coordinator of the
National Project
Czech Space Journey

06/2024
Innauguration of the national project Czech Space Journey

11/2024
Czech Space Week 2024

03/2025
Selection of young ambassadors of the Czech Space Programme and ZERO-G flight.

04/2025
Selection of experiments to be carried out on the ISS

05/2025
Decision on the flight of the Czech astronaut to the ISS

To be continued...

Czech Space Associations

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Association of the Czech Aerospace Industry (ALKP)

Sector leaders, innovators and research & development capacities at one address.
Big players or prime manufacturers in the industry teamed up technology innovators and visionaries as well as component suppliers to create a strong industry community on the platform of the Association of the Czech Aerospace Industry (ALKP). ALKP was established in 1996 and represent more than 50 members with more than 12.000 employees. ALKP represent complex capabilities of the whole aviation and space branches. Tradition and deep experience are our added values. Now, ALKP is creating a new chapter of the Czech space industry development which is based on the producers of modern satellites, system and subsystem providers, service providers as well as other companies representing sophisticated solutions, unique know-how and precise production.

ALKP Vision and Goals

- Promote Aviation and Space industry and its living topics as an important knowledge-based part of the Czech economy with a strong impact on the technological, economic and research and development growth of the Czech Republic.
- Support the competitiveness of member companies, especially through the common projects and promotion of national integration programs.
- Promote the continuity of research and development and strengthen member companies' know-how.
- Enhance, improve and foster cooperation between members.
- Foster economic cooperation with other states, namely through maintaining contacts with comparable national and transnational associations.
- Support the interests of the Czech aerospace industry abroad, especially by means of joint exhibitions or trade missions.
- Develop the labour market, mainly through supporting the technical education.

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ASSOCIATION OF THE CZECH AEROSPACE INDUSTRY

Brno Space Cluster

Brno is the second largest city in the Czech Republic and the surrounding Brno region has a rich history of aircraft industry. Today, it is a strong region full of high-tech industries, including many space companies - that is why in 2021, 9 space entities founded Brno Space Cluster - a local cluster consisting of both companies and academia.

Building on multiple years of previous cooperation, the cluster expanded from 9 to 19 members just in the first year. Currently, the cluster consists of more than 22 members and is still growing. This is making it the biggest space association in the Czech Republic.

The cluster plays a platform role as a place to share and exchange ideas and information, but also an active role in the business itself. To further support business, the cluster can bid as an entity - and the cluster already submitted multiple bids for international tenders.

Our current members:

- AerialComm
- BizGarden
- Brno Observatory and Planetarium
- Brno Regional Chamber of Commerce
- Brno University of Technology
- CEITEC
- CORAC Engineering
- G.L. Electronic
- Gity
- Groundcom
- Inpraise Systems
- JIC
- Lightigo Space
- Masaryk University
- Mendel University in Brno
- Pekasat
- SAWtronics
- Spacemanic
- TRL Space
- UNIS
- World from Space
- Zaitra

The cluster is active internationally, organizing business trips, meetings with stakeholders, and trade-show representations.

All of the industrial members of the Brno Space Cluster are companies with heritage in the space industry, that are active in the development of both commercial and institutional projects, as well as products.

As Business & Education are the main goals of the cluster, a new master's study program was established at the Brno University of Technology. Focusing on system engineering, the new master's is held in English and is open for up to 30 students from all over the world every year. The students have multiple classes on space systems as well as an opportunity to gain real experience as the cluster member companies are offering internships for them.

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Czech Aerospace Cluster (CAC)

General Desctiption

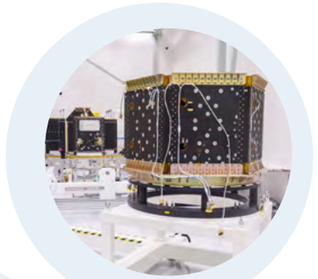
The Czech Aerospace Cluster has grown since 2010 to include more than 50 direct members from the aviation, defense, and space sectors. CAC provides a network connecting almost every aerospace company in the Czech Republic, facilitating targeted identification of specific companies and key sectors. The main goal is to enhance international activities, focusing on innovation, international cooperation, and maintaining a complete aerospace supply chain.

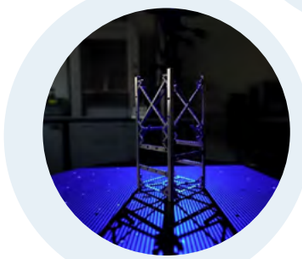
Competences & Capabilities

CAC's primary strengths lie in networking and internationalization. We connect members to a comprehensive network of aerospace companies and institutions across the Czech Republic, facilitating international collaboration and business opportunities. Our key capabilities include deep knowledge of the technological capabilities within the supply chain and organizing and supporting international projects and partnerships.

Products/Services

- Connection to CZ aviation, space, and defense industry
- Network: Connecting to almost every aerospace company in the Czech Republic
- Targeted Identification and Customization: Pinpointing specific companies and identifying key sectors, with the ability to preselect companies based on areas of interest
- Supply Chain Expertise: Long-term focus on the supply chain with deep knowledge of technological capabilities





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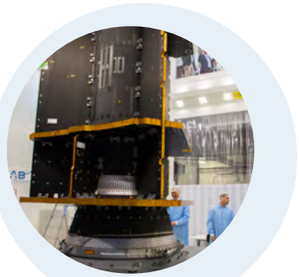
Czech Space Alliance (CSA)

General Description
The Czech Space Alliance (CSA) is an association of companies with proven capabilities and track records in the space industry and a broad international customer base. The Alliance consists of 22 companies from a wide portfolio of technical fields.

Competences & Capabilities
- **MAIT** – Frentech Aerospace, OHB Czechspace, SAB Aerospace, 5M, Streicher
- **Design** – L.K. Engineering, OHB Czechspace, SAB Aerospace, Stratosyst, Streicher
- **Manufacturing of structures and mechanisms** – Frentech Aerospace, 5M
- **Electronics** – Advacam, egsespace, Kyocera AVX, BD Sensors, e.s.c. Aerospace, HULD, UNITES, TTS
- **G/S and flight Software** – egsespace, Iguassu Software Systems, e.s.c. Aerospace, HULD
- **Material development** – TOSEDA, TTS, 5M
- **Scientific instruments** – Advacam, BBT Materials Processing, Rigaku Innovative Technologies
- **Testing** – EGGO Space, egsespace, Frentech Aerospace, OHB Czechspace, TOSEDA, 5M, Streicher
- **GSE** – egsespace, TERMA, L.K. Engineering, OHB Czechspace, SAB Aerospace, UNITES
- **Space applications** – CGI
- **Security consulting** – CGI

Products & Services
- Platforms for satellites
- Launcher dispensers for multiple satellite launch
- Solar arrays
- Deployable booms and mechanisms
- Satellite radiation shielding
- Stratospheric balloons
- On-board Computers, avionics
- GNSS SW for navigation
- Sensors – radiation, moisture, temperature, pressure
- Electronics and harness
- X-ray and IR optics
- Supercapacitors and batteries
- Composite structures and assemblies
- Hinges for solar arrays end booms
- Landing legs
- Mechanisms for cargo doors
- MGSE and EGSE
- Adhesives and composites
- Nanomaterials with special properties
- Stratospheric platforms
- Mechanical testing, Thermal-Vacuum Chambers, precise measurements, molecular contamination, electrical tests, outgassing, atomic oxygen, UV irradiation

Major Space Projects & References
- Structural subsystem for Copernicus ROSE-L mission
- Mechanical subsystem for flexible solar panels for Space Inspire communication satellites



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GNSS Centre of Excellence (GCE)

General Description
GNSS Centre of Excellence (GCE) is a public, non-profit, professional association acting in the domain of the global navigation satellite system within Czech and partially Slovak region.
The association was founded in November 2012 by state companies from all transport domains. Currently it is comprised of 5 founding members and 11 associated members which includes universities, research institutes and R&D companies incl. SMEs.
GCE's mission is to accelerate the development of applications, products and services utilising GNSS, through leveraging of Galileo and EGNOS in CEE region, to boost active cooperation of its members, networking with European partners and facilitating international cooperation.
GCE has competencies in the development, testing and deployment of GNSS-based products, services and applications, expertise in GNSS technology, project management, background research, monitoring of trends and opportunities in GNSS. GCE is sharing these competencies and its know-how within its members.

Main areas of activities can be divided into 6 groups:
GNSS, cyber security and protection against RFI:
- RFI detection & mitigation
- Critical infrastructure protection

GNSS in aviation:
- PBN Approaches
- PinS & Low level routes implementation

GNSS and rail:
- Utilisation GNSS in rail signalling systems
- GNSS testing at unique railroad research circuit in cooperation with Rail Research Institute (VUZ)

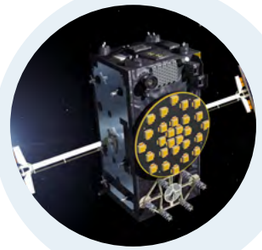
GNSS and inland water ways:
- Automatic Identification System (AIS) & RIS
- Performance evaluation & vulnerability testing

Project Management:
- Management of large & complex projects under different granting schemes
- Competencies in HORIZON granting process
- Procurement process of the ESA and EUSPA
- National granting schemes & procurement processes
- PM competences and consultation

Education and awareness:
- Workshops, dissemination, students´ internships

GCE´s Founding members:
- Czech Railway
- Air Navigation Service Provider
- Road and Motorway Directorate
- Czech Railway Infrastructure Administration
- Prague Airport

Associated members:
- EXACT Control System, a.s.
- CEDA Maps a.s.
- Betrian, a.s.
- České vysoké učení technické v Praze (CTU in Prague)
- Univerzita Pardubice (University of Pardubice)
- Škoda Auto Vysoká škola, o.p.s. (Skoda high school)
- VÚGTK, v.v.i. (Research institute of geodesy, topography and cartography)
- Žilinská Univerzita v Žilině (University of Žilina)
- Výskumný ústav spojov, n. o. (Research institute of telecommunications)



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Industry

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5M s.r.o.

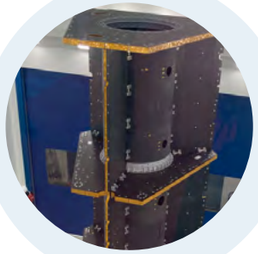
General Description
5M s.r.o. is a medium-sized company operating in area of the development and manufacturing of composite materials, sandwich panels and related subsystems for space applications, aviation and public transport.

Competences & Capabilities
Development and manufacturing of structural composite parts such as sandwiches and struts. Development and manufacturing of size solar arrays. Manufacturing of structural epoxy film and paste adhesives, epoxy resins, pre-impregnated fabrics). Development and manufacturing of composite and sandwich structures for optics and radiation shielding.

Products & Services
- Mechanical subsystems, composites and sandwich panels manufacturing
- ESA approved testing of composites and sandwiches according to ASTM and ECSS standards

Major Space Projects & References
- ESA - Flexible Solar Array Mechanical Subsystem Development and EM for NOVACOM II (subcontractor)
- ESA – ROSE-L - Equipped Structure and Thermal Subsystem (subcontractor)

Space Related Equipment, Labs & Certificates
- Autoclaves up to 250°C (diameter 2000 mm, length 4000 mm or diameter 1000 mm, length 2000 mm)
- Automated cutting of prepreg
- Laser positioning system for prepreg lay-up
- Presses up to 180°C, maximum dimensions 3000 x 1700 mm
- Universal testing machines, load cells up to 100 kN equipped with environmental chamber for temperature range from -180°C to +250°C
- Thermal cycling (max. 800 x 800 x 950) and thermal vacuum cycling chambers (max. 1200 x 1200 x 750 mm)
- CTE measurement with DIL 822 (Dilatometer)
- DMA (Dynamic Mechanical Analyser)
- TGA 2 (Thermogravimetric Analyser)
- DSC 1 (Differential Scanning Calorimeter)
- CMM (maximum part dimensions 3000 x 1500 x 1200 mm)
- Ultrasonic and thermographic non-destructive testing
- AS/EN 9100:2009, EN ISO 9001:2009, POA PAR 21.G EASA 748/2012
- DIN 6701 A1, IATF 16949



● INDUSTRY
⟋ MANUFACTURING
▲ R & D
ᵀ TESTING

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ADVACAM s.r.o.

General Description
We craft miniaturized particle tracking cameras for advanced **Space Weather Forecasting** and **Adaptive Radiation Protection.** Our low-power devices ensure safer and more efficient space missions.
ADVACAM detectors can be used to monitor and forecast space weather and adopt protective measures based on the reading. They also provide an excellent way to track received dose of radiation.
Thanks to **MiniPIX TPX3 SPACE**, the total radiation dose can be measured. Satellite shielding or safe mode is activated only when necessary. It is even possible to forecast more energetic and harmful Sunstorm particles minutes before they approach Earth, providing a valuable window to activate protective measures.

Products
- Design, develop, and manufacture advanced radiation detection instrumentation such as MiniPIX TPX3 SPACE

Major Space Projects
- Space Radiation Dosimeter for space crew onboard Gateway Lunar Orbit Space Station, contract ESA with EK
- Lunar radiation monitor, NASA Moon Lander, with Univ of Lousiana USA
- Radiation Monitor, One Web telecommunication satellite
- Gamma-ray Tracker wide field-of-view for ESA Space Ryder, with Univ of Coimbra
- Focal-plane X-ray Imager, X-ray telescope payload in LEO orbit onboard Cubesat VZLUSAT-2
- Online radiation dosimeters MiniPPIX-TPX for space crew in LEO orbit onboard the ISS and NASA ORION mission
- Radiation Monitor for GEO-orbit telecommunication satellites contract ESA with IEAP CTU
- Pixel Detector Data Processing Engine, contract ESA
- Space Radiation Capabilities, Technologies, and Payloads contract ESA with VZLU, CSRC/BDSensors, Rigaku

● INDUSTRY
⟋ MANUFACTURING
■ SOFTWARE
× SERVICES
▲ R & D
ᵀ TESTING

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ADVACAM s.r.o.

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ALEEGO s.r.o.

General Description
Founded in 2016, ALEEGO is a drone services company which enable companies to digitize their assets and turn aerial data into business intelligence. ALEEGO works with enterprise from various field such as agriculture, oil and gas, power utility and other industries throughout Europe - collecting, processing and extracting real value out of aerial data to improve productivity, operational efficiency, and worker safety.

Competences & Capabilities
ALEEGO online platform count 70 drone pilots onboarded across Europe. The drone pilots registered on ALEEGO platform are qualified by the Operation Manager ensuring permits, equipment, insurance and capabilities are suitable for the customer depending on the mission.

Major Space Projects & References
ESA Kick-start project – Blockchain was implemented onto ALEEGO platform to secure confidential data from our customers and to ensure the ability to submit indisputable original mission documentation. ESA Demonstration project – Locate defects or area of improvement on network of pipeline or powerline for Energy companies using Artificial Intelligence.

Space Related Equipment, Labs & Certificates
- GPS tracking device ideal for tracking of assets/vehicles: GSM connectivity, A-GPS sensor
- RTK ground station to improve GPS accuracy

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D

Contacts:

ALEEGO s.r.o.

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ALEEGO
IN THE AIR WE GO

ASITIS s.r.o.

General Description
ASITIS is a consulting company for climate change adaptation and mitigation, ESGs, and carbon accounting. It provides a wide range of services from climate adaptation strategies, sustainable energy plans, resilience mapping, climate transition roadmaps to carbon footprints, ESG reporting, and carbon border adjustment mechanism reporting.

Competences & Capabilities
ASITIS integrates various specialized disciplines to provide comprehensive solutions. It is a recognized provider of adaptation strategies, satellite data services, and consultancy for climate change mitigation and clean energy across different sectors. The company collaborates with universities and institutions on scientific research and innovative projects.

UpGreen product utilizes satellite data, urban data, and artificial intelligence to enhance urban green management and develop blue-green infrastructure. Recently, ASITIS initiated another feasibility study with ESA for a Climate Resilience App based on Climate Impact Chains. Additionally, ASITIS is involved in the VALORADA project, funded by the Horizon Europe EU program.

Products & Services
- Climate change adaptation strategies
- Local Energy Concepts
- Sustainable Energy and Climate Action Plans
- ESG

Major Space Projects & References
- UpGreen: an urban green innovative solution with Coppenhagen and Lisbon as demostration sites (funded by ESA)
- Climate Resiliance App: An innovative slution strengthening urban resilience to climate change through the CICs methodology (funded by ESA)
- 3-30-300: Service based on the rule 3-30-300 transforming urban green so that every citizen has access to natural green spaces

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D

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ASITIS

asphericon s.r.o.

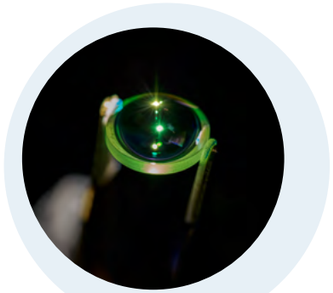
General Description
asphericon is a specialist and technology leader in field of aspheric components and optical systems. With the emphasis to using latest manufacturing technologies, continual innovation process, skilled workers and world class measuring equipment is asphericon able to provide high quality optical solutions for more than 600 customers worldwide.

Competences & Capabilities
– asphericon established the asphere as a standard component in optics. Next step is to provide custom systems from scratch to final part. Our optimized and flexible manufacturing process for prototypes, single pieces and large series accompanies asphericon customers from optical design, production and coating, full-surface interferometric measurement and documentation up to the assembly of optical components as well as their optical characterization.

Products & Services
Products: Custom aspheres, Spheres, Mirrors, Freeforms, Durable Systems, Miniaturized Systems, High-NA Objectives
Services: Optical & Mechanical Design, Assembly, Coating, Metrology.

Major Space Projects & References

- **New Polishing Techniques for aspheres & freeforms** – Development of new polishing techniques for UV materials (Fused Silica, CaF2). Project successfully led to improvement of manufacturing processes on crystalline materials and amorphous materials. Irregularity RMSi was improved by 20% to values of 30 nm and surface roughness < 0.5nm.
- **IR Optics for high-performance earth observation applications** – Precise polishing for high performance applications in infrared spectrum. Project successfully led to high end polished IR material with surface form tolerance <0.35 fr and surface roughness <0.5 nm, manufactured from demanding materials (CaF2, LAK9, SF6, SiO2)
- **Laser Optics for Space** – Development of affordable optical coatings for space application. In cooperation with HiLASE Center and co-founded by ESA. A refined version of conventional coating technology forms the basis of asphericon new space laser optics.



- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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ATC Space s.r.o.

General Description
ATC Space (ATS) was founded in 2017 as a 100% daughter of the German company Aerotech Peissenberg. ATS is active in the space business with vision to become centre of competence for milling and assembly operation structures and competences for space applications. Main experience of ATS is with aluminum machining and hand-made assembly parts of booster for ARIANE 6, named as ESR Rear and ESR Forward skirt.

Competences & Capabilities
The main competences of ATC Space in the space division are the machining (cutting and milling) of aluminum alloys, fulfilling required precision in the maximum tolerances. The components and parts produced in Klatovy are mainly on high stress structures and as a result directly responsible for the strength of the structure of space launcher Ariane 6. In the assembly section, ATS operates as a reliable partner in the area of special assembly and riveting for primary structures in the scope of ARIANE 6.

The ARIANE 6 scope of work is performed in a dedicated facility, optimized according the requirements for a nominal production rate of 32 skirts per year, which was finalized in 2018. Always in the view of a high-tech and state of the art production - sustainable for the next 30 years, we set up a dedicated milling center with one of the most modern machinery and special assembly area with robotic. For the time being, we are producing and finalizing the products for flight number ten of flight hardware of the ARIANE 6.

All of the produced parts and components are tested and finally inspected in house by special means before they are released for delivery to the final customer.

In 2022 ATS Space had 37 employees and we are continuously recruiting with a targeted manpower that is 75 employees. Company turnover in full operational capability is planned 15 mil EUR per year in serial production.

Major Space Projects & References

- Ariane 6 – ESR Forward and ESR Rear Skirt
- HERA project – AIT Handling Adapter

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

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AŽD Praha s.r.o.

General Description
AŽD Praha, as a leading supplier of signalling systems and solutions to railway undertakings and railway infrastructure owners and managers, is highly motivated to provide its customers the most advanced systems and technologies, all developed and produced in its labs and factories in the Czech Republic, Slovakia, Poland and Bulgaria. Since 2021 AŽD is a Founding Member of EU-RAIL JU, which is the only EU's major programme and joint undertaking for railway research and innovation activities. Besides that, AŽD Praha experts are regular and active contributors to the research and standardization activities in several international institutions, associations and consortiums – UNIFE/UNISIG, CENELEC, ACRI, CAT, etc

Competences & Capabilities
The majority of projects are focused on the complete life cycle of applied research, innovation and development, implementation, validation and assessment of products which are then introduced into a production cycle. The state-of-the-art sample and serial production infrastructure allows us to manufacture prototypes ready to be tested and validated in our own company labs, on our own trains and as well as in accredited labs anywhere in the world.

Major Space Projects & References
- CArrier Phase RESiliencE (CAPRESE), co-funded by ESA in the course of the NAVISP Programme (project No. NAVISP-EL1-017), 2018-2020
- X2Rail-5, Shift2Rail member's project co-funded by EC in the H2020-S2RJU-2020 call (project No. 101014520), 2020-2023
- R2DATO, EU-RAIL member's project co-funded by EC in the HORIZON-ER-JU-2022-01 call, (project No. 101102001), 2022-2026
- FutuRe, EU-RAIL member's project co-funded by EC in the HORIZON-ER-JU-2022-01 call, (project No. 101101962), 2022-2026

Space Related Equipment, Labs & Certificates
- GNSS SIS stationary and mobile test sets
- GNSS RF signal analyzers and recorders
- Measurement and test rail vehicle and train set
- Regional rail test tracks > 50 km
- many more...

- INDUSTRY
- MANUFACTURING
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- R & D
- TESTING

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BBT – Materials Processing, s.r.o.

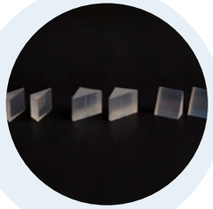
General Description
BBT-Materials Processing, s. r. o. (established in 1995) is a private SME company dedicated to R&D activities in the field of world unique high-performance infrared polarisation optics, photonics, acousto-optics and materials engineering for space and terrestrial applications.

Competences & Capabilities
Our group is the world´s first to have discovered mercurous halides single crystals and their extraordinary properties. Our technologies are currently based on two halides with exceptional properties - mercurous chloride (calomel) and mercurous bromide.
These unique materials are a great solution for mid-IR and thermal infrared optics, acousto-optic components and high-power laser applications. At present, we are developing together with ESA a LWIR polarising hyperspectral camera and a TIR acousto-optic tunable filter for remote sensing.

Products & Services
- Polarizers (several types)
- Scramblers
- Polarizing beamsplitters
- Phase delay prisms
- Quarter/half wave plates
- Savart plates
- Wedges
- Acousto-optical tuneable filter (TRL 4)
- Delay lines
- Common path interferometer (CPI)
- Laboratory measurements
- Custom products

Major Space Projects & References
- ECLIPSE (ESA, 2018-2020) Development and production of Calomel IR polarizer and testing in relevant environment
- IAPETHOS2 (ESA, 2018-2021) Infrared Advanced Polarizers for Space and other Applications 2
- TWINS (ESA, 2022): Birefringent Fourier transform spectrometer for space applications
- Other projects within KONTAKT, PRODEX, FP7, EUROSTARS etc.
- IRCAPOL (ESA, 2023) Development of infrared polarizing camera and increasing the TRL level of the acousto-optical tunable filter based calomel for hyperspectral imagers and commercial applications for EO
- BIRD (ESA, 2023) Development and production of optical and acousto-optical components based on mercurous bromide

Space Related Equipment Labs & certificates
- Crystal growth units (PVT method)
- Crystal optics manufacturing.
- HW for testing and quality evaluation of optical and acousto-optical component
- RoHS for polarization optics based on calomel (under negotiation)



- INDUSTRY
- MANUFACTURING
- SERVICES
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- TESTING

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BD SENSORS s.r.o.

General Description
BD SENSORS (≈200 employees, ≈16 mil EUR turnover) is a European leader in the field of Pressure Sensors Technology and is one of the leading SMEs in Electronics development and manufacturing for Space Applications, having more than 25 years of "Space Heritage" via its "Space Division".

Competences & Capabilities
- Complex solutions for Pressure Sensors & Pressure Measurement Devices
- Automated and Manual PCB Assembly in accordance with ESA ECSS Standards
- Space Electronics Development and MAIT
- Electronic Ground Support Equipment (EGSE)
- Harness & Cabling (MAIT)

Products & Services
- Pressure Sensors with portfolio of +100 product types
- Pressure Sensors for the International Habitat Module (I-HAB / Cislunar Gateway)
- Banks of Supercapacitors for Space
- Automated & Manual FM PCB Assembly according to ESA ECSS Standards
- EGSE & Unit Testers

Space Heritage & Major Space Projects
- INTEGRAL, PSAC Unit
- PROBA 2, DSLP&TPMU Units
- SWARM/TEASER, Micro-Accelerometer
- PROBA V, SATRAM Radiation Monitor
- ISS / ACES, European Laser Timing Instrument
- Solar Orbiter, PWR for RPW & STIX Instruments
- BOSC, Banks of Supercapacitors for Space
- METOP SG/3Mi, Filter Wheel Controller
- NEOSAT, Thermal Vacuum Test Benches
- JUICE / APME, Manufacturing and Testing
- NOVACOM 2, Flexible Solar Arrays
- Space Rider, Modul Driver Electronics
- HITPIX, Space Radiation Monitoring
- I-HAB, Pressure Sensors for Space Application

Space Related Equipment Labs
- Cleanroom 100.000/10.000 class, 170m²
- Automated SMT line for FM PCB Assembly / ECSS-certified
- Manual soldering workstation / ECSS-certified
- Software Design Tools (Altium, Solidworks, Structures, Thermal)
- Accredited Calibration & EMC Laboratories & Temp/Hum Chambers

Cerificates
- ISO9001
- ECSS-Q-70-08,-38,-26,-28
- Safe Enterprise
- EN 9100 in progress

- INDUSTRY
- MANUFACTURING
- SERVICES
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- TESTING

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Betrian Group a.s.

General Description
Betrian Group is involved in the development of autonomous train control technology, the RCAS (Rail Collision Avoidance System) and smart assistants for safer train travel. With its innovations, it plans to contribute to the modernization of European ETCS security in the future

Competences & Capabilities
We use Egnos and Galileo (including RTK) for very precise navigation of trains - our vision is to build and certify positioning system for every train condition like tunnels, underground stations etc. Special goal is to develop a secondary safety system, so called RCAS - Railway Collision Avoidance System. More details about our RCAS system can be found on www.navsuite.cz. While the RCAS system is a vision, our flagship NavCom is already in regular use by rail carriers in its first versions. We would like to develop this early bird together with ESA to the certified status mentioned before in this article. If this happens - there will be a solid base for the certified positioning system for the next generation European Train Control System.

Products & Services
- Navcom-navigation communication unit with fixed installation in the train
- Navcom X- implemented by OSNMA, portable for any vehicle
- Navtrain- navigation application for train drivers
- Navsim- simulation application for train drivers
- Customized HW and SW development

Major Space Projects & References
- "Navcom Train Positioning System powered by EGNOS", funded by EUSPA in the course of the Acceleration of EGNOS Adoption in Transport Programme (project Nr.GSA/GRANT/01/2021-02), 2022-2024
- NAVISP_ELM2_NavComX_CZ, "NavCom X the modular PNT solution for rail" funded by ESA in the course of the NAVISP Element 2 Programme (project Nr. NAVISP EL2-138), 2023-2025

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- R & D
- TESTING

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Big Terra

General Description
Big Terra delivers location-based climate and crop modelling data with one click.Founded in 2017, Big Terra provides a unique fusion of satellite observation, climate, weather and predictive crop modelling data anywhere in the world, helping farmers and organisations to better identify and understand agricultural investment risks, priorities and opportunities in the context of climate change.

Competences & Capabilities
Big Terra's first ESA-BIC incubated product was our Climate Report, a fusion of Climate and EO data, advanced analytics, and crop growth simulation. Over the years we have developed and now operate a processing pipelines for environmental data ingestion and analytical processing (including satellite data). The results are then used for the reporting and benchmarking services for agriculture, helping to monitor, measure and improve the efficiency of agricultural with a global focus targeting many locations across the globe, in particular developing countries.

Products & Services
CARBOGNOSTIC
Our flagship product is Carbognostic, a platform for monitoring regenerative agriculture and carbon farming anywhere in the world. It is a logical extension of our location-based climate and crop modeling services. It enables transparent and impartial mapping and monitoring of farming styles in agricultural fields in terms of carbon storage in the landscape. It uses massive processing of satellite data and crop growth models to provide indicators and benchmarks for assessing the actual efficiency and functionality of carbon storage projects. Carbognostic enables stakeholders to evaluate the effectiveness of their investment into soil-based carbon sequestration from their desktop.

CLIMATE REPORTS
Our Climate Reports enable better future preparation for such climate-change related events and provide characterisation of suitable crops for a specified location. We bring useful data to NGOs which enables them to enhance the capability and efficiency of their projects. We provide

- Monitoring of yields
- Identification of the critical points of crop growth
- Related prediction to possible damage to crops
- This consequently helps local farmers manage their investments and expenses related to inputs (fertilizers, machinery, etc.) more efficiently and carefully.

Major Space Projects & References

- Moldova via UNDP – delivered feasibility report for Satellite Data and Communication Platform for Moldovan Agriculture.
- Zambia via CZ Caritas + UNDP (Agribusiness for LIFE) – provision of climate reports and created the Terra Crop Zambia app for distribution of mobile agricultural content to farmers.
- Cambodia CDA + CZ Diakonie B2B project – delivered "Business plan for climate risk assessment services in Cambodian agriculture" to find suitable partners for providing climate services to Cambodian farmers.
- Finished an ESA Kick-starter feasibility study for our Rebound Potential Index. RPI measures the capability of agricultural areas to produce natural capital, their capacity to rebound from the impacts of a hazard and their future financial potential - adjusted for natural risks
- Iraq, Syria and Ethiopia – Climate Report deliveries for larger People in Need projects in various regions

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

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Big Terra

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BizGarden s.r.o.

General Description
BizGarden s.r.o. is a private non-profit research organisation. Our main focus is on business model generation and market research, internationalisation and networking in downstream applications.

Competences & Capabilities
BizGarden is specialised in non-technical research and innovation focused on market potential, business model generation and opportunities assessment for space technologies and services, design, development and market roll out of business models.
Since 2023, the BizGarden team has been involved in the definition of the European Space Data Space together with representatives from ESA, EC, European industry and other stakeholders. The Space Data Space supports the EU's goal for a unified data space by aligning with EU architectural frameworks and offering guidance on organizational, business, and technical elements. Its three roles include coordinating, operating within the space data space, and governing the space sector to boost data sharing, framework adoption, and ecosystem enhancement.

New Global Security Scenarios, where data sharing and Space Data Space could play a crucial role to make data available fast, of gigh quality and securely.
Source: ESA-ESPI Workshop on Space Date Space held on 22–23 November 2023, EU Satellite Centre – Torrejón de Ardoz, Madrid (Spain)

Products & Services

- Mentoring and professional support for start-up companies
- Support and consultancy in the areas of research and technology development
- Partnership in EU projects and dissemination of their results

Major Space Projects & References

- Safety and Information Services for Ski Resorts in Emerging Markets - Feasibility Study and Demonstration project, ESA ARTES 20, IAP. 2013-2016 https://business.esa.int/projects/sis-srem
- AUDROS - Autonomous drone services in the CBRNE operations with ESA ARTES, IAP, Feasibility Study and Demonstration Project 2018 - 2023, https://business.esa.int/projects/audros
- In 2020 the setup of Digital Innovation Hub Tourism 4.0 (https://www.t40.cz) which aim is to support digital transfromation in the travel industry in central Europe. Space technologies and space signals play a significant role in digital transfromation of travel industry.

T4.0

AUDROS
AUTONOMOUS DRONE SYSTEMS

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D

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BST.COACH s.r.o.

General Description
Founded in 2022, BST.COACH is a digital physical development platform that helps equip coaches and educators to provide gamified long-term fitness development resources for youth.

Competences & Capabilities
BST.COACH has taken a unique role in applying satellite navigation to benefit public health through an outdoor exercise initiative. We create reward-based physical activity programs that connect outdoor exercise participants with nearby businesses via a voucher system.

Sustainability
As part of the latest ESA Kick-Start activity "Inclusive and Accessible Sport" BST.COACH creates and distributes outdoor digital exercise programs to be done in GNSS-stamped locations in parks and hiking trails near relevant businesses. Our gamified ESA exercise programs do not require any equipment and therefore do not need any maintenance materials to continue the initiative long-term. Also, the business voucher reward program will be done 100% digitally via a web app.

Products & Services
- Exercise science-based physical activity routines
- Voucher reward program for the participants
- Marketing service for partner SMEs, hotels, and grocery stores
- Software and satellite navigation system engineering
- Customer engagement via social media communication
- User and IT support services

● INDUSTRY
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× SERVICES
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CGI IT Czech Republic s.r.o.

General Description
CGI ranks among the world's leading IT and business consulting firms delivering a comprehensive end-to-end portfolio of services, from strategic IT and business consulting to systems integration, managed IT and business processes and intellectual property solutions. CGI engages clients through a localized relationship model, supported by a global delivery network, enabling digital transformation and improved performance across organizations in both private and public sectors.

Competences & Capabilities
The Space division of CGI in the Czech Republic focuses on Earth Observation and Space Security. Active in EO and GNSS since 2009, CGI is now a strategic partner of ESA and EUSPA. In EO, CGI supports infrastructure operators and private clients with expert analyses for monitoring, risk assessment, and AI/ML automation developed in-house. In Space Security, CGI delivers capabilities in Galileo PRS, Cyber security, classified documentation management and risk analysis.

Products & Services
- CGI IP Solution for Fully Automated EO Data Analysis
- Earth Observation
- IT Integration, Software Development
- Space Security Competence Centre
- Corporate Security Competence Centre

Major Space Projects & References
- Galileo PRS and Security Support services to EUSPA
- Galileo PRS projects to Czech and Slovak National Ministries, NSA
- ESA projects in the EO area, Navigation, 5G/6G
- Wide industry services and support in the area of EO and EO commercial services

Space Related Equipment, Labs & Certificates
Certificates:
- ISO 9001:2015 & TickIT
- ISO 14001:2015
- ISO 20000-1:2018
- ISO/IEC 27001:2013
- EUSPA Security Accreditation Board – PRS Support

NSA "Secret" Clearance including certified IS

● INDUSTRY
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CleverFarm, a.s.

General Description
CleverFarm is revolutionizing the agricultural industry by empowering farmers with data-driven insights for enhanced decision-making. Platform provides an all-encompassing view of farm management, optimizing every step from seeding, through fertilization to harvest. It's a beacon of efficiency, ushering in an era where optimal resource utilization and cost savings go hand in hand. CleverFarm is not merely changing the landscape; it's transforming the very essence of farming, sowing the seeds for a future where precision and prosperity grow in unison.

Competences & Capabilities
In the domain of satellite data processing, we have created the crop model allowing us determine the real biophysical conditions of the plants anywhere on the earth and further expand the services in precise crop nutrition, yield estimation and early warnings of crop damages caused by human and natural conditions. In other words, we show them what is happening on their fields, before it become physically visible. Most of the competitors use the basic vegetation indexes which are limited in the quality of the information provided, we combines in situ observation with mobile laboratory analysis and using machine learning allowing us to determine real plant conditions such as biomass volume, chlorophyll and water content.
Another service of using satellite data is providing farmers analysis of 20 years satellite data history to identify what crops they should grow to achieve the highest possible yields. And we do this while lowering their original resources. CleverFarm bolsters this historic data with IoT sensors - providing realtime information about the humidity, temperature, soil moisture and other critical information to improve crop yields. Farmers are able to use this data to predict pests and diseases in crops prior to an outbreak - allowing for them to apply pesticides only when needed.

Major Space Projects & References
- Over 800 paying customers (agriculture subjects) in the CleverFarm platform
- Having 9 partners around the CEE to expand our products
- Scalability in different segments like city greens, golf and football stadiums

CleverFarm - data-based farm management.

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D

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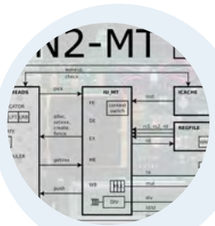
daiteq s.r.o.

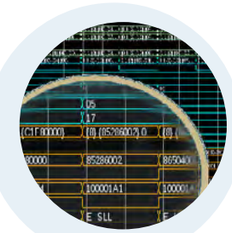
General Description
daiteq provides advanced arithmetic solutions for space-grade processors and FPGAs. For floating-point processing we offer a highly configurable floating-point units compliant with IEEE 754 (2019) that support complex arithmetic and user-defined floating-point number formats, beneficial e.g. for deep learning. For fixed-point processing we offer an implementation of SIMD operations targeted at GNSS processing, low-precision deep learning inference and video compression. Our arithmetic units are complemented by our customised version of the LLVM compiler that supports user-defined floating-point and integer data types.

Competences & Capabilities
- Design and implementation of LEON and NOEL-V systems.
- Customizable, IEEE Std.754(2019) compliant floating-point units for LEON and NOEL-V processors.
- Design of application-specific custom instructions for LEON and NOEL-V processors.
- Support for GNSS processing in LEON2-FT and NOEL-V.
- Support for CCSDS 121 compression in LEON2-FT and NOEL-V.
- Design for space-qualified NanoXplore, Microchip, Xilinx FPGAs.
- Support for the AGGA-4 IP core

Products
- **SIMD-within-a-register (SWAR) extensions for LEON2-FT and NOEL-V.** Target areas: GNSS, CCSDS, ANN, data encryption.
- **Floating-point unit** for LEON2-FT, LEON3, NOEL-V. The daiteq FPU supports a variety of floating-point formats, including packed formats, configurable at synthesis time.
- **llvm extensions** for SPARC and RISC-V. The extensions support the daiteq floating-point unit and the SWAR unit in LEON and NOEL-V processors.
- **FMC-SRAM board** for NanoXplore, Microchip and Xilinx FPGA demo boards.

Major Space Projects & References
- **TRP/ITI: Multi-threaded processor for space applications**. Instruction set extensions for micro-threading in LEON2-FT
- **EO: METOP SG:** Design review of the 3MI Filter Wheel Controller Design.
- **GSTP: ESA IP core extensions.** Configurable floating-point and integer SIMD-unit for LEON2-FT and NOEL-V. Techmap for NanoXplore BRAVE FPGAs. Acceleration of CCSDS121 in LEON2-FT.
- **EO: AGGA-4 IP core conversion.** Creation of the AGGA-4 IP core for FPGAs derived from the AGGA-4 ASIC GNSS Core sources.
- **EO: ROSE-L.** Design of a custom FPGA-based controller for the RF part.





- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

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Responsible for space and ESA projects:

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CRYTUR, spol. s r.o.

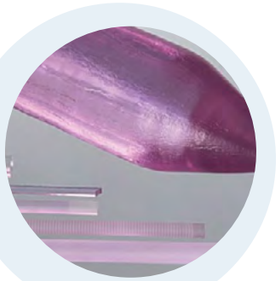
General Description
Crytur is a leading European manufacturer of solid-state laser gain media and optoelectronic systems based on single-crystal materials. With more than 75 years of experience in crystal growth and precision optics, Crytur delivers highly specialized solutions for scientific, industrial, and aerospace applications. The company integrates crystal growth, high-precision machining, coating, optomechanical assembly, and quality assurance within an integrated facility located in Turnov. Crytur has an established track record of collaboration with international research institutes and space-sector partners, including ESA, and is actively involved in advanced laser and optical technology development for spaceborne applications.

Competences & Capabilities
Crytur's integrated production chain supports the full development cycle – from crystal growth and material processing to prototyping, system integration, and serial manufacturing. Key competences include:Customizable, IEEE Std.754(2019) compliant floating-point units for LEON and NOEL-V processors.

- Growth of high-purity laser and scintillation crystals (e.g. Nd:YAG, Yb:YAG, YAG:Ce)
- Development of DPSS lasers (Q-switched, CW, ultrafast) in cooperation with HiLASE institute
- Design and production of scintillation detectors for ionizing radiation
- High-precision CNC manufacturing from space-compatible materials (e.g. sapphire, titanium, fused silica)
- Production of precision optics and optomechanics with tight tolerances
- Optical coatings for high-power and space-grade applications
- Cleanroom labs for laser and optical module integration
- In-house environmental, thermal, and optical testing for space qualification

Space Related Equipment, Labs & Certificates

- ISO 9001 and ISO 13485 certified quality system
- ISO 5 and ISO 6 cleanroom facilities for opto-electronics assemblies and testing
- Sub high precision micormeter level CNC manufacturing and QA
- Solid-state lasers R&D and production infrastructure
- Vacuum and temperature cycling chambers
- Experienced in ESA, Horizon, and EIC-funded space R&D projects



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Dronetag s.r.o.

General Description
Dronetag envisions a safer, more transparent airspace enabled by innovative unmanned traffic management and digitally visible drones. To support compliant drone operations in the US, EU, Japan, and beyond, Dronetag has developed a complete ecosystem, from an advanced UTM platform to specialized hardware, including transmitters and receivers, that make drones digitally visible and traceable.

Competences & Capabilities
Dronetag is a company managing the entire product lifecycle, from concept and design through hardware and software development, manufacturing, marketing, and global sales. The team has a proven track record of bringing complex technologies to market that others have struggled to implement. Dronetag is known for producing some of the most compact, lightweight, and cost-effective drone identification devices on the market, serving customers worldwide.

Transmitters & Integration
Dronetag's transmitters enable existing drones to comply with Remote ID regulations by broadcasting identification and location data via Bluetooth and LTE (supporting both Direct and Network Remote ID). These modules are used as add-ons for commercial drones or are integrated directly into the circuitry of newly manufactured drones.

Receivers
Dronetag provides advanced drone identification receivers that are essential for monitoring and visualizing drone activity in the airspace. These devices allow first responders, security forces, and operators of critical infrastructure to accurately detect and track both drones and their pilots in real time.

Platform & Applications
The Dronetag ecosystem includes a comprehensive device management and mission planning platform, accessible via desktop and mobile. It supports drone operators, system integrators, and UTM service providers in coordinating safe and compliant drone operations.

Products & Services

- UTM platform
- Remote ID modules
- Remote ID receivers

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EGGO Space s.r.o.

General Description

EGGO Space offers a wide range of services and expertise including testing of EEE components, Industrial Screen-printing&Recycling of contaminated substances. The main range of Test Laboratorys activities consists of climatic, mechanical and Life time testing of components, parts and materials as well as interpretation and processing of results and defect analyses for electrical engineering and related industries. These tests serve customers from various industries including electrical, automotive and aerospace. One of the main activities of EGGO Test House is to provide support services in development or qualification for space devices or components as defined in fields of activity of the Czech National Space Plan, chapter 5.5- Devices and Components and Flight Hardware. EGGO became a member of the Czech Space Alliance at the start of 2011.

Competences & Capabilities

- Reliability testing
- Failure analysis
- Temperature/ humidity stress
- Mechanical stress, solderability
- Non-linearity measurements
- Corrosion test
- Evaluation testing of passive components (Supercapacitors, Tantalum capacitors, Resistors, Relays) as per ESCC standards (ESCC 2263000)
- Designing and manufacturing of electronic devices for special purpose machinery&test measuring equipment.

Major Space Projects & References

- Reliability Testing of KYOCERA AVX low ESR Tantalum capacitors types TPS and TPM for KYOCERA AVX/ CNES project
- Contract no: 400010504/10/NL/PA- Low ESR Tantalum Capacitor Evaluation and Qualification. Contractor: KYOCERA AVX Corporation- Tantalum division, Subcontractor: EGGO Space s.r.o- responsible for the Evaluation of Tantalum Capacitors phase
- Contract no: 4000103977/11/NL/Cbi- Development of Test Facility Dedicated to Passives Components (The project was selected under the CZ industry incentive scheme by ESA&CZ government). Contractor: EGGO Space s.r.o
- Contract No. 4000105661/12/NL/NR ARTES 5.1 Evaluation of Supercapacitors and Impacts at system level. Contractor: EGGO Space s.r.o
- Contract No. 4000111435/14/NL/WE High Density Connector Suitability for Space Application ARTES 5.1. Contractor: EGGO Space s.r.o

Further projects

- Measure maximum rating of components (physical limit)
- Identify limit of current technology and evaluate new technology for high vibration and shock
- Determine derating of components

Space Related Equipment, Labs & Certificates

- Testhouse with large portfolio of the Test equipment including: Thermal chambers, Vibration apparatus, mechanical shock apparatus. etc
- ISO 9001:2009
- ISO 14001:2005

● INDUSTRY
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egsespace s.r.o.

General Description

egsespace s.r.o. is a private SME company located in Prague, Czech Republic. Since its foundation in 2021, the company has been focused on the development of electronics for Space, Science and Industry.

Competences & Capabilities

Electronic / Electrical Design including Advanced Analog & Digital circuit design, precision electronics, Microcontroller applications, PCB design, FPGA design, Wi-Fi / ETHERNET based devices, High speed design, High voltage design, IoT devices.
Design and development of Electrical Ground Support Equipment (EGSE) and Special Check-out Equipment (SCOE) for testing of satellite power subsystems.
Development of Firmware for Microcontroller Units (MCU), Software for Instrument control, WiFi / ETHERNET communication, FPGA, IoT devices.

Products & Services

- Electronic High Voltage Load
- Electrical Thruster Simulators
- Electrical Ground Support Equipment
- Electronic / Electrical Design
- Electromagnetic compatibility (EMC) Design
- EMI problems mitigation
- Radiation tests – SEE, TID
- Software & Firmware
- Mechanical Design
- Custom made harness

Major Space Projects & References

- High Voltage Electronic Load for Ion Engines Testing and Simulation – intended primarily for use in the Electrical Ground Support Equipment (EGSE) for electrical acceptance testing and burn-in tests of the Field Emission Electric Propulsion (FEEP) engines developed by company ENPULSION, however suitable also for other types of ion engines.
- Memory Control Sub-System for Low Earth Orbit Applications - egsespace is responsible for hardware development (including HW related procurement), for definition, planning of radiation tests and procurement of the radiation test facilities, and consultancy on radiation test aspects. The pictures below show a special SODIMM module with two redundant DDR4 chips dedicated for our custom ULTRASCALE based motherboard and the 16 channel power supply with remote control for FPGA development.

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Eltvor Instruments, s.r.o.

General Description
Eltvor's mission is to offer world-class time&frequency products along with resilient navigation services for government, scientific and industrial customers, including space/terrestrial critical infrastructure.

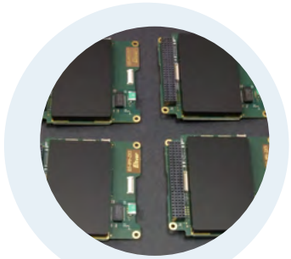
Competences & Capabilities
The core strength of Eltvor team is in signal processing, FPGA, CPU implementation, time&frequency measurements, RF system design and generic embedded computing centered mostly around C, Linux, FPGAs.

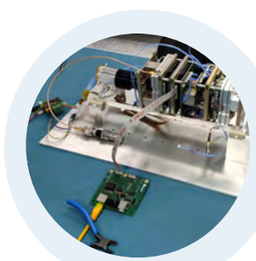
The Eltvor team re-designed, manufactured and programmed its compact camera and tailored it for the VZLUSAT-2 in a 4 months time span, operating on-board since January 2022.

Current Eltvor's portfolio of proven technology contains laser Doppler instrument, microwave transparent (bent-pipe) transponder, DVB-S2 transmitter, and microwave interferometer at 125GHz and much more.

Products & Services
- ELT-DPU-Z2CS: CubeSat-compatible OBC/DPU recently upgraded from VCVS2 to be used in frame of Czech government mission
- VCAM1M3: 1.3MPix BW and RGB cameras
- ELT-TT-21:digital modem for Two-Way Satellite Time Transfer (TWSTT)
- NXDAC: custom electronic board populated with rad-hard European components: EVX12DS130B DAC and nanoXplore NG-MEDIUM FPGA
- Custom instrument development in electronics&photonics for both terrestrial and space segments.

Major Space Projects & References
- main payload of VZLUSAT-2 satellite: two cameras (HW&SW) for Earth observation
- control computer board for the X-ray imaging detector onboard VZLUSAT-2.
- SpaceWire subsystem design (FPGA+SW)
- ELT-TT-21 developed in ESA NAVISP programme including Ku-band ground terminal; operated over GEO satellite transponder
- Two-way Time Transfer and Ranging: in-orbit performance demonstrator in frame of ESA GSTP programme
- RF interference monitoring for space missions in frame of ESA Cybersecurity BA programme





- INDUSTRY
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esc Aerospace s.r.o.

General Description
esc Aerospace is a leader in the field of space qualified on-board hardware and software in Europe, USA and Asia, and is one of the leading SMEs in R&D projects with a focus on Space and Defence.

Competences & Capabilities
esc Aerospace is highly experienced in the areas of space qualified software and electronics as well as in the UAV and C-UAS development.
esc Aerospace also contributes to other Czech space missions and is currently designing its own new satellite with hyperspectral capabilities and secured connectivity technologies.

Products & Services
- Mission Critical Software
- Multipurpose Drive Electronics (MDE)
- On-board systems: DPU with subsystems MMU, PCDU, RTU, SDR
- On-board Computers (OBC, OBDH)
- Secure Communication: SATCOM, Quantum Key Distribution (QKD), True Random Generator (TRG)
- Payloads: Ionizing Radiation monitors, Hyperspectral Camera, LiDARs
- Test systems (EGSEs/SCOEs)
- Avionics for Unmanned Systems

Major Space Projects & References
Mission Integrator
- LVICE2 – esc Aerospace's own Ambitious mission to the Moon

Mission Critical Software
- Solar Orbiter – STIX Instrument On-board flight software
- QKDSat
- Eagle-1

SW Testing and EGSE
- TRITON-X
- ExoMars
- PLATO
- Sentinel-4

Radiation detectors
- SpacePix

Payload and Subsystem Control Devices
- SWARM ACCelerometer
- Space Rider

Space Related Equipment
esc Aerospace applies ECSS standards:
- ECSS-E-ST-40C Space Engineering – Software
- ECSS-E-ST-70C Ground systems and operations
- ECSS-M-ST-80C Risk management and SW Product Assurance
- ECSS-Q-ST-20C Quality Assurance

ECSS-Q-ST-60C Electrical, electronic and electromechanical (EEE) components

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- TESTING

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EVEKTOR, spol. s r. o.

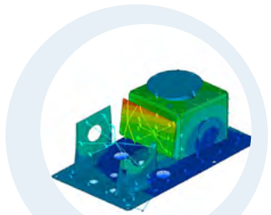
General Description
Evektor belongs among the leading development and manufacturing companies active in the aircraft industry of the Czech Republic.
Besides aviation, Evektor has extensive experience in development in the automotive and mechanical engineering industries providing comprehensive services as Design work supported by Computational Analyses FEM, CFD and EMC ending with Rapid Prototyping and Manufacturing.

Competences & Capabilities
Evektor offers full-service package from Design and Development supported by Simulations and Analyses up to Rapid Prototyping and Manufacturing.
Evektor specializes in the production of Airframes, Aerostructures, and Aircraft subassemblies.
CNC machined and formed parts are manufactured along with Aircraft Interiors, Assembly Jigs, and Tools.
Services include the Design of Airframes, Aircraft Systems, Jigs, and Tooling.
Capabilities cover Computational Analyses FEM, CFD, EMC, including Fatigue Life, Aerodynamic and Thermodynamic.
Additional offerings include Rapid Prototyping, 3D Optical Scanning and Noise Testing.
Expertise also extends to Industrial Automation and Robotization.

Products & Services
- Design and Development, Model Creation, Documentation
- Computational Analyses FEM, CFD, EMC
- Rapid Prototyping including FDM and Polyjet printing, Vacuum casting, Surface finishing
- Industrial Automation and Robotization
- Airframes, Aerostructures, Aircraft Subassemblies
- CNC machined and formed parts
- Aircraft Interiors, Aircraft Systems, Assembly Jigs and Tools

Major Space Projects & References
- Isar Aerospace – Jigs for Spectrum project
- ESA & SAB Aerospace – Computational Analyses on HTH2 project

Certificates
- LRQA AS9100D
- EASA Part 21J (DOA)
- EASA Part 21G (POA)
- EASA Part CAO



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Exact Control System a.s.

General Description
EXACT develops and provides implementation of an effective tool for highway infrastructure asset management, maintenance, reconstruction, and rehabilitation that has demonstrated direct cost savings and inherent environmental benefits. The technological tool is called Exact Street - an innovative solution for the road resurfacing process (milling and paving).

Competences & Capabilities
EXACT has been teaching the construction machine control systems for more than 20 years. We have successfully implemented technologically demanding orders in the field of geodetic works, control of construction machines and implementation of information, robotic, monitoring systems in the Czech Republic, Scandinavia, Canada.

Products & Services
- Product: Exact GNSS for construction machines control (HW, SW)
- Product: 3D Differential Milling Unit (HW, SW)
- Service for Highways (Canada): Smooth innovations – 3D milling makes inroad in Ontario (pg.10-12) www.mediaedgemagazines.com/the-ontario-road-builders-association-orba/or94/
- Service City Roads (Prague): https://cloud.teamexact.cz/s/DBCwxFQJQjPs63d

Major Space Projects & References
Method and apparatus for separation of surfacing and base layer by 3D milling method to achieve higher quality and reduced CO2 emissions in urban environments and areas with high quality or limited GNSS signal (ESA Contract No. 4000141869/23/NL/MP/dg)

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⟋ MANUFACTURING
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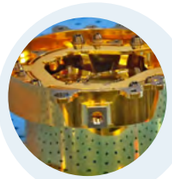
Frentech Aerospace s.r.o.

General Description
Production of parts for aircraft industry, production, integration and testing of mechanisms for space industry, project and PA management. Participation within ESA and ESO projects including commercial space projects.

Competences & Skills
Frentech Aerospace s.r.o. is hi-tech company very well equipped with modern and productive CNC machines, air conditioned inspection department with three CMMs by Mitutoyo.
There are also available clean rooms ISO 8, ISO 7 and ISO 5 with thermal testing chamber, thermal-vacuum chamber and CMM machine. The ISO8 is equipped with big-sized thermal vacuum chamber (Space simulator) and equipment necessary for processes like bake-out and contamination control.
The company is focused mainly on production of mechanical parts for aircrafts and space mechanisms including subsystems for space industry. Latest development of the company is focused on design, development and construction of subsystems for satellites and other subsystems for space industry. In this field Frentech Aerospace cooperates within scientific and commercial projects with major space integrators and ESA. Frentech Aerospace cooperates with technical universities and Czech Academy of Science. The company has long term experience with international cooperation within space projects.

Products & Services
- Precision machining – delivery of fine components for satellites, launchers and aircrafts
- Delivery of deployment mechanisms for solar panels
- Delivery of specific structures (cryostat structures, components for optical systems)
- Production, assembly and testing of space mechanisms
- Development of space mechanisms including integration (ESA and commercial projects)
- Testing activities (thermal-vacuum testing, geometrical, mechanical leak-proof, particulate
- and molecular control)
- Application of tribological coatings for Aerospace
- Qualification of Ti screws for space
- Bake-out and thermal balance testing
- Production, assembly and testing of propulsion valves for launchers
- Project management
- PA management

Major Space Projects & References
- Iridium NEXT, O3B/GB2, OneWeb
- NEOSAT
- MTG and Copernicus (Cryostat structures)
- ExoMars
- J-BOOM (ESA)
- JUICE (HDRM & MAG Boom)
- E-ump for cryogenic rocket propellants
- ATHENA Magnetic Diverter
- Rotary Actuator for Space Applications
- Space Rider (Landing gear & Mechanism)
- MetOp SG
- VEGA launchers
- Ariane launchers

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⟋ MANUFACTURING
▲ R & D
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Frentech Aerospace® member of Czech Aerospace Systems

G.L. Electronic s.r.o.

General Description
G.L. Electronic s.r.o. provides high-reliability electronic solutions and cable harness assemblies specifically tailored for the aerospace industry. Our expertise extends to comprehensive project realization, from design to final implementation.
Our new manufacturing facility in Chropyně is equipped with a state-of-the-art thermal vacuum chamber (TVAC) featuring a TQCM sensor.

Competences & Capabilities
We carry out all our projects in full compliance with ESA's ECSS standards, ensuring the highest levels of reliability and quality. To ensure optimal performance and alignment with ESA guidelines, all our production operators and quality inspectors undergo comprehensive training tailored specifically to ESA requirements.

Products & Services
- Design, manufacturing and test of cable harnesses and electronic boards
- Final routing and integration of harnesses
- Simulation modelling (structural, thermal, dynamic response, CFD)
- Testing (electrical tests, climate and vacuum chamber, wire tension test, microsection analysis of crimped joints)
- Quality assurance according to ECSS and IPC standards

Major Space Projects & References
Harness manufacturing, test and integration:
- ARIEL PAYLOAD TEST HARNESS
- CIMR LDRS & PLATFORM HARNESS
- ROSE-L ANTENNA
- VPX / SALTO
- SERANIS
- TRITON-X
- HERA
- VEGA SSMS V18
- VEGA SSMS POC Dispenser
- MWI MetOp SG
- JUICE MGAMA
- ISS Presso

PCB hand soldering assembly:
- COMET INTERCEPTOR
- ENVISION
- EAGLE
- PLATINO BATTERY
- SOLAR ORBITER
- JUICE-LRF

Space Related Equipment Labs & Certificates
Facilities in Brno:
- Cleanroom ISO 8, 210 m^2 - ESD validated production and storage area
- Integration hall (ESD validated) with a crane for flight HW (2000 kg), 150 m^2
- Test laboratory accredited to mechanical, metallographic and electronic tests of electrical connections according to ČSN EN ISO/IEC 17025:2018 standard

Facilities in Chropyně:
- Cleanroom ISO 7, 15 m^2, ESD validated
- Production and integration area, 500 m^2, ESD validated - production area 300 m^2, storage area 200 m^2

Certifications:
- ČSN EN ISO 9001:2015
- ČSN EN ISO/IEC 17025:2018
- ECSS-Q-ST-70-18/26/28/61 (operators and quality inspectors)
- IPC-J-STD-001
- IPC-A-610
- Verification process of SMD hand soldering of flight level of PCB


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G.L. Electronic Czech Company for Aerospace Technologies

GINA Software s.r.o.

General Description
GINA Software is a technology company developing and providing a public safety and security management system called GINA. The company was established in 2010 and since then has become a specialist in provision of AVL systems and field cooperation applications used by Public Safety and Defence Agencies, Humanitarian Organizations, Oil & Gas and Mining Industries.

Competences & Capabilities
The main goal is to Allow tactical coordination between commanders and field units over the same map. Respond faster & make informed decisions using the most reliable situational awareness platform.
The ultimate tool for reaching this goal is an interactive map providing constant real-time visibility of all units from variety of devices combined in a single interface with advanced features such as history of movement, data visualization, automatic reporting, video surveillance and data analysis.
In addition to that, GINA has developed an in-vehicle public safety field cooperation application featuring incident information, navigation, live data feeds, video streaming and field informational support tool.

Products & Services
- GINA Central – a modern tactical AVL software providing real-time information.
- GINA Tablet/Mobile – a emergency response/field response app.
- GINA GO – a location tracking app with panic button.

Major Space Projects & References
- Search and Rescue Operations (Haiti ,Japan, Lebanon, Czech Republic)
- Fire and Rescue Services of the Czech Republic, Slovakia, Germany, Switzerland.
- Deployment for Security Organizations
- Deployment for European Commission
- ESA FIRTS RESPonse Project (118 Verona Italy)

Space Related Equipment Labs & certificates
- Assets & Vehicle Tracking devices: Rugged GPS tracking devices, GSM connectivity, A-GPS sensor, Programmable buttons, Configurable Tracking frequency.
- Mobile Terminals: Robust device with ergonomic design for whole day usage, enabling extension by accessories: Smartphone features, GPS location sharing.
- Iridium Satellite Terminal: Unique solution for intelligent tracking over satellite and mobile networks: Iridium/GSM/3G network connectivity, Price equivalent to personal satellite trackers, Predictive location sending, Interactive map.

● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D
ᵀ TESTING

Contacts:

GINA Software s.r.o.

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Responsible for space and ESA projects:

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Gisat s.r.o.

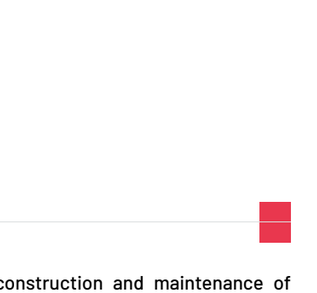
General Description
Actionable intelligence from Earth observation
With 30 years of experience, we transform complex remote sensing data into insights ready to serve your decision making. Acting globally in a wide range of thematic domains, our mission is to provide our clients a complete portfolio of value delivering geo-information services based on Earth Observation data. We are committed to supporting sustainable living and using Earth's resources by enabling everyone to make better decisions about our environment.

Competences & Capabilities
Combining remote sensing, artificial intelligence and big data analytics we operate a complete value-chain to unleash the power of Earth Observation data at one place. Our online platform solutions introduce ready-to-use spatial data exploration tools and integrate them into clients' decision-making mechanisms. We provide our service and products to a diverse group of clients that includes international & financial Institutions, public & state authorities and businesses worldwide.

Products & Services
- **Agriculture:** Operational agricultural monitoring and food production assessment serving farmers, industry, governments and agencies
- **Sustainable Urban Development:** Geospatial solutions for livable and vibrant cities and regions
- **Geohazards Mapping And Monitoring:** Risk assessment support via up-to-date information about hazard status and insight into its evolution in space and time
- **Utility And Infrastructure:** Early identification of risks and support to planning, construction and maintenance of utility and infrastructure assets
- **Environmental Monitoring And Natural Accounting:** Monitoring services providing critical support for our challenging commitments targeting the resilience of ecosystems and society

Major Space Projects & References
Dozens of research and commercial projects provided to industry, governments, public institutions and international agencies (ESA, EC, EEA, JRC, EUSC, World Bank, ADB, IADB).

Space Related Equipment Labs & certificates
The company is ISO 9001 & ISO 14001 certified to guarantee the quality of provided services and to reflect the responsibility in environmental impacts of its activities.



● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D
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GISAT s.r.o.

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GROUNDCOM.SPACE s.r.o.

General Description
Groundcom develops and operates a new generation of ground stations for satellite operations. Shared ground station network enables satellite constellations to be operated cost-efficiently at any time from any point on Earth. On-premise and dedicated ground station networks provide secure and independent access to satellites.

Competences & Capabilities
Groundcom builds dedicated worldwide ground station networks supporting independent operations of IoT, telecommunication and earth observation satellite constellations.

Groundcom also operates a shared network of ground stations around the world offering cost-efficient telemetry collection and control (TT&C) and data downlink services for satellite missions on various orbits.

Its new generation of mobile multi-band ground station is designed for rapid deployment and secure satellite operations.

Over years Groundcom has built strong research and development capabilities in the area of satellite communication and constellation operations. Leveraging this experience, Groundcom leads and participates in numerous research projects, collaborations and initiatives.

Products & Services
- VHF/UHF ground station
- S-band ground station
- Dual S/X-band ground station
- Shared Ground station-as-a-Service (GSaaS)
- Dedicated ground station networks

Major Space Projects & References
- Multibeam phased-array satcom antenna
- Digital beam forming demonstration
- Ku band terminal for tracking and spectrum-monitoring
- Advanced dual-band S/X satellite communication ground station with intelligent steering

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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GROUNDCOM.SPACE s.r.o.

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Hikade Technologies s.r.o.

General Description
Hikade Technologies focused on R&D tasks in various areas of mechatronics. Our speciality is in development of high-precision mechatronic systems for space, aerospace, and advanced industrial applications.

Competences & Capabilities
We draw on our previous professional career and experience in space, aerospace, advanced technologies as well as biomedicine and electron microscopy. We deliver complex development and production of entire devices in the fields of mechanical and electrical engineering, optics as well as advanced SW programming.

Products & Services
Our main focus is the development of a two-axis positioning device for HAPS. We designed precise positioning and stabilization of optical and communication payloads in demanding environments. We are also expanding our own testing facilities laboratory and testing equipment.

Major Space Projects & References
- GIMBAL PATRON – Modular positioning system developed for integration with high-resolution optical cameras.
- GIMBAL LEVEL – Dual-axis stabilizing system with an integrated laser module, designed for quantum communication. Built for use on High Altitude Pseudo-Satellites (HAPS), it enables accurate, real-time guidance of optical beams for secure data transmission.
- Cryovacuum Chamber – Chamber designed for testing components and assemblies in deep vacuum and cryogenic temperatures, simulating environmental conditions.

- INDUSTRY
- SERVICES
- R & D
- TESTING

Contacts:

Hikade Technologies s.r.o.

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Responsible for space and ESA projects:
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Honeywell International s.r.o.

General Description
Honeywell has a long and proud heritage in the Czech Republic. Since opening its first office in 1962, Honeywell has expanded to operate from three locations in the Czech Republic: Prague, Olomouc and Brno. In space sector, Honeywell provides innovative products that have contributed to the mission success of many different and varied space platforms.

Competences & Capabilities
Honeywell provides various solutions and products required for accurate momentum control, pointing, guidance and navigation, data control and other satellite, launch vehicle, missile related products. Close cooperation with ESA also led to several breakthrough solutions and technologies in the field of satellite communication.
Utilizing this experience and a dedicated development laboratory, Honeywell has expertise leading to a high probability of mission success, regardless of the spacecraft challenge presented.

Products & Services
Leveraging our industrial and research capability across the Czech Republic, Honeywell serves space users with state-of-the-art products and services in number of areas:
- Satellite Guidance & Attitude Control
- Momentum Control Systems & Control Moment Gyros
- MEMS Inertial Sensors & Units
- Antenna pointing mechanisms
- Satellite Communication & Optical Communication

Space Related Equipment, Labs & Certificates
Various test beds are enabling Honeywell to support its customers in risk-reduction testing of new dynamic and structural control systems for new satellite programs. Honeywell offers:
- Upfront modeling and simulations
- Validation of modular and scalable designs
- Experimentation with various attitude, momentum and vibration control scenarios and interactions
- Verification of new control schemes and code
- Testing of hardware and software in an open or closed looped test environment

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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Honeywell International s.r.o.

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Honeywell

Huld s.r.o.

General Description
Huld is a European technology design house with over 450 employees and 11 offices in Finland and the Czech Republic. Huld offers an internationally unique combination of software and product development expertise. We bring more intelligence to our customers' business. We always work for a more intelligent future and care about the world around us.

Competences & Capabilities
Huld provides high-reliability software solutions for many of Europe's most ambitious space missions and customers such as Airbus or OHB as well as innovative startups. Our purpose is to provide technological design expertise to our customers on their journey beyond tomorrow, safely & securely. We have broad experience with ESA projects but also new space projects focusing on embedded software, GNSS technologies or ISVV.

Products & Services
- Onboard Software
- Onboard Data Processing
- Ground Processing
- Independent Software Validation and Verification
- Test Software & Simulations
- Development & Validation Services
- Space Security

Major Space Projects & References
- Milani CubeSat is part of the deep space mission Hera. We are responsible for On-Board Software and Data Processing Unit development. The DPU fulfills industry standards as well as includes experimental AI algorithms to measure image quality and is optimized for reliable operation in deep space missions.
- HERA AI FDIR project's goal is to design and develop AI-based failure detection application. The AI will be deployed on OBC and allow faster and better anomaly detection and prediction.
- Block-box for an optimized GNSS spectrum monitoring network using AI
- Memory Control Sub-System for Low Earth Orbit Applications
- Advanced Algorithms & Techniques for Resilient Time Provision
- The TIIRA project addresses the first step towards the standalone GNSS/ Galileo receiver with an open-source solution and resulted in a Minimum Viable Product and a commercially viable solution for cooperative navigation targeted to a premium mass market.
- Orbitcon is a mission control system (MCS) customized for small sats. It offers standard interfaces and easy mission instantiation. The service is hosted in a cloud environment, accessible globally, with all tools needed to cover a whole lifecycle of a mission.
- Plato the PLAnetary Transits and Oscillations of stars mission. Huld is the Spacecraft Software Prime in a consortium led by OHB.

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D

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huld
Beyond tomorrow

HVM PLASMA, spol. s r.o.

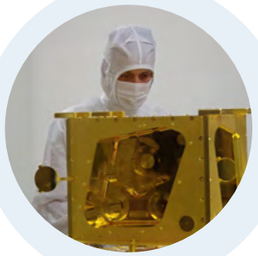
General Description
HVM PLASMA was founded 1992 and provides PVD job coating services in its two job coating facilities (mainly tribological thin film coatings for automotive customers), designs and manufactures key components for PVD equipment and vacuum chambers and provides analysis of materials and thin films.

Competences & Capabilities
The main competencies in space sector are space qualified PVD coating of Au thin film at cleanroom conditions, manufacturing of vacuum equipment for analysis and testing, thermal vacuum outgassing test according to ECSS-Q-ST-70-02C and outgassing measurement/degassing of objects of size up to 20x20x30cm. We can provide several types of thin film coatings based on customer needs.

Products & Services
- Space qualified PVD Au coating (magnetron sputtering) of components at cleanroom conditions
- Design and manufacturing of vacuum chambers and equipment
- Thermal vacuum outgassing test according to ECSS-Q-ST-70-02C and outgassing measurement/degassing of objects of size up to 20x20x30cm at conditions inspired by ECSS-Q-ST-70-02C
- Surface, material and thin film analysis

Major Space Projects & References
- Au coating for cryostats of Meteosat Third Generation (MTG) satellites
- Au coating for cryostat of Copernicus CO2M satellite
- Part of team of Cubesat VZLUSAT-1 (TiN and Au coatings on structural components)
- Part of team of ESA project SR-CPT (Space radiation capabilities, technologies and platforms for small spacecraft and CubeSats) - outgassing measurement and outgassing sensor response characterization.

Space Related Equipment, Labs & Certificates
- Manufacturing, job coating and testing according to ISO9001
- PVD equipment for thin film deposition (magnetron sputtering) placed in cleanroom conditions
- Laboratory for Thermal vacuum outgassing test of materials according to ECSS-Q-ST-70-02C and for Thermal vacuum outgassing measurement/degassing of objects of size up to 20x20x30 cm at temperature up to 250°C



● INDUSTRY
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× SERVICES
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ᵀ TESTING

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Iguassu Software Systems, a.s.

General Description
Iguassu Software Systems (ISS) software solutions for ESA, Eumetsat, Spaceopal, ESSP, EUSPA, TAS, Airbus DS and other international customers.
Core expertise SBAS/Galileo, Space Safety (robotic telescopes, Flyeye, asteroid and space debris detections), Ariane 6 software.

Competences & Capabilities
In space technologies since 1994 e.g. Meteosat TP MCC CF, SCOS, ground segment systems ESOC, ESRIN, IRIDIUM terminal test software, MSG, MCF, MSG PGS etc. Since 2005 (ESA membership) ISS has been developing space software solutions for
- MEOLUT (Medium Earth Orbit Local User Terminal (MEOLUT) for GJU with Indra
- GNSS (e.g. SBAS performance tools for ESA), Collision Risk Estimation & Automated Mitigation (CREAM#3 for ESA), Machine learning to model GNSS (ESA). For EUSPA we work with Spaceopal on Galileo High Accuracy User Terminal (HAUT).
- Space Safety – robotic telescope test bed, Flyeye telescope, optical sensors qualification, telescope data processing chain
- Sat-com (Antares with TAS-I & Indra), IRIS (INMARSAT)
- Launchers - Ariane 6 telemetry onboard processing software, and ground segment s/w We can also work in Spanish, German and Portuguese, with basic French, and Japanese

Commercial Products
Our software runs in the TAS-F EGNOS simulator (5 year maintenance contract), CNES, ESA, West African ANS, ESSP (EGNOS operator), Romanian Space Institute, UK Lighthouse Authority, Telespazio, CNES, and even in the Japanese government institute (QZSS) ENRI.
- EVORA – real-time GNSS performance monitoring, multi-constellation, dual frequency (MCDF)
- SBAS Simulator II – volume simulator, MCDF
- SENDAI – long term GNSS performance monitoring statistics and data mining too, MCDF

Clients, partners
ESA (ESOC, ESRIN, ESTEC, EGNOS Project Office Toulouse), Eumetsat, GJU/Indra, ACS-I, CAM GmbH, Iridium sub., SciSys-UK, Indra-E, Integral-F, TriPolus-UK, Airbus SD-D&F, TAS-F, TAS-I, GMV-E&R&PL, Sybilla-PL, Integricom-NL, Vega-D, Quasar-E, Clemessy-F, Critical Software-D&P, Telespazio-F, Ariane Group, ESSP, SpaceOpal, ENRI-Japan, ASECNA-West Africa....

● INDUSTRY
■ SOFTWARE
▲ R & D

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INPRAISE SYSTEMS s.r.o.

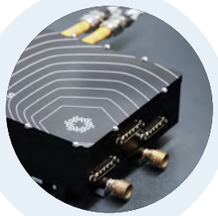
General Description
Inpraise Systems specializes in developing custom high-speed rotating machines supplied as system-qualified units including control electronics. The portfolio covers e-pumps, compressors, and turbines. Core expertise includes high-frequency stators and rotors, VFD inverters for motor control at extreme speeds, oilless gas and low-viscosity hydrodynamic bearings.

Competences & Capabilities
Focusing on specialized, critical applications, small-series production and prototyping are prioritized. The developed turbomachines serve diverse purposes, ranging from space-rated e-pumps for rocket engine fuel feed and satellite thermal management to in-orbit cryogenic refueling.
These turbomachines are also vital in terrestrial applications across the energy, power, and transportation sectors, providing pure air feed for fuel cells, synthetic fuel production, and energy recovery in gas processing using expansion turbines.
In the power electronics domain, solutions range from hundreds of watts to tens of kilowatts, with a specialization in radiation-hardened, high-reliability power electronics.

Products & Services
Machine systems:
- High-speed electric pumps, compressors, turbines (including turbochargers)
- High-speed electric motors
- Variable-frequency drive (VFD) power inverters

Components and sub-systems:
- Fluid bearings (gas bearings, ultra-low viscosity bearings, aerostatic bearings)
- Shaft sealing (dynamic sealings, static bearings, hybrid bearings)
- High frequency high-speed motor elements
- Integrated work stages (pumps, compressors, turbines)
- Power electronics, motor controllers, power management electronics, control firmware

Major Space Projects & References
- MON/MMH e-Pumps for a Storable 6 kN Rocket Engine (ESA)
- MON/MMH e-pumps for deep throttling 2-7 kN rocket engine (Nammo)
- Ammonia pump package for active thermal control of large satellites (ESA / TAS France)
- HTP/Ethanol green storable propellant feed e-pumps (ESA)
- Electrically assisted turbopump for 30kN class rocket engines (ESA)



- INDUSTRY
- MANUFACTURING
- SOFTWARE
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- R & D
- TESTING

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Inpraise systems s.r.o.

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INPRAISE SYSTEMS

KYOCERA AVX Components Czech Republic s.r.o.

General Description
KYOCERA AVX is a leading global manufacturer of advanced electronic components. The company has manufacturing facilities spanning more than 15 countries around the world. KYOCERA AVX designs, develops, manufactures and supplies advanced capacitors, antennas, connectors, circuit protections, timing devices, sensors, controls, filters, fuses, diodes, resistors, couplers and inductors optimised for employment in the international aerospace, automotive, consumer electronics, industrial, medical and military markets.

The **KYOCERA AVX Lanškroun plant** has many technological innovations able to offer a wide range of electrolytic capacitors for all kinds of applications.
In 2004 the plant's capabilities were extended to include capacitor's conductive polymer technology. AVX was the first company to market with several new polymer tantalum capacitors technologies.
In 2013 the TCH (hermetic polymer capacitor product) was developed in cooperation with the ESA. This product is suitable for application where the highest reliability and extended lifetime within harsh environments is required.
KYOCERA AVX is acting in various space programmes throughout the world. We have an established supplier position for the European Space Agency and offer surface mount tantalum capacitors under TAJ ESCC (1993), TES ESCC (2013) and polymer TCS ESCC (2020) drawings.

Products & Services
- Chip SMD capacitors (standard tantalum and polymer electrolytic capacitors)
- Specialities: microchip, wet, hermetic, modules

For consumer, industrial, geological, automotive, high reliability, medical, military and aerospace applications.
Meet performance requirements for projects including: Voyager Space Probe, Mars Rovers, ISS, Shuttle.

Major Space Projects & References
- NASA Artemis project – back to the moon: part of the Artemis project comprises a multi-purpose crew vehicle and service module on the Orion. The service module was designed and built by ESA and incorporates TES/TAJ-ESA components.
- INDIA – Chandrayaan mission: TCH/TES on the ISRO Pragyan Rover.
- Part on low orbit satellite projects: GEO/LEO/MEO. Various range of components.
- 630 pcs of TBM tantalum capacitors are powering the ChemCam module laser on the Curiosity Mars Rover.
- 350 pcs of TBM in project Perseverance on follow-up design in laser supply boarding in Supercam.
- Part on the TURKSAT Satellite Programme (TES, TAJ-ESA).

Space Related Equipment Labs & certificates
- IATF 16949:2016 – Automotive
- ISO 9001:2015 – QMS
- ISO 14001:2015 – EMS
- ESCC 3012/001 – SMD solid tantalum chip capacitors
- ESCC3012/004 – Low ESR tantalum chip capacitor
- ESCC3012/006 – Polymer solid electrolytic capacitor
- MIL-PRF-790 – established and high reliability QPL std.
- MIL-PRF-39006 – Military spec. for wet capacitor
- MIL-PRF-55365 - Military spec. for tantalum capacitor
- DLA 04051 - Military spec. for polymer capacitor

- INDUSTRY
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KYOCERA AVX

LA composite s.r.o.

General Description
LA composite s.r.o. is a company dealing with the design, development and production of composite parts for the aerospace industry. LAC is a qualified supplier for Airbus, Airbus Helicopters, Leonardo Helicopters (formerly Agusta Westland), Daher-Socata and others, including special processes. In terms of R&D activities, LAC cooperates on research projects with Czech technical universities and the Czech Aerospace Research Centre. Besides the space applications and aerospace industry LAC produces components for the transportation and general industry as well.

Competences & Capabilities
Manufacturing and development of monolithic and sandwich composite components, primarily using the prepreg technology. LAC also provides moulds, tooling design and production, bonding of composite structures and non-destructive testing of the produced parts.

Major Space Projects & References
Project: ESA SWARM
Scope: Bonding of sandwich structure of microaccelerometer MAC04
Project: Development of processes applicable to development and production of components for the space industry
Scope: Development of processes for the production of precise weight-sensitive sandwich panels for the space industry. Development of processes for production of long stiff beams, used for carrying sensors.
Project: Micro Wave Imager – MetOp SG
Scope: Manufacturing of base plate sandwich panel, monolithic thermal skirts and assembly of the produced parts for 5 satellite models. The contract was carried out under the MetOp-SG programme of and funded by the European Space Agency.

Space Related Equipment, Labs & Certificates
AS 9100, ISO 9001
Facility
- Workshop area 1 000 m2
- Clean room class ISO 8
- Freezer for prepreg storage 180 m2

Equipment
- Laser positioning system for prepreg lay-up
- 5-axis CNC milling machine - 6000 x 2220 x 1000 mm
- NDI equipment
- Chemical Laboratory
- Autoclave 1 (up to 200°C) – 2600 x 9000 mm
- Autoclave 2 (up to 200°C) – 2300 x 7000 mm
- Ovens up to 3000 x 2500 x 7000 mm (250°C)

Quality Control
- CMM
- NDI (provided by mother company ATG s.r.o.)
  - Penetrant Testing
  - Magnetic Particle Testing
  - Ultrasonic Testing
  - Eddy Current Testing
  - Radiographic Testing
  - Visual Testing
  - Leakage Testing
  - Infrared Testing

- INDUSTRY
- MANUFACTURING
- R & D
- TESTING

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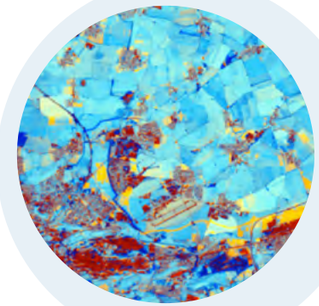
Mapradix s.r.o.

General Description
Mapradix is a company specializing in satellite Earth observation and geospatial technologies development. Its main purpose is to foster innovation in the operational mapping and monitoring of the land.

Competences & Capabilities
The company was established in 2016 and since then it develops technology for very-high resolution continuous change monitoring. The company is providing services in a number of downstream sectors: agriculture, hydrology, forestry, and land mapping in general. The company developed a specialized technology for image time series quality assessment and Analysis Ready Data (ARD) processing, which fits directly in the land change monitoring system.

Products & Services
- Land Cover and Land Use mapping
- Land Change and Continuous Land Dynamics monitoring based on satellite time series
- Earth observation data quality assessment
- Consultancy in land monitoring

Major Space Projects & References
- ESA: Spatiotemporal Land Change Monitoring with Sentinel-2 and VHR Images
- EEA: Natura 2000 evolution study (Copernicus programme)
- ESA: Quality Control Manager for Land Monitoring Services
- Urban Street Surface Mapping



- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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MCE Slaný s.r.o

General Description

Founded in 1991, MCE Slaný s.r.o. is the largest steel structure construction company in the Czech Republic. Specializing in bridges, heavy steel construction, and large-scale weldments, MCE Slaný is a subsidiary of the Austrian HABAU GROUP. MCE is dedicated to meeting our customer requirements in steel structure construction with customized, individual solutions. MCE Slaný is an expert, all-in-one general contractor whose Hi-Tech projects include deliveries of Airbus assembly and handling products, supply of aerodynamic and aero-acoustic tunnels for Mercedes-Benz and BMW, and delivering on demanding, non-traditional projects for both assembly and production.

Competences & Capabilities

We manufacture reliable and high-quality steel structures and our proven best-practices, advanced production technologies, and highly-qualified professional workforce ensure compliance and satisfaction from start to finish. We specialize in medium and heavy steel construction with materials up to 690 MPa, including special steels such as HARDOX. We deliver comprehensive project security from technical support and equipment development to all stages of construction, including oversized transport, assembly, and installation. Our customers, Airbus, ABB, and Siemens are world leaders in innovation and technology.

Major Space Projects & References

All-inclusive production of the deflector shield for the ELA 4 Launch Ramp of the Ariane 6. Weighing ca. 650 tons, plus ca. 120 tons in parts, MCE Slaný developed or assisted in every stage of the project including but not limited to: Device development (and calculations) 3D model production

- Deflector shield assembly and water-cooling system performance
- Metallizing all components via hot-dip galvanizing
- Finish coat
- Overseas packaging
- Transport
- Final assembly (Kourou, French Guiana)
- Manufacture and supply of Toolox spare parts

Space Related Equipment, Labs & Certificates

- 10,000 tonnes of steel structures per year
- 440,000 hours of production capacity per year
- 35,600 m2 of production area
- 3 paint shops
- Maximum parts manufactured dimensions (100 tons, 30 x 7 x 4.5m)
- Staff and devices for NDT testing UT, MT, PT, all level 2
- ISO 9001ISO 14001BS OHSAS 18001EN ISO 3842-2, EN 1090-1, -2 EXC -4EN 15085 CL -1 M

- INDUSTRY
- MANUFACTURING
- SERVICES
- R & D
- TESTING

Contacts:

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Responsible for space and ESA projects:

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Meopta s.r.o.

General Description

- Global manufacturer specializied in the design, engineering and assembly of world-class optical, opto-mechanical and optoelectronic systems.
- Innovative and complex solutions for the consumer, industrial and military markets.
- Experience in precision medical and scientific instruments, aerospace technologies and military weapon systems.

Competences & Capabilities

- Long tradition of development and manufacturing of high quality precision optics and mechanics for components, optoelectronic and optomechanic subsystems and full turn/key systems.
- Development process from the development of an initial prototype through the serial production of a final product.
- Guarantee of the cutting-edge innovative sollutions and highest level of quality and performance in manufacturing.

Major Space Projects & References

The main ESA projects:

- TESLA OH-OB (prism & band filters design, development, production, coating, and qualification).
- Flex (mirror & coating design, development, production, and qualification).
- OHB - SHS project (optical and mechanical design, development, production, and qualification).

Space Related Equipment, Labs & Certificates

- Manufacturing area of 100 000 m2
- Clean rooms with class up to 10, equivalent ISO 4, and AMC control.
- In house testing equipment (excluding thermal vacuum and radiation).
- More information about our lab possibilities: testinglab.meopta.com
- Certificates: IS09001, IS014001, AS9100D, AQAP2110

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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Since 1933

MeteoInsight

General Description

Let's Earth is the developer of MeteoInsight solution - an online application that helps building energy assessors and energy managers in improving the reliability of their data-driven energy-efficiency recommendations while saving time on data processing by providing them with instant access to ready-to-use meteorological datasets specific to a building site.

Our commitment to delivering the highest-quality data is reinforced by the use of satellite-enhanced meteorological datasets and advanced machine learning algorithms.

Competences & Capabilities

- Extracting meteorological conditions for a specific building site (meteorological modelling)
- Processing of meteorological data:
  - Of specific months and years (weather data)
  - For long-term averages and extremes (climate data)
- Calculating energy-related weather indices: Heating Degree Days and Cooling Degree Days
- Preparing meteorological data for building energy calculations and simulations:
  - Historical meteo data (1950-2023)
  - Future meteo data (2024-2100) using IPCC emission scenarios
- Creating reports for adapting buildings to local climatic changes (e.g. heatwave analyses)

Products & Services

- MeteoInsight – an online application for building energy assessors and energy managers, providing instant access to ready-to-use meteorological datasets specific to a building site.

Major Space Projects & References

- Climate-proofing of buildings – feasibility study under ESA Business Applications (you can find it at: https://business.esa.int/projects/climate-proofing-buildings

● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D

Contacts:

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OHB Czechspace s.r.o.

General Description

Since 2018 OHB Czechspace, located in Brno, Czech Republic, has been a member of the Space and Technology group OHB SE, one of the space industry leaders in Europe. OHB Czechspace focuses on development, design, verification, procurement, testing, and related product assurance tasks of spacecraft and launcher structures for governmental space agencies as well as for other space industry players in accordance with ECSS and/or Customer's requirements.

Competences & Capabilities

System Engineering

Systems development from the definition phase to the realization including requirements definition and management, verification planning and performance.

Spacecraft Design

Design of spacecraft systems from the conceptual phase to detailed design and manufacturing support including spacecraft accommodation, mass estimation and IRD generation.

Structural Analysis

Analysis and verification of space products, such as structural items, sub-assemblies, satellite systems, electronic equipment including:

- Generation of FE models (including Condensed models)
- Structural analyses and verification
- Design optimization

Thermal Design & Analysis

Design and Analysis of the space thermal control subsystems including:

- Generation of thermal models (GMM/TMM)
- Definition of critical environments, boundary conditions and thermo-optical properties, subsystem requirements
- Analyses (steady state/transient heat flow)
- Thermal components definition/selection and optimization

Major Space Projects & References

OHB Czechspace has been awarded various contracts within ESA programmes.

Comet Interceptor - (Phase B2/C/D) - Structural analysis of sandwich panels, tertiary structure items and AIT of the dust shield.

SOVA - Satellite Observation of waves in the Atmosphere

NEP - Study on the Use of Nuclear Energy for Challenging Space Missions

HERA - Development, design, verification, and supply of the complete spacecraft's structural subsystem and MGSE including spacecraft's vibrational test campaign.

PLATO - Structural analysis of the spacecraft's central tube, leading and execution of static load test.

Space Related Equipment, Labs & Certificates

ISO 9001:2015

● INDUSTRY
⟋ MANUFACTURING
× SERVICES
▲ R & D
T TESTING

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ONE3D s.r.o.

General Description

ONE3D is a global company shaping the future of products. As a leader in advanced manufacturing and technological development, we integrate additive manufacturing, advanced materials, and engineering innovations. Our mission is to enable companies to innovate faster and create products that push the boundaries of modern production.

ONE3D is active in industries such as aerospace, defense and space in the CEE region. ONE3D also has customers worldwide - in the UK, USA, Australia and Taiwan.

Competences & Capabilities

Key technologies

The company uses plastic and metal additive manufacturing technologies such as SLS, SLA, MJF and DMLS. The hybrid production workflow includes additive manufacturing and 5-axis CNC milling. In 2025 ONE3D is going to install one of the biggest AM production equipment in the Europe – NXG 600E by Nikon SLM Solutions.

Research and Development department

The R&D department develops components that can withstand extreme conditions, high temperatures, pressures or vibrations. The focus is on precision, repeatability and optimization of every detail - whether it is a prototype or a certified final part.

The department actively cooperates with industrial partners and research institutions. It has access to knowledge and advanced technologies, while being able to respond flexibly to individual customer needs. Designs developed in R&D are conceived from the outset with regard to manufacturability, functionality and future application in real operation.

The R&D department at ONE3D gives companies a competitive advantage: it combines cutting-edge engineering, deep knowledge of advanced materials and the ability to iterate quickly. Its mission is to transform complex challenges into concrete, scalable solutions - and to do so in collaboration with those who want to push the boundaries of human endeavour beyond and within the Earth's atmosphere.

Wide materials portfolio

Polymers: PA12 materials and composites, TPU

Metals: Stainless steel 1.4404, Tool steel 1.2709, Aluminum alloy AlSi10Mg, Inconel 718, Ti64 (3D2SPACE), Al2139 AM

Products & Services

- research and product development
- design for additive manufacturing
- AM parts providing
- advanced post-processing
- electrochemical polishing of metal parts
- 5-axis CNC milling
- combination of AM and CNC for hybrid production

Major Space Projects & References

- C3S – Orbital Whereabout Locator (OWL) instrument in CubeSat
- (Flight Heritage 11/2023)
- Laser Lidar Demonstrator in Troll Satellite (Flight Heritage 01/2025)
- HyDeCUBE – prime contractor
- Axiom Space – signed LoI/LoS

Space Related Equipment, Labs & Certificates

- EN 9100, ISO 14001, ISO 45001
- we are following the ECSS-Q-ST-70-80C standard for AM technology
- ONE3D lab for testing and validation of mechanical properties and accuracy.

- INDUSTRY
- MANUFACTURING
- SERVICES
- R & D
- TESTING

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OPTOKON, a.s.

General Description

OPTOKON, a.s., founded in 1991 in Jihlava, Czech Republic, is a global provider of advanced opto/electronic technologies and IT infrastructure solutions. The company took over the optical division of the former state enterprise TESLA and later served as the main development partner for Methode Electronics (USA) from 1996 to 2011.

Competences & Capabilities

The OPTOKON Group is structured into specialized divisions, with its headquarters in Jihlava and two primary R&D branches:

- Applied Development in Prague – focused on advanced optoelectronic modules, custom electronics and radiation sensors
- System Development in Jihlava – focused on tactical systems and secure communications. Development is supported by an accredited Testing Division (MIL-STD-461G), an internal climatic chamber, CNC and 3D additive manufacturing, and compliance with ČSN EN ISO/IEC 17025 standards.

Products & Services

Key solutions include the AIRDA ruggedized display, designed for demanding military and industrial environments, and the LMRS radiation sensor, used across land forces, aviation, and space platforms. The portfolio also includes test and measurement equipment, tactical electronics, and FTTx technologies.

Global Facility Presence

- OPTOKON North America (USA)
- OPTOKON Elektronik, Ltd. (Turkey)
- OPTOKON Kable Co., Ltd., s.r.o. (Czech Republic)
- OptoNet Communication, spol. s r.o. (Czech Republic)
- OPTOKON Pacific (Malaysia)
- OPTOKON Middle East Industries Co., Ltd. (Saudi Arabia)

Major Space Projects & References

- Cooperation with SpaceX through OPTOKON Group subsidiaries
- Optical links for telescopes at Panaram Observatory, Chile
- Interconnection project with Astronomical Institute of the Czech Academy of Sciences

Space Related Equipment, Labs & Certificates

- OPTOKON R&D Innovation Department
- Accredited Calibration Laboratory No. 2315
- EN ISO 9001:2015 Quality Management
- EN ISO 14001:2015 Environmental Management
- AQAP Certification for defense-grade processes

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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WWW.OPTOKON.COM

OteSpace

General Description
OteSpace, s.r.o. was founded in 2022. It is engaged in the development and manufacture of rocket engines for low-Earth orbit payloads.

Competences & Capabilities
Our company was founded in 2014, when a group of enthusiastic scientists realized the development of liquid rocket engines. From 2014 to 2023, the development and validation tests of this engine took place in order to develop engines for the launch stages of rockets delivering cargo to low Earth orbit. Our company possesses a unique technology that has been developed for maximum efficiency, sustainability, low economic cost and using environmentally friendly - non-toxic fuels. This technology includes specific components of the entire fuel transport system and combustion chambers, developed by us, so as to achieve maximum reliability of the performance effect and economy.

Products & Services
- development of uncooled combustion chamber
- development of pumps and control units for fuel supply
- development of a cooled combustion chamber
- improved development of tanks, pumps and control units for these combustion chambers

Major Space Projects & References
Work for company BD SENSORS

● INDUSTRY
▲ R & D
ᵀ TESTING

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PEKASAT SE

General Description
PEKASAT SE is the European joint-stock company founded in 2012, specialized in ground segment systems, equipment and operations for satellite networks. It operates its own ground station located near the city of Kyjov and HQ/offices in Brno, Czech Republic. Using its long-term experience in satellite communications and cooperating with the most important satellite operators from around the world in domestic and international regulatory processes of satellite networks and ground stations.

Competences & Capabilities
The core capability of PEKASAT is the operation of the ground station for LEO/MEO/GEO satellites in South Moravian region of Czech Republic, where on almost 40 000 m2 with excellent natural and technical properties provides services for its domestic and international customers with satellites on various orbits and frequency bands.
Among others, PEKASAT SE has developed several RF components and assemblies for antenna systems, such as X-band waveguide feed, LNAs, filters, frequency converters, etc. Last but not least is the development of SW Skycoor for interference calculations between satellite networks, ITU requirements and spectrum database tool for international frequency coordination and regulatory processes.

Products & Services
- Services in S-/X-band and UHF/VHF
- Satellite Monitoring and Control (TT&C)
- High-speed Payload Data Downlink
- IT services
- Antenna/equipment hosting
- HW development (RF equipment, Antenna assemblies)
- SW development (Skycoor, MOC, Data processing)
- Assistance in frequency coordination and regulatory processes
- Analyses and Consultancy

Major Space Projects & References
Project AMBIC (ITT2)
- Consortium member responsible for ground segment and communications
- Prime contractor: VZLU
- Project partners: SAB Aerospace and World From Space
- Duration: 2022-2023

Project QUVIK (ITT3)
- Consortium member responsible for ground segment and communications
- Prime contractor: VZLU
- Project partners: Masaryk University and TOPTEC
- Duration: 2022-2023

Certificates
- DIN ISO 9001:2015
- DIN ISO 27001:2013
- Member of World Teleport Association

● INDUSTRY
⟋ MANUFACTURING
■ SOFTWARE
× SERVICES
▲ R & D

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PlasmaSolve s.r.o.

General Description
PlasmaSolve specializes in cutting-edge digital twin simulation tools for space technologies. We are dedicated to fostering innovation in space exploration by providing simulation and virtual prototyping services. With a strong foundation in plasma, thermal analysis, low pressure aerodynamics and material science, our expertise extends beyond space applications, making us a versatile and trusted partner in the aerospace sector.

Competences & Capabilities
At the core of our capabilities lies our proficiency in developing digital twin simulation tools tailored to the unique demands of the space industry. We excel in:

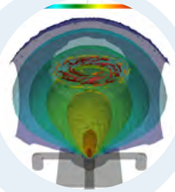
- **Electric Propulsion System Simulation:** We have a proven track record of assisting companies in the development of groundbreaking electric propulsion systems, such as the PlasmaJetPack by COMAT or SpaceLabEU air-breathing thruster, revolutionizing space propulsion technology.
- **Thermal Balance Simulation:** Our expertise extends to simulating thermal balance in orbit, ensuring that spacecraft maintain optimal operating temperatures in the harsh conditions of space.
- **Aerodynamics in Low Earth Orbits:** We have actively contributed to European Space Agency (ESA) projects by conducting simulations of aerodynamics in very low Earth orbits, enabling precise orbital planning and control.
- **Material Science:** Our in-depth knowledge of material science empowers us to develop advanced materials and coatings for both space and non-space applications, enhancing the durability and performance of aerospace components.

Products & Services

- **Simulation Services:** Expertise in conducting complex multi-physics simulations for space-related projects, ensuring mission success and cost-effectiveness.
- **Virtual Prototyping Services:** Virtual modeling and testing to validate designs, reducing the need for physical prototypes and accelerating development cycles.
- **Material Science Consultation:** Consultation and development of cutting-edge materials and thin film coatings for aerospace and non-space applications.

Major Space Projects & References
Our contributions to the space industry include collaboration on significant projects and references, such as:

- **ESA Projects:** Active participation in ESA projects aerodynamics analysis at (very) low Earth orbits.
- **PlasmaJetPack Development:** Pivotal role in assisting companies with the development of the groundbreaking PlasmaJetPack electric propulsion system.
- **SpaceLabEU Development:** Design and development of the ionization source for an air-breathing electric propulsion system of SpaceLabEU.
- **Advanced Coating Solutions:** Designing advanced thin film coatings for space applications, enhancing component longevity and performance.



● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D

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ProjectSoft HK a.s.

General Description
ProjectSoft is an automation and engineering company focused on technology processes, information and robotic systems. Our customers are prestigious scientific institutes, space agencies and different industries all over the world.

Competences & Capabilities
ProjectSoft belongs among the top suppliers of automatic technology processes, information and robotic systems. Our customers are industrial enterprises and scientific institutes. The essential part of our activities is implemented in the food industry. We own and create our know-how for the robotization and control of astronomical devices. We have developed and have been improving our system for the visualization of technological processes. We supply entirely new technologies and also provide reconstructions and refurbishments of existing technologies or their parts. We provide a wide range of services – from machinery equipment design and supply, energy distribution systems, through automation parts up to information systems. Yet our work doesn't end with the project's delivery.

Products & Services

- Feasibility studies, creation of visions
- Supplies of complete technology
- Supplies of parts of technology and apparatuses
- Reconstructions and modernisation
- Supplies of measuring and regulation devices and electro devices
- Energy optimisation
- Technological engineering
- Development and creation of software equipment
- Training of operators and specialist staff
- Service provided by our non-stop help desk

Major Space Projects & References

- Four 2-meter telescopes made by Carl Zeiss Jena were robotized by our company.
- Robotization of 1,54m Danish telescope - full reconstruction and remote control of the Danish 1.5m telescope at ESO's La Silla Observatory in Chile.
- Robotization of OGS 1m telescope The main objective of the project was to extend and improve the precision of tracking of objects moving in the vicinity of the Earth.
- ProjectSoft´s fully robotized observatory BluEye 600 is an ultra-speed Alt/Az installation (speed of moving is up to 90°/sec) telescope with a diameter of the mirror of 0.6m.
- Robotization of ESO 1,52m telescope on La Silla observatory in Chile. The project is part of the PLATO Spec ground-based support for exoplanetary space missions.
- The control system for the William Hershel telescope is the biggest project of our astronomy department.

Space Related Equipment, Labs & Certificates
Certificates: ISO9001

● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D

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Prusa Research a.s.

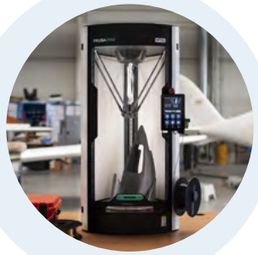
General Description
Prusa Research is a globally recognized leader in the 3D printing industry, renowned for developing and manufacturing high-quality, reliable 3D printers and filaments. Drawing from its open-source roots and fostering a strong community, the company empowers professionals and hobbyists worldwide with accessible additive manufacturing technologies.

Competences & Capabilities
Prusa Research excels in the end-to-end development of 3D printing solutions: hardware design, firmware and software development (including PrusaSlicer and Prusa Connect), and in-house manufacturing of printers and Prusament filaments, ensuring rigorous quality control. The company's technology is particularly adept at producing cheap, efficient, and fast prototypes, significantly accelerating development cycles. Furthermore, with engineering-grade materials, some printed parts can be utilized as functional components in final products. Prusa's robust and user-friendly systems, backed by a commitment to continuous innovation inspired by open collaboration, are designed for consistent performance critical for demanding research, engineering, and manufacturing applications across various sectors, including aerospace.

Products & Services
- Original Prusa 3D printers (FFF/FDM/SLA technology)
- Prusament premium quality filaments (PLA, PETG, ASA, PC Blend, Resins, etc.)
- PrusaSlicer (open-source slicing software)
- Prusa Connect (remote print management software)
- Technical support and community platforms

Major Space Projects & References
While specific project details under non-disclosure agreements (NDAs) are common, Prusa Research 3D printers are utilized by leading aerospace and space exploration companies for applications such as rapid prototyping, creating custom tooling, and manufacturing aids.
Users include:
- SpaceX
- Lockheed Martin
- Impulse Space
- Axiom Space
- Boeing
- NASA
- ESA

Space Related Equipment, Labs & Certificates
- Extensive in-house 3D printing farm for testing, development, and production.
- Advanced material testing facilities for filament development and quality control.
- Capabilities for producing parts with engineering-grade materials suitable for functional prototypes and end-use parts in non-critical space applications.



- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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PRUSA RESEARCH by JOSEF PRUSA

RHEA System CZ s.r.o.

General Description
RHEA System CZ is part of RHEA Group, a professional engineering and solutions company, offering system development, security and engineering services for space, government, defence and other critical infrastructure organizations across Europe and Canada. Over the past 30 years, RHEA Group has supported over 120 satellite missions, including CubeSats, SmallSats, complex science spacecraft, Earth observation and communication satellites, and multi-satellite constellations. Our clients in the space sector include ESA, EUMETSAT, the European Commission, EUSPA and national space and defence agencies.

Competences & Capabilities
RHEA System CZ is mainly dedicated to supporting the European Union Agency for the Space Programme (EUSPA), providing a wide range of space, security and cybersecurity expertise. Its mission is to help improve the quality of the services rendered under existing European navigation programmes (Galileo, EGNOS) and support the integration of GOVSATCOM, space situational awareness (SSA) and Copernicus into the EUSPA remit.
RHEA is ISO 9001 and ISO 27001 certified.

Products & Services
- System Engineering: RHEA's heritage lies in space systems engineering. We provide our clients with the best engineers, unrivalled expertise and the unique capabilities required for complex space programmes and missions, from ground segment operations to space security systems.
- ASTRAL: is a component-based satellite ground segment offering, allowing a high degree of flexibility for customers to integrate their own or third-party components, and interface to other systems. it supports small missions and constellations, reducing ground segment and operations costs through end-to-end automation of ground segment elements as well as spacecraft. ASTRAL builds on RHEA's long-standing operational heritage in ground segment development, mission automation and operations preparation.
- CDP4-COMET: RHEA is a pioneer in the implementation of concurrent design and the development of platforms to support it. Our concurrent design services include setup, training, hands-on support and audits. Using our unique, standards-based, open source CDP4-COMET software, teams can interact and share engineering models, designs, data and documents in near real-time.
- CITEF: RHEA's Next Generation Cyber-Range Services are based on its leading-edge CITEF assets emulation and automation platform. CITEF has been developed by RHEA to deliver an advanced, state-of-the-art cyber-range capability equipped to support the demanding needs of cybersecurity for space assets and other critical infrastructures.

Customers
- European Union Agency for the Space Programmes (EUSPA)
- European Space Agency
- European Commission

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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RHEA GROUP

Rigaku Innovative Technologies Europe, s.r.o.

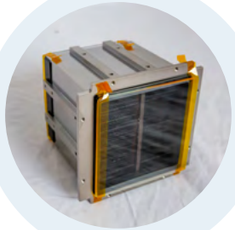
General Description
Rigaku Innovative Technologies Europe s.r.o. (RITE) belongs to the Rigaku Corporation group (Tokyo, Japan). RITE is European center of excellence for the design, development and manufacturing of X-ray optics, X-ray detectors and X-ray sources, as well as other related scientific products for industry and research.

Competences & Capabilities
RITE expertise and experience focuses on various optical technologies (especially replicated and Multi-Foil X-ray Optics), X-ray detectors and X-ray sources. RITE and its specialists can, due their long experience, test facilities and measurement devices, offer consultations and expertise in these fields.

Products & Services
- X-ray optics (Lobster Eye, Kirkpatrick-Baez system, ellipsoidal, parabolic and Wolter I optics)
- X-ray detectors

Major Space Projects & References
- VZLUSAT2 mission - X-ray optical payload equipped with Rigaku X-ray Optics and miniaturized TimePix detector with CdTe sensor (www.vzlusat2.cz).
- VZLUSAT1 mission - Experimental verification of space products and technologies on nanosatellite (www.vzlusat1.cz).
- Wide X-ray System for X-ray imaging with detector Timepix – rocket experiments (assembled at Penn State University), co-operation with CTU.
- Space radiation capabilities, technologies, and platforms for small spacecraft and CubeSats (SR-CTP) - the second-generation Czech CubeSat was built at the QEM level which includes radiation composite shielding, X-ray optics telescope coupled to a pixel detector Timepix as X-ray focal plane detector, and outgassing sensors.
- Novel X-ray Optics Technologies for ESA X-ray Astrophysics Missions – ESA PECS Applications of Kirkpatrick Baez Imaging Systems in Space – co-operation with Colorado, Iowa University and CTU.

Space Related Equipment, Labs & Certificates
- AFM, SEM, 3D laser confocal microscope and White Light Interferometer (WLI)
- Contact profilometer
- Software for design and raytracing of X-ray optics for space and laboratory applications
- X-ray optical test bench
- X-ray optical vacuum test bench



- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

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S.A.B. Aerospace s.r.o.

General Description
S.A.B. Aerospace s.r.o. is a SME located in Brno, Czech Republic, operating since 2014, one of the most experienced Czech space companies. Its main focus is development of mechanical structures for dispensers, satellites and launchers components. SAB Aerospace holding also includes branches in Italy, Poland, Slovakia and Romania.

Competences & Capabilities
S.A.B. Aerospace is an ESA registered supplier, also has been audited to deliver with the major players such as Thales, and Ariane Group. The core business is design of mechanical structures and thermal control systems for satellites and launchers as well as development of microgravity facilities.
SAB has been developing a network of verified subcontractors and suppliers from the Czech Republic and other European countries, including hardware and software providers.

Products & Services
- PROJECT OFFICE (PM, SE, PA, QA, Procurement)
- ENGINEERING (Mechanical, Structural, Thermal, Electronic, MA, System, GNS)
- ASSEMBLY/INTEGRATION AND QUALIFICATION
- LAUNCH SERVICES

Major Space Projects & References
- **ROSE-L** – Copernicus radar satellite for Earth Observation. SAB is responsible for the design of the satellite structure and Thermal Control System TCS, procurement and MAIT.
- **VEGA SSMS Dispenser** – A launcher structure enabling a launch of multiple small satellites on board of VEGA flight. Recurring project.
- **IOSHEX** – In-Orbit Servicing HEXSystem based on the SSMS structure. SAB is a prime contractor.
- **IOSLAB** – In-Orbit Servicing LABoratory - multi-purpose space laboratory designed for a wide range of experiments.
- **PLATO** – Scientific mission PLATO is a M-class mission, which will search for exoplanets. SAB is responsible for design and procurement of the service module (SVM) structure.
- **ARIANE 6 Sequencer -** Development of the sequencer for multiple launch services on board Ariane 6.
- **SLAVIA** – Scientific project related to the space resources prospection.
- **LCS4** – Development of the low cost separation system for small satellites.

Space Related Equipment, Labs & Certificates
- Clean room ISO 8
- Clean room ISO 9
- ISO 9001:2025 recertified
- Audited by ESA, Thales, Ariane Group

- INDUSTRY
- SERVICES
- R & D
- TESTING

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61600 Brno
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Responsible for space and ESA projects:
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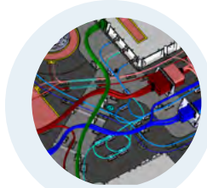
SAZ Aerospace s.r.o.

General Description
SAZ Aerospace s.r.o was found as an Aircraft Design Company which continues a long tradition of Aerospace Industry in the South Eastern Czech Region and connecting with The SA Group´s headquarter in Denmark and many branches World wide. Nowadays the company expands its capabilities in the space industry.

Competences & Capabilities
SAZ Aerospace s.r.o is mainly concentrated on Design and Development of Satellite subsystems and Aircrafts, offering Engineering Services in the Field of installation of Avionics and Electronic Systems, Airframe Design/Modification including Strength Analysis and other Analysis related to completion of Certification Documentation.

Products & Services
Electronic systems Design and Installation
- cockpit layouts,
- wiring diagrams,
- harness routing,
- harness topology and production drawings
- load Analysis

Certification and Field Support
- certification ground test methodology
- certification Flight test methodology
- system safety assessment
- functional hazard assessment
- certification documentation
- HIRF and Lightning analysis



Airframe and Mechanical System Design
- airframe
- aircraft component
- aircraft systems
- interior panels
- interior equipment
- composite structures
- parts, assemblies and drawings

Analyses and Computing
- strength
- fatigue
- dynamic (modal, vibration)
- thermal
- external and internal aerodynamics CFD

Production Management and Support
- jigs and tools design
- installation and testing instructions
- production ensuring

Major Space Projects & References
- ROSE-L – harness design and installation including all relevant analysis
- SPECTRUM – Interface Stage Jig and Hoisting Jig design, production management and testing
- SCOUT – cryogenic tank demonstrator production management

Space Related Equipment, Labs & Certificates
- Certificates: AS9100D

● INDUSTRY
⟋ MANUFACTURING
▲ R & D
ᵀ TESTING

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SAZ Aerospace s.r.o.

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Responsible for space and ESA projects:

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Serco Czech Republic

General Description
Serco Czech Republic is a Czech company belonging to Serco Group, the public services expert employing more than 50,0000 people specialising in the delivery of essential public services and managing over 500 contracts worldwide. In Czech Republic, Serco operates since 2020 with space being the core business.

Competences & Capabilities
Serco's teams of engineers, consultants and operations specialists support a wide range of space and ground activities: from data archiving and exploitation, data processing; to systems design, operation and maintenance; data production quality control; and the scientific and technical support for EO satellite data exploitation projects. In addition, as part of our user-facing functions, we provide specialised EO Helpdesk and Service desk.

Beyond Serco Czech Republic, our European Space portfolio offers programme management and end-to-end service delivery across a wide range of activities in the Space domain, from developing, launching and operating satellites, to processing data and developing applications. Alongside satellite operations, Serco is a key actor in the domain of Earth Observation data, implementing and operating one of the largest data dissemination services worldwide, providing complete, free and open access to Copernicus Sentinel data, enabling more than 350,000 users to utilise data to meet their needs.

Products & Services
- Operational services and engineering support to satellite missions
- Real time and ground segment operations
- Software and system engineering,
- Data processing and dissemination
- User and IT support services

Major Space Projects & References
Our employees play an important role in supporting prestigious European programmes, such as the EGNSS and EU Copernicus programmes, where Serco Czech Republic provides key services for EUSPA to ensure the Market Uptake of EU Space Data and provides Operations and Evolution of Data Access and User Support Services to the European Space Agency as part of a Serco-led consortium.

● INDUSTRY
■ SOFTWARE
× SERVICES

Contacts:

Serco Czech Republic

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SERENUM, a.s.

General Description
Serenum Space is a CubeSat component and BUS manufacturer, integrator, and service provider based in the Czech Republic. We are a commercially oriented subsidiary of VZLU AEROSPACE, giving us the benefit of years of research in Space and Aviation industries and allowing us to bring premium value to academic, government, and commercial customers.

Products
- CubeSat platforms
- Cubesat Components and Subsystems:
- VAC02 ADCS for CubeSats (1-3U)
- EVA ADCS for CubeSats (6-16U)
- ZHP Payload Computer
- Reaction Wheels
- Sun Sensors
- Structures
- Flight software
- MGSE and EGSE

Services
- Satellite qualification and acceptance testing
- Satellite as a service
- Custom space hardware and software development
- Consultation services

Major Space Projects & References
- Took part in and delivered subsystems for major space projects such as Proba 3 and SWARM
- Wide variety of test campaigns
- Delivered flight subsystems for multiple CubeSat missions

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

SERENUM, a.s.

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Responsible for space and ESA projects:

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www.serenumspace.com

SPACEKNOW

General Description
SpaceKnow provides global geospatial intelligence by combining AI analytics with the largest collection of Earth observation imagery. Our mission is to build a virtual encyclopedia of the physical world, offering actionable intelligence to businesses, governments, and the planet through the integration of satellite imagery, advanced statistics, machine learning, and industry knowledge. We are pioneers in using space-based data to nowcast global economic and business trends, supporting decision-making worldwide.

Competences & Capabilities
SpaceKnow offers intelligence and analytics as a service: a fully automated and scalable cloud solution for any area of interest for a variety of applications:
- Defence & Intelligence
- Industrial Sites & Construction Monitoring Services
- Environment & ESG Monitoring Services
- Economic Nowcasting Services
- Geospatial intelligence
- Third-party data integration and matching (AIS, clients georeferenced data, cell phone data etc.)

Major Space Projects & References
- Leading financial, industrial, and defense organizations rely on SpaceKnow's services worldwide.
- Multiple successful projects with ESA, World Bank and other elite institutions

Space Related Equipment, Labs & Certificates
SpaceKnow provides actionable intelligence to customers through advanced software and hardware technologies, along with expert researchers and data scientists. Our software employs the latest Machine Learning & Artificial Intelligence advancements. Furthermore, our close partnerships with satellite operators guarantee easy and superior imagery access.

Products & Services
- SpaceKnow Guardian platform (SaaS) for self-service satellite imagery analysis, and automatic continuous monitoring
- On-demand custom geospatial monitoring projects
  - Automatic object detection and classification
  - Dark ships detection and monitoring (matching EO detection with AIS data)
  - Automatic change detection and activity hotspots
  - Semantic segmentation
  - Estimation of economic trends and design of economic indices

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

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SpaceLab EU, SE

General Description
SpaceLab EU is a research and engineering company specializing in advanced plasma propulsion systems designed to unlock access to very low Earth orbit (VLEO). Headquartered in Brno, the company operates with a lean, interdisciplinary structure and maintains strong partnerships across Europe.

Competences & Capabilities
Operating satellites in VLEO (approximately 150–400 km altitude) offers compelling advantages for Earth observation, remote sensing, telecommunications, and defense. This orbital regime enables higher-resolution imaging, lower latency, and stronger signal strength due to proximity to Earth. However, these benefits come at the cost of significantly higher atmospheric drag, which traditionally requires large amounts of on-board propellant to sustain mission lifetimes.
To address this challenge, SpaceLab EU is developing an experimental Air-Breathing Electric Propulsion (ABEP) system that utilizes residual atmospheric particles as propellant, effectively eliminating the need for stored fuel. This innovative approach enables continuous station-keeping in VLEO while dramatically extending operational lifetimes. By combining deep academic expertise with practical know-how in plasma physics, electromagnetic systems, mission analysis, and commercial strategy, the team is pioneering sustainable access to low orbital altitudes.
In addition to performance benefits, VLEO missions inherently offer natural orbital decay at end-of-life, facilitating passive deorbiting and reducing the risk of long-term space debris - a crucial step toward safer and more sustainable space operations.

Major Space Projects & References
Scalable ionizer for space technologies and laboratory applications
- ID: FW06010622
- 2023 – 2025
- in collaboration with PlasmaSolve s.r.o. and Brno University of Technology
- Provided by Technology Agency of the Czech Republic

● INDUSTRY
▲ R & D
ᵀ TESTING

Contacts:

SpaceLab EU, SE

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Responsible for space and ESA projects:

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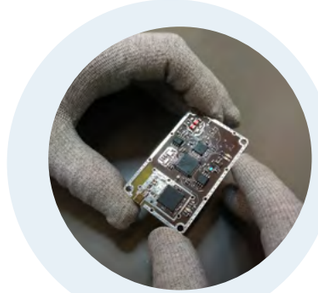
SPACEMANIC CZ, s.r.o.

General Description
Spacemanic is a turnkey nanosatellite mission provider focused on delivering flight-proven CubeSat platforms based in Brno, Czech Republic. The plug&play methodology accelerates mission deployment, enabling broader access to space for scientific, tech, or private customers, and is ideal for diverse applications including rapid-response solutions for the defense sector, or technological IOD/IOV missions.

Competences & Capabilities
Our mission is to democratize access to space by offering cost-effective, flexible, and agile satellite solutions tailored to various knowledge levels and budgets. Spacemanic's proprietary, in-house developed line of nanosatellite and small satellite subsystems encompasses a comprehensive range of critical components, including onboard computers, navigational units, transceivers, antenna subsystems, power supply units, structures, and solar panels, with each subsystem boasting extensive flight heritage.
Spacemanic's track record speaks to our commitment to excellence and our ability to deliver reliable, high-performance satellite platforms tailored to meet the diverse needs of our clients. From concept to deployment, Spacemanic provides end-to-end support, guiding clients through every stage of the satellite lifecycle with precision, while getting customers' payloads to space, as easily as never before.

Products & Services
- Full portfolio of plug-and-play nanosatellite components including:
- Celeste - GNSS receiver
- Eddie and Deep Thought - On-board computers
- Murgas – UHF/VHF transceiver
- Amun – Power supply unit for 1-3U CubeSats
- Ra – Solar panels Cubesat structures
- Full nanosatellite platforms for dedicated or rideshare missions
- Launch campaign management
- Ground solutions, and much more...

Major Space Projects & References
Nanosatellite missions:
- skCube
- GRBAlpha
- VZLUSAT-2,
- BDSat-1,
- Planetum-1
- BDSat-2
- Veronika
- GRBBeta
- CroCube
- LasarSat
- Upcoming: BRNOSat, CORVUS



● INDUSTRY
⟋ MANUFACTURING
■ SOFTWARE
× SERVICES
▲ R & D

Contacts:

Spacemanic CZ s.r.o.

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Responsible for space and ESA projects:

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www.spacemanic.com

Stellar Exploration s.r.o.

General Description
Stellar Exploration s.r.o., founded in 2021, is the European affiliate of Stellar Exploration Inc., a U.S. company with over 20 years of experience in spacecraft propulsion and power systems for CubeSats and Small Satellites. Since its foundation, Stellar Exploration s.r.o. has been supported by the extensive know-how and experience of the U.S. team. The company has established itself as a key player in the space industry, focusing on the development of power subsystems, specifically battery modules and assemblies. Stellar Exploration s.r.o. has engaged in both commercial space projects and institutional space projects for ESA, building a strong heritage in diverse space missions.

Competences & Capabilities
Stellar Exploration s.r.o. excels in developing advanced power subsystems, with battery modules and their assemblies being a major area of expertise. Additionally, the company has developed specialized antennas and associated RF electronics for spacecraft. Stellar Exploration s.r.o has also undertaken significant development activities in satellite chemical propulsion, demonstrating its versatility and technical proficiency. Backed by the experience and support of its U.S. counterpart, Stellar Exploration s.r.o. combines innovative approaches with proven expertise.

Products & Services
- Modular Battery Systems with one of the best power densities on the market
- PCDUs
- Deployable omnidirectional monopole antennas
- Deployable high-gain helical antennas
- Propulsion (Monoprop/Biprop/Warmgas)

Major Space Projects & References
- 3rd Generation SAR satellites by ICEYE - 2 battery units, 1.4 kWh each, launched on Transporter-8 in 2023
- Aries Spacecraft by Apex - 2 battery units, 2.4kWh each, launched on Transporter-10 in early 2024
- SIGI mission by Reflex - 2 battery units, 400 Wh each, will be launched on Transporter-13 in late 2024
- UKKO mission by ReOrbit - 2 battery units, 250 Wh each, will be launched Q2 2025
- MSO by MSSS - 2 battery units, 400 Wh each

Facilities
- Fully equipped electrical laboratory
- Prototyping mechanical laboratory
- ISO 5 clean tent
- Vacuum chamber

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

Stellar Exploration s.r.o.

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Stellar Nuclear s.r.o.

General Description
Stellar Nuclear is designing and deploying nuclear energy powered systems for space applications based on advanced materials. At the forefront of innovation, we are dedicated to advancing the boundaries of space travel and exploration. Our commitment to developing cutting-edge radioisotope power and nuclear propulsion systems is fueled by a vision to empower the European Space Agency and the global community to reach beyond the stars, sustainably and safely.

Competences & Capabilities
At Stellar Nuclear we offer a comprehensive suite of services and expertise in advanced space nuclear systems for space transportation covering both Nuclear Electric Propulsion (NEP) and Nuclear Thermal Propulsion (NTP) systems suited for space transportation, deep space exploration and serving as in-space economy major enabler. Our capabilities extend to Radioisotope Power Systems (RPS) providing electric power and heat not only to deep space probes and landers, but also suitable for planetary outposts. Our Technology Research and Development Team is eager to explore and push the boundaries of innovation in space nuclear technologies by developing the only commercial RPS systems in Europe.
We always emphasize the importance of Nuclear Safety, ensuring rigorous safety protocols for all systems. Our team excels in Nuclear Systems Design and Feasibility Analysis, offering in-depth assessments of system viability, as well as TID (Total Ionizing Dose) Analysis and PRA (Probabilistic Risk Assessment) to ensure operational safety and reliability.

Products & Services
- Technology research and development
- Material design, prototyping and qualification
- Case studies
- Nuclear systems design and analysis
- Radioisotope power sources design and analysis
- Nuclear safety evaluation
- TID analysis, PRA analysis

Major Space Projects & References
- Dark Fission cooperation (US commercial nuclear space application)
- Advanced Cladding Solutions of Radioisotope Power Systems (in cooperation with Framatome)

- INDUSTRY
- SERVICES
- R & D
- TESTING

Contacts:

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STRATOSYST s.r.o.

General Description
Stratosyst is a system integrator predominantly active in High-Altitude Pseudo-Satellites (HAPS) development. The company aims to bring to market stratospheric airship for Earth observation and telecommunications. Designed to carry the maximum payload mass of 30kg, geostationary position keeping capability, as well as easy global transportation and operation, the platform will be able to service wide variety of users bridging the digital divide, enhancing public safety, providing long-term detailed surface data acquisition and monitoring, or enabling science.
Furthermore, Stratosyst is also active in developing optical systems for HAPS, currently offering a geospatial mapping imager with resolution up to 7cm, and in other collaborative R&D projects in the stratospheric flight domain.

Competences & Capabilities
Stratosyst is a DOA certified provider of engineering solutions for flight and payload applications in stratosphere & harsh environments (low temperature, low pressure, UV radiation).
The company also offers a range of consultancy and flight services, including stratosphere testing for satellite payload verification, component qualification, or scientific experiments. Every customer is provided with tailored solution based on their requirements for payload mass, mission duration, altitude, and power consumption.

Products & Services
- ZPB and SPB balloons for stratospheric flights
- Design of systems for harsh environment
- Gondolas for testing and science
- Optical payload and stabilization
- Propulsion system
- HAPS Service

Major Space Projects & References
- National Competence Centre for Aeronautics and Space
- Frontex HAPS Study
- EuroHAPS, EDF
- SkyRider HAPS, ESA InCubed

● INDUSTRY
× SERVICES
▲ R & D
ᵀ TESTING

Contacts:

STRATOSYST s.r.o.
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LinkedIn

www.stratosyst.com

STRATOSYST

STREICHER, spol. s r.o. Plzeň

General Description
We focus on the custom development and production of vacuum equipment and systems serving internationally renowned scientific and research institutions, as well as applications in the space and semiconductor industries. With more than 30 years of experience, we offer expertise and reliability as part of the multinational STREICHER Group, headquartered in Deggendorf (GE).

Competences & Capabilities
We develop solutions precisely tailored to our clients' needs, covering the entire process from initial development to final on-site assembly. Our high-precision in-house manufacturing is followed by cleaning, assembly, commissioning, and packaging under cleanroom conditions up to ISO 5, ensuring the highest cleanliness standards even for systems up to 50 tons. Our modular thermal simulation vacuum chamber system, S-CUBE TVAC, is specifically designed to simulate outer space and varying thermal conditions under vacuum levels up to 1×10^{-7}mbar.

Products & Services
- Design & development of vacuum systems
- Inhouse manufacturing up to 50 t
- Electrical measurement and control technology
- Assembly & testing up to ISO 5
- On-site installation & service

Major Space Projects & References
- ESA (NL) – thermal vacuum chamber (TVAC) for space environment simulation
- operating from -186°C to +200°C
- Space-Lock (AU) – S-CUBE TVAC operating from -196°C to +150°C
- 5M (CZ) – TVAC operating from -80°C to +150°C under an ultimate vacuum of up to 1x10-6 mbar
- Norsk Elektro Optikk (NOR) – TVAC with decoupled optical tabel and operating from -60°C to +140°C

● INDUSTRY
⟋ MANUFACTURING
× SERVICES
▲ R & D
ᵀ TESTING

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STREICHER

Strojcar

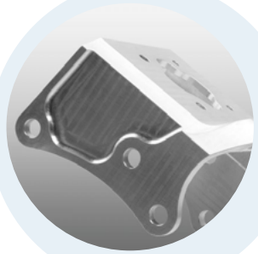
General Description
Design and rapid prototyping, machining and production of precision metal parts on CNC milling machines for use in the aircraft, space, automotive and rail industries. Contract Manufacturing of mechatronic systems.

Competences & Capabilities
Rapid prototyping, 3D Print of prototype parts, machining and production of precision metal parts on 5-axis CNC milling machines, turning, grinding, assembly.
Design of mechatronic systems, jigs, mechanic parts and electronics, metal components, state-of-art design software SolidWorks, ZW3D CAD, PowerMill simulations.
3D positioning control machines, maximum dimensions of the part 700 x 1000 x 500 mm, communication with PowerInspect, FAI protocols.
Contract Manufacturing, Assembly services.

Products & Services
- Design and development of product prototypes
- Designd and manufacturing of antinoise aluminium panels,
- Delivery of mechanisms for solar panels and integrated antinoise panels with FVE
- Precision CNC machining – delivery of fine components for satellites, launchers and aircrafts
- 3D print of plastic, metal and composite parts

Major Space Projects & References
Core references at Latecoére, Sonaca, AERO Vodochody Aerospace, LOM Praha, LOTN Slovakia, SAAB, SAB Aerospace and more.

Space Related Equipment, Labs & Certificates
- Roughness testing on TP-200
- SIGMA TEST for Aerospace
- Simulations of mechanics at the National Supercomputing Center
- Certified on AS9100D by NQA UK Ltd.
- Certified on ISO9001 by NQA UK Ltd.



● INDUSTRY
⟋ MANUFACTURING
▲ R & D
ᵀ TESTING

Contacts:

Strojcar

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Responsible for space and ESA projects:

Libor Witassek; CEO

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SYNPO, a. s.

General Description
General Description SYNPO is a research and manufacturing company focused on development and smallscale production of polymers and related materials and accredited laboratories for testing of accelerated corrosion and outdoor resistence, as well testing of physical and mechanical properties and analytical services including defect analysis. SYNPO closely collaborates with companies in the Czech Republic, EU, and worlwide. Synpo complies with ISO 9001:2015.

Competences & Capabilities
The research and development areas of the company includes:
- Synthesis of epoxy, alkyds, polyesters, and polyurethanes resins
- Formulation of novel types of paints, composites, and adhesives
- Development of nanostructured polymers and composites
- Synthesis of emulsion and solution polymers and acrylic dispersions
- Synthesis of polymers from biobased raw materials
- Targeted modification of nanoparticles

SYNPO has experience in technology transfer, from laboratory through pilot plant to manufacturing.

Products & Services
Products of interest to the aerospace industry:
- Paints and coatings
- Composite materials
- Laminating resins
- Casting and sealing compounds
- Adhesives, sealants, and putties
- Functional resins for 3D printing
- Thermal protection systems
- Materials for cryogenic applications
- Antistatic and conductive composites
- Antimicrobial coatings
- High-temperature resistant
- Coatings with high abrasion resistance

Major Space Projects & References
Projects supported by ESA
- Development of coating for the rocket propellant tank
- Polymer materials based on epoxy filled foam
- Carbon Nanotube Composites

Space Related Equipment, Labs & Certificates
Testing Laboratory of Analytical and Physical Chemistry, Testing Laboratory of Evaluation and Testing, Calibration Laboratory of Viscometry are accredited by the Czech Accreditation Institute, according to ČSN EN ISO / IEC 17025.

● INDUSTRY
⟋ MANUFACTURING
▲ R & D
ᵀ TESTING

Contacts:

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Terma Technologies Czech Republic s.r.o.

General Description
Our portfolio is designed to support spacecraft throughout their lifecycle, delivering unparalleled value and ensuring the success of missions by meeting their specific needs. While our main focus in the Czech Republic remains the Ground Support area (EGSE), we are able to also provide solutions from Terma's global portfolio such as the CCS5 Central-Checkout system and the broader Terma Ground Segment Software Suite including simulators, or Terma star-trackers, spacecraft power distribution units or other space electronics systems.

Competences & Capabilities
Our products and services are crucial across all stages of space program development, trusted worldwide by ESA, NASA, OHB, Thales, Airbus, etc. We offer solutions for space science, earth observation, navigation, and telecommunication projects. Notably, our expertise isn't limited to supporting long-duration missions; we also provide unparalleled support for spacecraft on shorter missions, including specialized solutions for nano- and microsatellite projects.

Products & Services
- Electrical Ground Support Equipment (EGSE), incl. RF SCOE, Power SCOE, and Payload &Instrument EGSE
- Remote Terminal Units (RTU)
- Power Conditioning and Distribution Units (PCDU)
- Star Tracker, plus Computer Board (separate or embedded)
- Critical On-board Flight Software
- CCS5 (Mission Control System)
- ORBIT (Flight Dynamics System)
- TRACK (Advanced Mission Visualization)
- PLAN (Mission Planning System)
- STAT (Mission Data Analysis)
- Core Checkout systems
- Mission Control System & Ground Station Software Development

Major Space Projects & References
In the past we have delivered projects such as:
- ESA/ESOC: Ground Support / MCS Software
- EGSE systems, e.g. Power SCOEs for EUCLID and NEO-Sat, HERA, Comet-Interceptor.
- Thermal SCOE, e.g. CHIME
- Specialized SCOEs: Ultra-Stable-Oscillator SCOE for Galileo 2nd Generation, Navigation Module Test SCOE for the VEGA-C launcher, ICU SCOE for CHIME
- Mission Control System & Ground Station Software: Euclid, Juice, OneWeb, SARah, and OptSat
- PCDU: Galileo, BebiColombo, Euclid

Among our customers we can count e.g.:
Thales Alenia Space, OHB, Airbus, ESA/ESOC

Space Related Equipment, Labs & Certificates
- Terma globally is certified to AS9100.

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

Terma Technologies Czech Republic s.r.o.
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Czech Republic

Responsible for space and ESA projects:

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Member of the Czech Space Alliance

www.terma.com

TOSEDA s.r.o.

General Description
TOSEDA s.r.o. is an SME providing contract research and development, testing services and small-scale production in the field of polymer chemistry and nanotechnologies. The mission is to fill the gap on the market with specialties that are commercially unavailable or produced out of the EU region.

Competences & Capabilities
- Custom design, development, and commercialization of hi-tech polymeric and nanocomposite materials (composites, adhesives, elastomers, coatings, foams, aerogels, sensors etc.)
- Registration at ESA (2012)
- Member of the Czech Space Alliance (2013)

Products & Services
- 4SPACE TOSEDA® Pads and pastes with extremely high thermal conductivity (electrically conductive and non-conductive versions)
- Nanohybrid transparent polyimide foils for thermo-optical applications (stability at 350 °C / 500 °C)
- Multifunctional „black" primer for thermo-optical applications
- One component epoxy adhesive (storability ≥ 1 year, curing ≥ 120 °C)
- Expandable adhesive curable at low temperature (≥ 70 °C)
- Barrier coatings and composites with improved resistance against liquid gasses (LH2...)
- Resins with extended pot life for out-of-autoclave manufacturing CFRP parts
- "Green" conformal coatings and potting materials for electronics
- Cryogenic insulation (foams, aerogels)

Major Space Projects & References
- Development of epoxy based syntactic foam encapsulant (2013-2016)
- Design of inner wetted thermal system for LH2 metallic tank (2014-2016)
- Thermal joint development for NEOSAT - Phase C (2017-2022)
- Extended pot life resins for out of autoclave processing for large and complex part (2017-2021)
- Electrically conductive "black" primer - CCN1: Extension for optical applications (2017-2022)
- Development of "green" polyurethane materials for use in spacecraft and launcher applications - CCN1: Extension towards applications as conformal coatings and potting material (2017-2022)
- Transparent polyimide films for thermo-optical applications (2020-2023)
- European resin for high voltage and high temperature space applications (2022-2024)

Space Related Equipment, Labs & Certificates
- Outgassing (ECSS-Q-ST-70-02)
- ATOX (simplified method)
- UV irradiation
- AFM, SEM, optical microscopy, DMA, DSC, TGA, rheology, thermal and thermo-mechanical properties, FTIR, NMR

- INDUSTRY
- MANUFACTURING
- R & D
- TESTING

Contacts:

TOSEDA s.r.o.

U Panasonicu 376
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Czech Republic

Responsible for space and ESA projects:

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TRL Space Systems s.r.o.

General Description
We are a mission integrator, covering the entire project cycle and adding value for customers by combining heritage technologies with new products.

Competences & Capabilities
Our team has more than a decade of experience working on many large space projects and missions in the space industry (VEGA and PLATO structures, Sentinel, Galileo, BepiColombo, Juice or Solar Orbiter, or ISS experiments).
Since 2022 we are building hyperspectral and high-resolution EO missions. We are designing constellations to deliver both EO and communication solutions. We are working on three Lunar Orbiter missions for ESA.
We can partner on Mission Analysis, Project management, System engineering, Mechanical design, Structural and Thermal verification, MGSE, EGSE, Qualification, Testing, Launch, and Operations.

Products & Services
- **Customized Mission Development** - Full development or co-engineering activities for satellites up to 150 kg.
- **TRAP** - Sub-meter EO microsatellite.
- **TROLL** - Hyperspectral nanosatellite.
- **High-Resolution Hyperspectral Data** - Earth Observation data from our satellite for different use cases, including analytics.
- **CAVE** - 6U, 8U, 12U and 16U deplyoers

Major Space Projects & References
- **TROLL** - Czech demonstration satellite providing high-resolution hyperspectral sensing.
- **LUGO, LUMI, LUREPOS** - Lunar mission feasibility studies led by TRL Space
- **EnVision** - Development of electronics for VenSpec-H instrument

Space Related Equipment, Labs & Certificates
Clean Room (ISO 8, ISO 5)
- 35m2 ISO 8 Clean room with ISO5 Flowbox
- Space Lab for Electronics
- Shaker and TVAC in ISO8

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

TRL Space Systems s.r.o.

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Responsible for space and ESA projects:

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TRL SPACE

TTS, s.r.o.

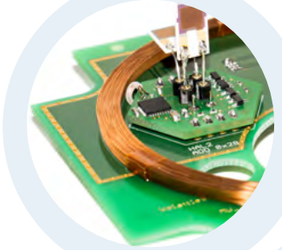
General Description
TTS (Thin Film Technological Service) is a small Czech company providing service in the field of thin film deposition by PVD technologies and in the field of radiation analysis for space applications.

Competences & Capabilities
TTS specialises in custom-made thin films for electronic and optical applications, thin film metallization and production of thin film components. It has more than 50 years of experience in design, development and production of thin films for which it uses the technology of magnetron sputtering, ion beam etching and UV photolithography.
Its space related activities have focused on the development of coatings for the enhancement of properties of composite materials and on the use of trace moisture sensors in space. Some of its products (HAL2 moisture sensors and coatings) have recently been experimentally verified on board of VZLUSAT-1 nanosatellite.

Products & Services
- Thin film technologies – deposition and patterning of wide range of thin films
- Moisture sensors – comprehensive solutions for trace moisture detection
- Radiation analysis – computer simulations of the effects of space radiation

Major Space Projects & References
- Design and Testing of Far and Medium Ultraviolet Coatings (2020 - 2023); Prime contractor: TTS, s.r.o.; funded by ESA
- Space radiation capabilities, technologies and platforms for small spacecraft and CubeSats (2018 - 2022); Prime contractor: Rigaku Innovative Technologies Europe s.r.o.; funded by ESA
- Qualification of Shielding Applied to Structural Panel for JUICE (2014 – 2016); Prime contractor: 5M s.r.o.; funded by ESA
- Experimental verification of space products and technologies on nanosatellite VZLUSAT-1 (2013 - 2017); Principal Investigator: Czech Aerospace Research Centre, a.s.; Funded by Technology Agency of the Czech Republic

Space Related Equipment, Labs & Certificates
- PVD – 4 sputtering and ion beam devices
- Photolithography and wet processes
- Metrology – characterisation of thin films and calibration of moisture sensors
- Electronics laboratory
- Workplace of computer simulations for radiation analysis
- ISO 9001:2015 certificate



- INDUSTRY
- MANUFACTURING
- SERVICES
- R & D

Contacts:
TTS, s.r.o.
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142 00 Praha 4
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P +420 239 042 545
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Responsible for space and ESA projects:
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Entity Code: 1000015113
Member of the Czech Space Alliance

www.tts-co.eu

Thin Film Technological Service

Uneeqly s. r. o.

General Description

Uneeqly digitised loyalty systems for everyone.
Uneeqly is a platform that offers digitised loyalty systems for SMEs, regions, destination agencies, etc., giving them the opportunity to quickly implement their own digital loyalty programme, regional card or gamification card in minutes with a significantly lower investment than other alternatives.

Competences & Capabilities

Thanks to Uneeqly platform, businesses, regions, tourism organisations, in short, anyone who wants more customers and to effectively build a relationship with them directly, without additional hidden costs, will benefit from Uneeqly. We deliver promotions or messages to customers' mobile phones.
www.uneeqly.com/podnikatele/

Simply register your business using the web interface and post, for example, a special offer, an announcement or just a loyalty program. The offers are then immediately visible to all Uneeqly users who are in the area and looking for similar services. Users then don't have to provide any personal information to take advantage of the offers. The Uneeqly platform allows users to load loyalty points completely independently by verifying their exact location and time, which prevents attempts to abuse the system and reduces the demands of serving businesses or tourist destinations.

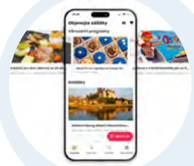
The biggest advantage of the app is the synergy effect - regions can easily promote the app to tourists and locals, making it attractive for businesses to promote their services there. Another advantage is the low cost of setting up and running the service, making it sustainable in the long term even with a small budget. The system is also sustainable in terms of environmental burden and human resource requirements, as it does not require special knowledge for its set-up and ongoing maintenance.

Products & Services

- Digitisation of the loyalty and tourists card
- Interaction of SMEs with tourists
- Loyalty system within the framework of the regional and tourists card
- Linking cultural and historical heritage with tourismSMEs, gamification
- of points collection
- Blockchain
- Uneeqly as a digitize platform is using data provided by mobile phone GNSS chip – all currently sold mobile phone already include GNSS chip with Galileo support including Egnos service.

Major Space Projects & References

- **Succes feasibility study – EUROREGIONAL TOURIST – with ESA business application program**
- **Czech space card** – guide to famous places in the Czech Republic with space themes and experiences



● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D

Contacts:

Uneeqly s. r. o.

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101 00 Praha - Vinohrady
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UNEX a.s.

General Description

Metallurgical and engineering group UNEX is a world-known manufacturer and an experienced supplier of heavy engineering components and a long-term partner of numerous multinational industrial corporations. The experience and expertise of the people; together with modern technologies, robotised and automated workplaces, a number of heavy machine tools and extensive production facilities enable to efficiently produce high quality products for various industries according to drawings and requirements of the most demanding customers.

Competences & Capabilities

- Design and development work
- Castings production
- Die forgings
- Cutting and forming of materials
- Welding
- Machining
- Heat treatment
- Surface treatment and painting
- Quality control
- Servicing, completion and assembly

Products & Services

- Bucket wheel excavators and mining equipment
- Welded steel parts and structures up to 120 t in weight and 40 m in length
- Castings from 50 g up to 20 t
- Die forgings from 2 kg to 25 kg

Major Space Projects & References

- manufacture of 16 sets of undercarriages and coupling components which will form part of the mobile building of a new Ariane 6 rocket launch platform at the Guiana Space Centre

Space Related Equipment, Labs & Certificates

More than 40 Czech and international certificates and permits demonstrates the quality of our company and products e.g. ISO 9001:2015, ISO 14001:2015, ISO45001:2018, ISO 50001:2018, ...
In the welding industry, we are certified according to the ČSN and EN standards, but we also have experience with welding according to the AWS D1.1.

● INDUSTRY
⟋ MANUFACTURING
× SERVICES
T TESTING

Contacts:

UNEX a.s.

Brnicko 1032
783 91 Unicov
Czech Republic

Responsible for space and ESA projects:

Zdeněk Hurník

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www.unex.cz

UNITES Systems a.s.

General Description

UNITES Systems a.s. is a private company located in the Czech Republic with more than 30 years of experience in development and production of dedicated test and measurement systems – ATE solutions for semiconductor devices and FCT/ICT platform for assembled PCB testing (PCBA). Currently (July 2023), we have 80 employees.

Competences & Capabilities

UNITES has developed mixed-signal tester – UNIMET 2020 (formerly known as SZ M3000 or UNIMET 3000) which is widely used in Space sector for component qualification and characterization of semiconductors.

Products & Services

- Mixed-signal laboratory testers for component qualification / incoming inspection
- Production testers for discrete semiconductors (MOSFETs, IGBTs, Diodes, Power Modules)
- Testers for new semiconductor technologioes (GaN, SiC)

Major Space Projects & References

- Testers in EEE labs: Airbus, ESA, Boeing
- Testers in characterization labs: General Dynamics, ISRO, Dassault, Diehl, Thales

Space Related Equipment, Labs & Certificates

- ISO 9001
- UNIMET 2020 and M3000 testers, various DMMs like Keysight 34465A, PicoScope 6000 Series, Spectrum Analyzers, etc.

- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

UNITES Systems a.s.

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Entity Code: 1000001015

www.unites-systems.com

UNITES
Designed to test

UpVision s.r.o.

General Description

UpVision is one of the biggest drone operator in the Czech Republic founded in 2013. Main activities in the technical applications of the drones and using special sensors like multispectral, hyperspectral, thermal, LiDAR with focus on EO, GIS, BIM. Very active in the R&D and the future Unmanned Traffic Management (U-space).

Competences & Capabilities

UpVision provides various outputs based on the using drones mainly for technical application like aerial mapping, inspections and monitoring. Very active in the international research activities based on GNSS application including the development of drone deliveries services and Urban Air Mobility.

Focusing also on the integrated system for whole drone ecosystem consisting of Unmanned Traffic Management (UTM), Network ID, C-UAS system and future integration of ATM and UTM systems for supporting safety and advanced drone usage options. UpVision cooperate with many partners in the Europe on testing and validation drone activities and special safety features and to make the internal process of customers more effective like in power lines inspections or medical deliveries. Provides also various trainings and consultancy for risk asesement, drones flying, drone flight scenarios and Urban Air Mobility integration.

UpVision is a member of the European U-Space stakeholders network and co-founder of the UAV Alliance Czech Republic with several awards like from the Galileo Masters.

Products & Services

- Drone services - Photogrammetry, EO, GIS, CAD, BIM, Inspections, Monitoring, Mapping
- USSP - U-space service provider (Maia SW platform)
- R&D and practical testing and validation of drones applications
- Project management
- Training and consultations

Major Space Projects & References

- **ESA NAVISP - MEDuSA** Monitoring and Estimation of Drones' passage for augmented Security in critical Areas (2022 - 2024)
- **H2020 EUSPA - CERTIFLIGHT** Certified E-GNSS Remote Tracking of Drone and Aircraft FLIGHTs (2022 - 2025)
- **Galileo Masters** - between 10 best European GNSS applications - Protection of wild animals before crop harvest by GNSS enabled UAV (2017)

- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

UpVision s.r.o.

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Responsible for space and ESA projects:

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www.upvision.cz

UPVISION
SERVICES | DEFENCE

VZLU AEROSPACE – Czech Aerospace Research Centre

General Description
VZLU AEROSPACE is the Czech Aerospace Research Centre, focused on research, development, innovations, and testing for the space industry. We provide complex services and new space technologies for small satellites.

Competences & Capabilities
VZLU AEROSPACE focuses on research and development in the field of complete Space missions and Space technologies; its focus is on technologies applicable to the space segment of small satellites and the associated services and capabilities required for them. Capabilities include complete research, development, and production of composite materials for space and ground segments. VZLU AEROSPACE has also experience in static and fatigue testing of launchers.

Products & Services
- Turnkey Space Missions with Small Satellites for LEO
- Integration to Spacecraft – for various types of payloads
- Development of electronical systems and subsystems
- Software development
- Space qualification testing
- Ground Stations and Mission operation activities (S-Band, X-Band)

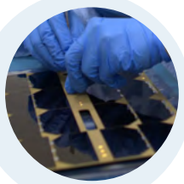
Major Space Projects & References
- SATurnin-1 – Earth observation mission
- QUVIK – Small Satellite mission for Astrological prospections with UV telescope
- AMBIC – Small Satellite EO mission for state users from the Czech Republic
- IOD nanosatellites missions VZLUSAT 1 and VZLUSAT 2
- VZLUGEM – Nanosatellite mission with proximity operations capabilities
- SWARM – design, and manufacturing of three micro-accelerometer units for 3 ESA EO satellites
- D3S – Nanosatellites for Space weather, cooperation on phases 0 and A
- PROBA 3 – supplied front door assembly for ASPIICS coronograph.
- FSA Flexible Solar Array

Space Related Equipment, Labs & Certificates
Certificates
- Quality assurance certificate ISO 9001:2015

Software tools
- CATIA, Autodesk Inventor, Nastran, Altair hyperworks, FEMAP, Ansys, Matlab, C, C++, PADS, KiCAD, Valispace

Clean rooms
- ISO 8 - 39.6 m2 (+ 140 m2 in 2025)
- ISO 6 - 33.1 m2

Equipment
- Thermal vacuum chamber (<10-3 Pa, 1 meter cubic, temperature from -120°C to +150°C)
- Vacuum tunnel (<10-3 Pa, 10m length)
- Shock Table (10000 gSRS)
- Shakers (max. weight of the specimen under test 350 kg, usable frequency range 1 - 3000 Hz, peak sine force 22.2 kN, max. RMS random force 22.2 kN, peak shock force 66.7 kN, max. velocity 2 ms-1, max acceleration 600 ms-2
- Ground station – UHF, S band, X band (in 2024)



- INDUSTRY
- MANUFACTURING
- SOFTWARE
- SERVICES
- R & D
- TESTING

Contacts:

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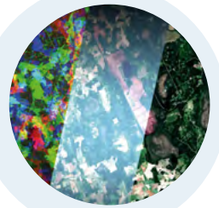
World from Space s.r.o.

General Description
World from Space is a proven deep-tech partner with 30+ experts in Earth Observation data solutions for applications across emerging markets, agriculture, NewSpace, and dual-use. As a trusted prime contractor with ESA project leadership experience, we deliver scalable downstream and ground segment applications powered by production-ready AI/ML technologies.

Competences & Capabilities
- Production-ready cloud infrastructure: Operational EO data processing pipelines on AWS, Azure, GoogleCloud, and CloudFerro
- Mission-critical data processing: End-to-end optical data processing from RAW/Level 0 to ARD/Level 2 with traceability and proven space heritage
- Instrument integration expertise: Calibration and validation services for optical instruments
- Requirements engineering: Systematic user requirements gathering, analysis, and system integration for complex missions
- Operational AI/ML systems: Production-deployed machine learning solutions using proven frameworks (PyTorch, TensorFlow, eo-learn)
- Global monitoring platforms: Scalable crop monitoring systems processing Sentinel and Planet data
- Multi-sensor fusion: Soil moisture and drought assessment combining EO and IoT data streams
- Domain expertise: Validated analytical solutions for agriculture, forestry, urban planning, climate, land use, wetlands, air quality, development assistance, defence, and others.

Products & Services
- DynaCrop- Powerful crop monitoring platform for precision farming. DynaCrop refines fertilizing, seeding, soil sampling, and overall farm operations within users' digital agriculture tools.
- ORBIS – Scalable ground segment EO data processing for smallsats with analysis of customer requirements, calibration & validation.
- Tailored Geospatial Analytics - Designing, executing, and evaluating domain-specific geospatial projects.

Major Space Projects & References
- ORBIS – Ground segment data processing platform for smallsats (ESA, 2023-2024)
- AMBIC –Czech national EO mission data segment design (phases 0,A,B1)(ESA, 2022-2023)
- TAVAP – Timing and variable rate applications for digital agriculture (ESA, 2022-2023)
- Agroreporter - EO and LLM fusion for agriculture (ESA, 2024-2026)
- AILAI - AI crop monitoring (European Network of AI Excellence Centers, 2023-2024)
- UpGreen - Urban analytics products for Copenhagen and Lisbon (ESA, 2024-2025)
- GDA FFF - Fast EO Facility supporting International Financial Institutions (ESA, 2023-2025)
- EO Clinic - 6 services for international development banks (ESA, 2020-2023)
- EuroGEO Showcases: A cloud-based contribution to EO. (H2020, 2021-2023)
- LIFE in Salt Marshes - Monitoring ecosystem services in salt marshes (LIFE, 2023-2027)



- INDUSTRY
- SOFTWARE
- SERVICES
- R & D
- TESTING

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Responsible for space and ESA projects:

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Zaitra s.r.o.

General Description
Zaitra is delivering Intelligence for Space Missions. We specialize in **on-board data processing** for satellite missions. Our customers are mainly Mission Integrators & Operators and Sensor & Payload Developers.

Competences & Capabilities
Complex **onboard data processing** solutions for Earth Observation missions equipped with optical cameras. Our solutions improve satellite data analyses directly in space by **edge device intelligence** integrated into satellites. It allows **processing of high volumes of data** generated onboard satellites while reducing latency and saving downlink-related costs by minimizing unnecessary data transmission. Most of our products are based on artificial intelligence. **Competencies already demonstrated** onboard VZLUSAT-2 mission. Currently, Zaitra is preparing for 2 commercial satellite missions and 4 ESA projects. We are also leading 2 R&D projects focusing on further development of onboard data processing for specific cases.

Products & Services
- **SKAISEN** – AI-powered on-board cloud detection solution, available in three variants:
  - **SKAISEN Edge** - Standalone FPGA IP Core with AXI DMA interface or a CPU optimized binary to a specific embedded processor.
  - **SKAISEN OS** - Customized operating system designed to work seamlessly with SKAISEN Edge on Xilinx® ZynqTM 7000 and Xilinx® ZynqTM UltraScale+TM boards.
  - **SKAISEN Payload** - SKAISEN OS delivered together with one of the Data Processing Units (DPU) available on the market.
- **On-board object detection solution**
- **SKAIDOCK** – carrier board designed for the Xiphos Q8(S) modules equipped with the Xilinx Zynq UltraScale+ Multi-Processor system-on-Chip (MPSoC), and a matching connector to Simera Sense Cubesat imagers.

Major Space Projects & References
On-board **data processing** solution for missions:
- SLAVIA – on-board meteor detection
- VZLUSAT-2 – on-board object detection
- TROLL – onboard cloud screening and object detection
- CORVUS – onboard object detection for situational awareness

On-board **control software**:
- Biomission19 - embedded software modules controlling microgravity experiments.

● INDUSTRY
■ SOFTWARE
× SERVICES
▲ R & D

Contacts:

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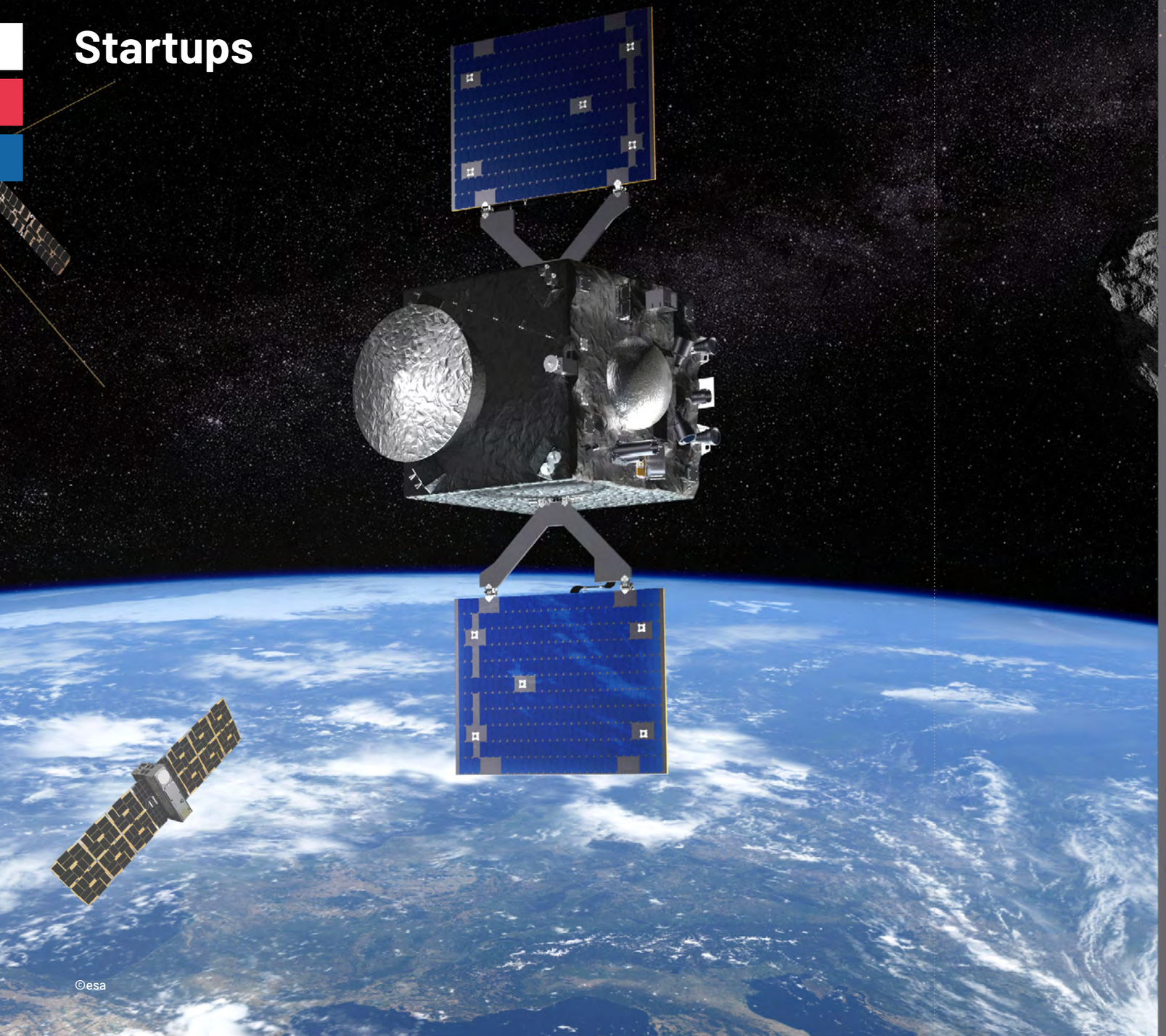
ZAITRA

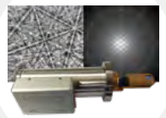
Startups



AdvaScope s.r.o.

General Description
We see what others do not. AdvaScope is developing particle detectors for electron microscopy whose exceptional sensitivity and speed surpass current solutions. This can contribute to the emergence of a new generation of electron microscopes that, for example, are not at all troubled by noise. This imaging technology is derived from solutions originally developed for experiments in the giant particle accelerator at CERN. AdvaScope is a spin-off of the Prague company ADVACAM, whose radiation detectors protect astronauts and electronics in space but also serve in the fields of art, medicine, construction, and energy.

Competences & Products & Projects
We design and manufacture solutions for the following applications:
(4D) STEM in SEM/TEM, µED (micro electron diffraction), EBSD, EELS, Micro/nano CT, Ptychography



Contacts:

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www.advascope.cz

ADVASCOPE
accelerating particle detection

ClimateScope s.r.o.

General Description
ClimateScope is a climate tech startup that leverages remote sensing data and machine learning technologies to tackle environmental challenges by identifying and mitigating sources of greenhouse gas emissions. The primary focus is on detecting illegal dumpsites that significantly contribute to carbon dioxide and methane emissions. By partnering with a diverse range of stakeholders, including governmental bodies, academic institutions, and NGOs, ClimateScope aims to provide innovative and effective solutions to enhance environmental sustainability and promote alternative emissions offset solutions on the market.

Competences & Products & Projects
- Detection and removal of illegal dumpsites
- Multilayer analysis with machine learning for environmental monitoring
- Development of an alternative greenhouse gasses (GHG) offset framework
- Collaboration with stakeholders (NGOs, academic institutions, governments)

Contacts:

ClimateScope s.r.o.

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Climate Scope

AerialComm s.r.o.

General Description
Our mission is to deliver RF products that are through the application of cutting-edge technologies delivering market-leading advantage for our customers, improving connectivity and broadening the range of applications of Satellite Communication. Our state-of-the-art High Gain Class 6 and Intermediate Gain Class 7 Antennas offer unmatched improvements in mass and size, making them versatile for wide range of application from drones to commercial aircraft. For the ground stations segment, we offer the UHF HGA Antenna for communication with Low Earth Orbit Satellites.

Competences & Products & Projects
- L-Band High Gain Class 6 Antenna,
- L-Band Intermediate Gain Class 7 Antenna
- UHF (400-470 MHz) High Gain Antenna
- EnVision mission subcontractor

Contacts:

AerialComm s.r.o.

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Responsible for space and ESA projects:
Petr Vokoun

E petr.vokoun@aerial-comm.com

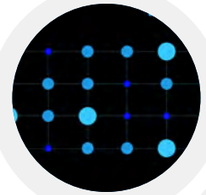
www.aerial-comm.com

AERIALCOMM

CORAC Engineering s.r.o.

General Description
CORAC is a space technology company based in Prague, Czech Republic, EU. Our team is a unique blend of cybersecurity and space expertise. We develop smart cybersecurity software solutions for government and private customers. We comply with internationally recognized standards such as CCSDS, NIST, OWASP, and MITRE, and contribute to a sustainable space economy.

Competences & Products & Projects
The CORAC team has over 15 years of experience in various fields of terrestrial cybersecurity, including Security Intelligence, Identity and Access Management, Cryptography, Vulnerability Assessments/Penetration Testing, Network Intrusion Detection, Security Information and Event Management, Supply Chain Risk Mitigation, and many more. We actively develop space heritage and increase the Technology Readiness Level (TRL) of our solutions.



Contacts:

CORAC Engineering s.r.o.

Bělehradská 858/23
120 00 Praha 2
Czech Republic

Responsible for space and ESA projects:
Dušan Mondek

P +420 724 769 393
E mondek@corac.cz

www.corac.cz

CORAC

Dartsat s.r.o.

General Description
Dartsat is developing HW and SW for the ground segment of satellite communication. The company aims to provide products and services for satellite operators and GSaaS (Ground Station as a Service) providers with the most up-to-date HW and SW for efficient and reliable communication with their satellites.

Competences & Products & Projects
- Tracking parabolic antennas
- Wideband satellite communication
- RF components

Contacts:

Dartsat s.r.o.
ICO: 17326150
Všenorská 265
Dobřichovice 252 29
Czech Republic

Responsible for space and ESA projects:

Jakub Horký

E jakub.horky@dartsat.com

www.dartsat.com

ECOTEN urban comfort s.r.o.

General Description
ECOTEN urban comfort s.r.o. is a data delivery and consulting company working on supporting cities in developing climate resilient urban environment through data-driven approach using earth observation and microclimate simulation technology. We provide services to city planners and urban development stakeholders such as urban designers, architects etc. We have worked with various clients in the public and private sector worldwide including Stadt Wien, IPR Praha and City of Helsinki amongst others. We have also worked with EU Horizon Europe projects and were received funding by ESA BIC Czech Republic and TACR for developing new technologies and services for cities.

Competences & Products & Projects
- Urban Heat Vulnerability Assessment
- Urban Microclimate Simulation Assessment
- Urban Resiliency API Service Suite

Contacts:

ECOTEN urban comfort s.r.o.
Lublaňská 1002/9
120 00 Praha 2
Czech Republic

Responsible for space and ESA projects:

Ing. Jiri Tencar (PhD)
CEO & Founder

E tencar@urban-comfort.eu

www.urban-comfort.eu

Festka s.r.o.

General Description
Festka brings to the cycling industry a unique combination of flexibility, exclusivity, science & technology and know-how. As a producer of high-end bicycles based in the Czech Republic, the brand focuses on custom production based on technological innovation. The company's ambition is to grow into a technological leader and trend-setter in the cycling industry through partnerships with leading scientific research institutions and centers of technological innovation. Making its products from locally manufactured filament wound carbon tubes puts Festka on the cutting-edge of technological solutions befitting rockets and satellites and unique in the cycling industry.

Contacts:

Festka s.r.o.

Jana Masaryka 28
120 00 Praha 2
Czech Republic

Responsible for space and ESA projects:

Michael Moureček

E michael@festka.com

www.festka.com

FlyinDiamonds s.r.o.

General Description
FlyinDiamonds operates the Czech Republic's first shared drone test polygon and UAV Technology Park located in Moravské Budějovice. We offer a unique space for UAV innovation, testing, training, and integration into controlled airspace. Our mission is to bridge the gap between advanced drone R&D and practical deployment across sectors including logistics, security, inspection, and entertainment.

Competences & Products & Projects
- Testing, Training, R&D, and U-Space Simulation—at one address. We operate the Czech Republic's first shared drone test polygon and UAV Technology Park, accelerating UAV innovation and integration into controlled airspace.
- We specialize in custom drone solutions designed to meet the specific needs of your sector. We design autonomous drones for industrial missions and drone light shows.

Contacts:

FlyinDiamonds s.r.o.

Purkyňova 649/127
612 00 Brno
Czech Republic

Responsible for space and ESA projects:

Ing. Josef Jelínek

E josef.jelinek@flyindiamonds.com

www.flyindiamonds.com

HydroGENesis s.r.o.

General Description
HydroGENesis is a forward-thinking company dedicated to harnessing hydrogen as both a resource and a key energy carrier. Our primary focus is on the exploration of natural hydrogen gas using space technologies.

Competences & Products & Projects
The research and development areas of the company include:
- Algorithm to identify natural hydrogen seepage sites. This cutting-edge solution combines remotely sensed data with deterministic models and machine learning to accurately pinpoint potential hydrogen reserves.
- Design and development of portable, high-performance equipment capable of detecting even trace concentrations of hydrogen gas with speed and reliability.

Contacts:

HydroGENesis s.r.o.

Chrášťanská 402/6
161 00 Praha 6
Czech Republic

Responsible for space and ESA projects:

Mgr. Karel Martínek, Ph.D.

E office@hydrogenesis.eu

www.hydrogenesis.eu

Hydronaut Project a.s.

General Description
The Hydronaut DeepLab is a research and training station designed for long-term stays of smaller crews in the ICE environment, both on land and underwater. Station can be used to train astronauts, special forces of the ISS, for medical, biological and psychological research, as well as to test technologies in extreme conditions. Research and training programmes are conducted on a time-limited mission basis and combines partners' requirements while optimising the joint use of backbone technologies.

Competences & Products
Own on-board system for crew communication, Rental of a research station, Provision of missions for research purposes: Analog missions, Training missions for emergency services, Scientific experiments in the fields of psychology, medicine, pharmacy, agriculture, etc.

Projects: Development of the platform for maintaining and monitoring the physical conditions in ICE environments (2023-2025)

Contacts:

Hydronaut Project a.s.

Pod velkým hájem 1647/13
153 00 Praha 5
Czech Republic

Responsible for space and ESA projects:

Jiří Schneider

E jiri.schneider@hydronaut.eu

www.hydronaut.eu

ICEE.Space Czechia s.r.o.

General Description
ICEE.Space is a space company developing analogue astronaut missions and technologies to support human exploration of the Moon, Mars, and extreme environments on Earth. Our work includes deployable habitats, simulated EVA suits, and immersive missions that test systems, train crews, and support research.

Products
- Inflatable Analogue Habitat – lightweight, modular, field-deployable
- ICEE Analogue EVA Suit – designed for mobility, safety, and communications
- Mobile Support Systems – power, telemetry, and comms for off-grid simulations
- Analogue Astronaut Kit – complete setup for mission deployment
- Custom simulation scenarios and training packages

Contacts:

ICEE.Space Czechia s.r.o

Rotterdamseweg 266a
2628 AS Delft
The Netherlands

Responsible for space and ESA projects:

Charlotte Pouwels
E Charlotte@icee.space

www.icee.space

InsightART s.r.o.

General Description
InsightART is revolutionising the art world with next-generation x-ray imaging technology previously available only at the cutting-edge of particle physics research. Our mission is to safeguard the world's artistic heritage with state-of-the-art tools designed to assist art restoration experts and to unmask forgeries.
InsightART is the only company on the art authentication market using scanners with single-photon processing detectors. No competitor can match the level of quality and information that we provide.

Competences & Products & Projects
- InsightART uses advanced x-ray technology from particle physics research for art restoration and forgery detection.
- A subsidiary of the NASA-certified ADVACAM, it harnesses the patented WidePIX detectors developed from CERN research.

Contacts:

InsightART s.r.o.
Prague
U Pergamenky 1145/12
170 00, Praha 7
Czech Republic

Responsible for space and ESA projects:

Josef Uher

P +420 605 420 680
E Josef.uher@insightart.eu

www.insightart.eu

Intellmaps s.r.o.

General Description

Our digital twin technology is employed for efficient asset management. Our cloud-based solution streamlines your operations and reduces costs. We utilize a cutting-edge mobile laser scanner to create detailed building maps. We seamlessly integrate all spatial data related to your infrastructure into a user-friendly online application. You'll have access to a comprehensive toolkit tailored to your specific requirements, featuring multiple layers and modules.

Competences & Products & Projects

- Intellmaps provides digital asset management solutions through a distinctive blend of technology (hardware) and software (SaaS).
- We construct a "digital twin" of a building by combining extensive datasets of point clouds, 360° imagery, and 2D technical maps. This includes seamless integration with CAD/BIM files, all within a cloud-based online application.

Contacts:

Intellmaps s.r.o.

Čumpelíkova 1885/11a
182 00 Praha 8
Czech Republic

Responsible for space and ESA projects:

Ing. Ladislav Čapek, MBA

E Ladislav.capek@intellmaps.com

www.intellmaps.com

Mapotic s.r.o.

General Description

Mapotic is an easy-to-use cloud platform that empowers organizations worldwide with innovative map-based products and services. It offers an interactive map builder and geolocation data processing platform, branded mobile applications, and solutions for real-time or near real-time visualization of changing human or sensor input, GNSS data, including weather and satellite imagery, or data from global connectivity providers.

Main Benefits

- Time savings - Rapid deployment and reduced development and data processing costs using simple, yet flexible, pre-built applications.
- Cost reduction - Optimize the cost of running high-traffic mapping solutions by integrating optimized cloud services and a variety of providers.
- Location data automation - Automate the processing of geospatial data.

Contacts:

Mapotic s.r.o.

Pod Hajkem 2204/1
180 00 Prague
Czech Republic

Responsible for space and ESA projects:

Ivoš Gajdorus

E ivos.gajdorus@maptic.com

www.mapotic.com

KacaDu corp s.r.o.

General Description

Designers, researchers, and makers working at the intersection of material innovation, modular architecture, and environmental engagement. Our work is grounded in collaborative, iterative design, combining deep research with public participation to create systems that adapt to both human and planetary needs.

Competences & Products & Projects

SARA: Self-Actuating Robotic Architecture:

- A design system inspired by bionics, soft robotics, and origami engineering. Developed for space and adaptable to Earth, it redefines how we build in extreme or shifting environments

VIDA: Variable Instantly-Deployable Architecture

- VIDA is a modular building system that uses foldable bricks made from recycled plastic to enable rapid, tool-free construction of urban structures—by anyone.

Contacts:

KacaDu corp s.r.o.

Vlkova 507/16, Žižkov
130 00 Praha
Czech Republic

Responsible for space and ESA projects:

Adam Urban

E urban.adam92@gmail.com

www.kacadu.com

MapTiler s.r.o.

General Description

MapTiler started as a small project and grew to a much bigger company in just a few years. We all share one thing - a passion for maps, and truly loving what we do.
With our platform for building digital maps, clients produce maps that positively impact lives of millions of people. Every month, 300 million people see MapTiler's digital maps in our customers' mobile apps and websites.
We innovate in the field of digital maps and make maps accessible to as many people as possible for everyday use. We always try to push the boundaries of cartography a bit further.

Competences & Products & Projects

- Online maps
- Offline maps
- Geodata processing
- Mapping solutions

Contacts:

MapTiler s.r.o.

Tišnovská 1505/137
61300 Brno
Czech Republic

Responsible for space and ESA projects:

Petr Přidal

E petr.pridal@maptiler.com

www.maptiler.com

MeteoHawk s.r.o.

General Description

MeteoHawk's smart drones are revolutionizing atmospheric measurements by making them significantly more affordable. Our innovations allow for research in regions previously excluded by prohibitive expenses or poor accessibility. Moreover, we engage with local communities, fostering employment and building knowledge where it's most impactful.

Competences & Products & Projects

- Platform for atmospheric research
- Platform for weather and climate forecasting
- Platform for air quality measurements

Contacts:

MeteoHawk s.r.o.

Beranových 130
199 00 Prague
Czech Republic

Responsible for space and ESA projects:

David Novotný

E ceo@meteohawk.com

www.meteohawk.com

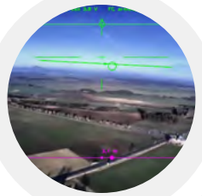
Navioneers s.r.o.

General Description

We are a pioneering startup dedicated to advancing the frontiers of visual navigation in GNSS-denied environments. At the core of our mission is the development of cutting-edge UAV avionics, featuring custom software and hardware meticulously engineered for reliable navigation without reliance on traditional GNSS systems.

Products

- visual navigation board (not available yet)
- avionics hardware and software design, testing and production
- ground control station
- UAV platform design, production, testing and operation
- communication system solutions
- datasets



Contacts:

NAVIONEERS s.r.o.

Tržiště 372/1, Malá Strana
118 00 Praha
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Responsible for space and ESA projects:

Ing. Vítek Udatný

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www.navioneers.com

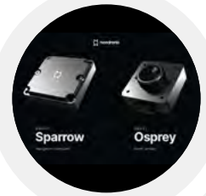
Needronix CZ s.r.o.

General Description

Needronix specializes in nanosatellite integration and development of innovative spacecraft components. Our components are easy to integrate and we are pushing the limits of size by designing them to be as small as possible and lightweight while offering great performance.
Whether you're embarking on a new mission or searching for reliable components, we're here to support your journey through space.

Competences & Products & Projects

Needronix offers comprehensive expertise in nanosatellite missions, providing end-to-end services encompassing every aspect of your mission's success. From design and development to launch and operation, we are your trusted partner in the world of nanosatellite missions.
Our mission is to significantly reduce cost and time of CubeSat integration so delivering customers payload into space will be faster and cheaper than ever.



Contacts:

Needronix CZ s.r.o.

Prague
Czech Republic

Responsible for space and ESA projects:

Patrik László

E patrik.laszlo@needronix.eu

www.needronix.eu

SkyMaps s.r.o.

General Description

Founded in 2016, SkyMaps s.r.o. is providing smart farming solutions, making farm management better through digital tools. Starting as a software-focused company, SkyMaps s.r.o. created CultiWise, a project that uses basic computer vision to make sense of farm data collected from satellites and UAVs. The CultiWise shows SkyMaps s.r.o.'s strong desire to push agritech forward, aiming to improve farming worldwide through machine learning, better detection, and easy-to-expand tech infrastructure. SkyMaps s.r.o. continues to play a major role in moving traditional farming to a modern, data-driven, and eco-friendly approach.

Competences & Products & Projects

CultiWise is a modern, cloud-based platform dedicated to empowering the agricultural sector with state-of-the-art technology solutions. Our innovative software streamlines the process of precision agriculture, allowing farmers to seamlessly upload data and create comprehensive prescription maps.

Contacts:

SkyMaps s.r.o.

Botanická 834/56
60200 Brno
Czech Republic

Responsible for space and ESA projects:

Martin Kapšo

E kapso@skymaps.cz

www.skymaps.cz

SPACERACE s.r.o.

General Description
SPACERACE is focused on making the space companies faster through standardized electromechanical components. ESA BIC supported SPACERACE for development of ATLAS release actuators. Release actuators for space can retain a high preload and release it on demand – for example to unfold solar arrays. They are indispensable and extremely reliable which usually comes at high cost. ATLAS actuators are user centered with significant savings for ground test campaigns. SPACERACE further develops space grade ATLAS, complementary preload device UNIKA and release mechanisms for solar arrays and launchers.

Competences & Products & Projects
- ATLAS Release actuators (22kN)
- ATLAS electronics for programmable simultaneous control of up to 5 release actuators
- UNIKA Preload devices for Hold-Down and Release Mechanisms
- Release mechanisms (solar array, satellites)
- Build-to-spec services

Contacts:

SPACERACE s.r.o.

Purkyňova 649/127
612 00 Brno
Czech Republic

Responsible for space and ESA projects:

Richard Hynek

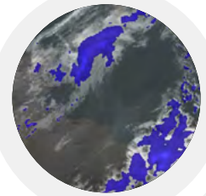
E richard.hynek@spacerace.cz

www.spacerace.cz

Tempest Labs AI s.r.o.

General Description
TempestLabs.AI is a cutting-edge research company revolutionizing weather forecasting through artificial intelligence. By combining physics-informed neural networks with diverse data sources—including satellite, terrain, radar, and point measurements—TempestLabs.ai delivers hyper-local customizable weather forecasts. The solutions are tailored for industries where weather precision is critical, such as agriculture, energy, logistics, defense, and disaster response.

Competences & Products & Projects
- Hyperlocal AI forecasts, covering weather variables at the micro-level, independent of weather stations.
- Worldwide satellite and radar-based rainfall nowcasting, global coverage of flood, landslide, river flow, and road hazard alerts.
- Terrain-Weather Assistant with LLM reasoning.
- Cloud-penetrating terrain monitoring reconstructs precise terrain dynamics, like landslide risks or flood progression.
- Weather risks consultancy.



Contacts:

Tempest Labs AI
Bělehradská 858/23
Vinohrady
120 00 Praha
Czech Republic

Responsible for space and ESA projects:

Vojtěch Rybář

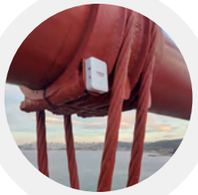
E votech.rybar@tempestlabs.ai

www.tempestlabs.ai

StatoTest s.r.o.

General Description
The comprehensive Statotest monitoring system represents modern technology that continuously and long-term measures and records physical quantities indicating the current state of building structures. It uses prediction features based on AI. The benefits are: data gathered by the system serve as the basis for repairs and maintenance planning and prioritization, thereby saving monetary funds. Limiting significant repairs or construction interventions results not only in cost savings but also in a significant reduction of CO2 emissions from unrealized concrete works and construction activities. Applications include transport and energy infrastructure, and geo-monitoring. We use satellite data to monitor large areas.

Competences & Products & Projects
- Monitoring system for efficient administration
- Predictive maintenance
- GNSS structure monitoring for larger areas or structures
- Highly scalable and maintains accuracy



Contacts:

STATOTEST, s.r.o.

U Jezu 525/4
460 01 Liberec
Czech Republic

Responsible for space and ESA projects:

Petr Klokočník

E klokocnik@statotest.com

www.statotest.com

Turncircles s.r.o.

General Description
Turncircles specializes in developing and manufacturing custom electric motor technologies that provide a superior power-to-weight ratio for small to medium-sized applications in robotics, E-Bikes, power tools as well as space and aerospace applications. Turncircles also designs and manufactures alternators and electrical generators for other types of equipment such as combustion engines or wind turbines. The company can offer various quantities from small series of prototypes to higher serial production volumes. Turncircles proprietary designs allows for quick customization and shorter lead times.

Competences & Products & Projects
- Custom electric motors
- Custom generators and alternators

Contacts:

Turncircles s.r.o.
Václavské náměstí 795/40
Nové Město
110 00 Praha 1
Czech Republic

Responsible for space and ESA projects:

Kaan Ozgen

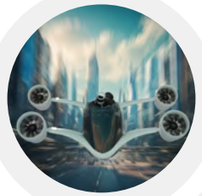
E kaan.ozgen@turncircles.com

www.turncircles.com

UDX s.r.o.

General Description
We are an aerospace startup committed to delivering electric flying vehicles for human use. Although we operated in relative silence for three years, we are now eager to increase our visibility. Our headquarters are located just outside Prague.
Our envisioned vehicle boasts vertical take-off and landing capabilities. To enhance safety, we are integrating tiltable electric ducted fans instead of open rotors, which is the current industry standard. Among our various objectives, we plan to utilize our product for conducting rescue operations in challenging terrains. We are a dedicated team of four engineers, passionately working to turn this vision into reality!

Competences & Products & Projects
- Design and production of composite parts
- Flight software
- Aerodynamic simulations
- Fast iterations
- Manufacturing of electric ducted fans (EDFs)



Contacts:

UDX s.r.o.

Letní 319
250 82 Horoušánky
Czech Republic

Responsible for space and ESA projects:

Jiri Madeja

E jiri.madeja@udx.cz

www.udx.aero

Varistar, s.r.o.

General Description
Varistar offers huge decrease of ecological burdens in industrial crop production thanks to the usage of historical and actual data about fields (earth observation technologies, soil samples, elevation models and other resources). Based on these data, farms apply optimal rate of fertilizers or crop protection products in each part of fields. As a result, there is a maximum use of inputs by plants and a dramatic reduction in the release of fertilizers or pesticides into the environment.
Varistar system divides fields into many production zones with different yield potential and treats each of these zones based on its needs. Varistar offers to its clients to start with precision farming and variable rate applications without huge investments, learning new skills and additional operational workload mostly with existing machinery by deployment of Varistar One or Varistar Direct terminals.

Contacts:

Varistar, s.r.o.

K Varadovu 250
252 03 Řitka
Czech republic

Responsible for space and ESA projects:

Jan Semrád

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E jan.semrad@varistar.cz

www.variabilni-aplikace.cz

UptimAI s.r.o.

Competences & Capabilities
Uptimai offers consultancy and software solutions for data analysis and smart optimization, enabling engineering teams across various industries to make faster and more accurate design decisions. The AI-powered tools evaluate small datasets and present results using modern visualisation techniques, reducing production costs while optimising product efficiency across a wide range of operational conditions.

Products & Services
- Simulation
- Statistical/Smart Optimization
- Surrogate modelling
- Data Analysis
- Digital Twin
- Artificial Intelligence
- Programming
- Project Management
- Machine Learning
- Statistics/Statistical Analysis

Contacts:

UptimAI s.r.o.

Hybernská 1613/38
110 00 Nové Město, Praha 1
Czech Republic

Responsible for space and ESA projects:

Martin Kubíček

E martin.kubicek@uptim.ai
P +420 602 648 224

www.uptim.ai

VisionCraft s.r.o.

General Description
VisionCraft develops and markets advanced object monitoring algorithms which provide customers with data and insights into various commercial and public scenes and situations and do so in real time. Our computer vision system – viRAM – scans the surrounding environment as the vehicle is moving, and provides real-time analysis of the video stream, processing the data and sending anonymized metadata from it to the cloud server through GSM network. This enables viRAM to generate real-time reports and thanks to a Galileo positioning system, it creates an exact map overlay of road defects and road assets and their conditions.

Competences & Products & Projects
- viRAM – VisionCraft Road Asset Management
- Data collection and AI based detection system
- Analysis of the collected data
- Software development

Contacts:

VisionCraft s.r.o.

Výstaviště 405/1
603 00 Brno
Czech Republic

Responsible for space and ESA projects:

Robert Pinkas

E pinkas@visioncraft.cz

www.visioncraft.ai

Volteek solutions s.r.o.

General Description
Volteek is an innovative engineering company focused on the development of high-reliability electronics and embedded software for space and aerospace applications. We specialize in design, prototyping, and small-series production of custom electronics tailored to demanding mission-critical environments.

Competences & Products
- High-reliability electronics design for aerospace and space systems
- Development of embedded software for safety-critical and real-time applications
- Battery control and management systems with advanced balancing technology
- Expertise in high-voltage architecture and fault-tolerant designs
- Custom PCB design, prototyping, and testing for harsh environments

Contacts:

Volteek solutions s.r.o.

Ječná 29a
621 00 Brno
Czech Republic

Responsible for space and ESA projects:

Dominik Klement

E dominik@volteek.com

www.volteek.com

Vrgineers, Inc.

General Description
Vrgineers is a US-Czech corporation established in 2017, specializing in the development of state-of-the-art immersive technologies. Backed by a team of over 50 engineers and PhD-level experts, the company focuses on delivering advanced solutions for pilot training and simulation.
Vrgineers develops and manufactures its own virtual and mixed reality headsets as well as complete simulation systems. Through comprehensive in-house research, development, production, and integration, the company delivers high-performance solutions tailored to the demanding needs of military and professional aviation training.

Product Portfolio
- XTAL 3 VR, XTAL 3 NEO, XTAL 3 CAVU
- Somnium VR1 VR, Somnium VR1 MR
- Portable Trainer, Generic Classroom Trainer, Classroom Trainer, Custom Trainer

Contacts:

Vrgineers, Inc.

Jankovcova 1037/49
170 00 Prague 7
Czech Republic

Responsible for space and ESA projects:

Ing. Marek Polčák

E marek@vrgineers.com

www.vrgineers.com

X – ENDER Space s.r.o.

General Description
X – ENDER Space s.r.o. is developing a spaceborne distributed digital infrastructure for space applications. Our system will connect data collecting machines with machines capable of computing, allowing service providing and decision making directly from orbit, enhancing DSS (Distributed Satellite Systems) missions and facilitating data exchange and decentralized in-orbit applications. Our mission is redefining satellite connectivity, profitability and unlocking new possibilities for space missions and constellations.

Competences & Products & Projects
- Distributed ledger enabling Data Exchange for Space data and applications in Space
- Decentralized Control System for constellations of satellites
- Software development
- Encryption
- Zero Knowledge Proofs & Blockchain technology
- EO, Satellite traffic management
- In-orbit computation

Contacts:

X – ENDER Space s.r.o.

Bělehradská 858/23
120 00 Praha, Vinohrady
Czech republic

Responsible for space and ESA projects:

Alfredo Mensi

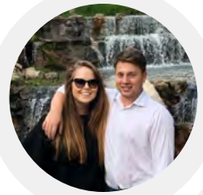
E a.mensi@x-ender.com

www.x-ender.space

Zasaď život s.r.o.

General Description
Zasaď život empowers landowners and companies to fight climate change through local carbon offsetting. We combine satellite imagery, AI, and field data to monitor and verify CO_2 sequestration in real time.

Competences & Products & Projects
- AI-powered carbon monitoring platform
- Verified local offset projects across Europe
- Tools for landowners to generate income from sustainable practices
- Biodiversity and ecosystem service tracking



Contacts:

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Responsible for space and ESA projects:

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3L Robotics s.r.o.

General Description
3L Robotics is revolutionizing last-mile delivery with its cutting-edge solution. Our flagship product, the Drone Helipad, is a game-changer in the world of parcel delivery. This innovative hardware landing pad boasts an advanced navigation and communication system, serving as the ultimate resource for drone operators. The helipad not only ensures the safe landing of drones but also provides crucial information to operators in real-time. Moreover, our helipad takes convenience to the next level by seamlessly transporting delivered parcels into buildings, simplifying the logistics process.

Competences & Products & Projects
- Hardware and software development
- Geolocation
- Drone flight control system
- Civil Project engineering

Contacts:

3L Robotics s.r.o.

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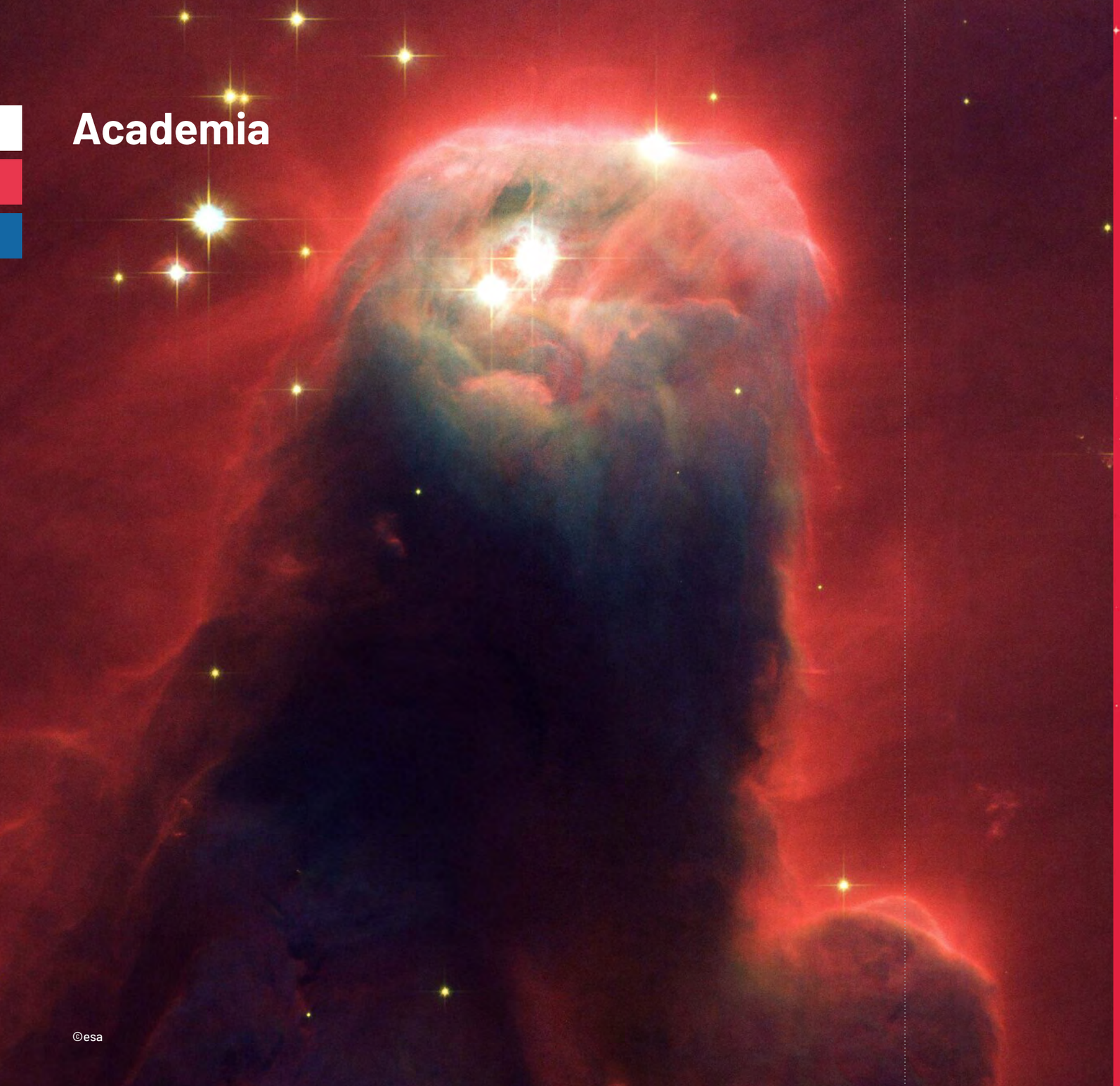
Startups incubated by ESA BIC

- NG AVIATION SE
- Triphood s.r.o.
- Tuddy Tuddy s.r.o.
- InsightART s.r.o.
- R&D SPECTRE, s.r.o. (Festka)
- Big Terra Alpha s.r.o.
- NaviRider s.r.o. (former Right Rider s.r.o.)
- Let´s Earth s.r.o. (MeteoInsight)
- FoxWorks Aerospace s.r.o.
- UptimAI s.r.o. (former SMUP-UQ s.r.o.)
- ALEEGO s.r.o.
- strafos s.r.o.
- ZetJet Technologies s.r.o.
- MapTiler s.r.o. (former OctoGeo s.r.o.)
- World from Space s.r.o.
- NeuronSW SE
- Suborbitality s.r.o.
- Dronetag s.r.o.
- Skymaps s.r.o.
- STRATOSYST s.r.o.
- Spacemanic CZ s.r.o.
- Entrant s.r.o.
- Vrgineers, Inc.
- Varistar, s.r.o.
- Numer8 s.r.o.
- Uneeqly s.r.o.
- mobis0ne s.r.o.
- Zaitra s.r.o.
- GROUNDCOM.SPACE s.r.o.
- Hydronaut Project a.s.
- Intellmaps s.r.o.
- EigenSpace s.r.o.
- Needronix CZ s.r.o.
- Turncircles s.r.o.
- ECOTEN urban comfort s.r.o.
- MARS Buildings s.r.o.
- FlyinDiamonds s.r.o.
- AdvaScope s.r.o.
- VisionCraft s.r.o.
- StatoTest s.r.o.
- CORAC Engineering s.r.o.
- SPACERACE s.r.o.
- ICEE.Space Czechia s.r.o.
- Dartsat, s.r.o.
- Betrian a.s.
- Mapotic s.r.o.
- 3L Robotics, s.r.o.
- AerialComm s.r.o.
- UDX s.r.o.
- X - ENDER Space s.r.o.

Academia



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Astronomical Institute, CAS

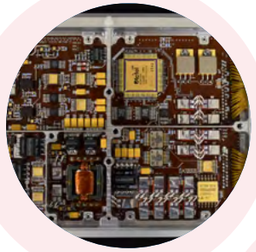
General Description
The Astronomical Institute (ASU) of the Czech Academy of Sciences (CAS) is a professional research institute covering a wide range of research topics; from the immediate environments of the Earth to distant galaxies and black holes in their cores. The research activities are carried out in four scientific departments: Department of Galaxies, Solar Physics, Stellar Physics, and Interplanetary Matter.

Competences & Capabilities
Large international collaborations represent a significant part of the ASU research activities. Scientists from ASU are involved in many international projects of new-generation astronomical instruments for ground-based as well as space-based telescopes, the latter usually done in close cooperation with the European Space Agency (ESA). ASU takes the coordinating role in the programme 'Space for Humankind' of the CAS Strategy AV 21 project (www.vesmirprolidstvo.cz).

Products & Services
- Expert consultancy for scientific space projects
- Ultra-low noise Power Supply and Conditioning units for sensitive electrostatic and RF instruments.
- Space weather monitor and alert service: radio burst alerts, solar flare forecast, sunspot group classification, daily bulletin and synoptic images of the Sun, integration with the SWESNET network.

Major Space Projects & References
- Solar Orbiter – contribution to three scientific instruments on board: STIX, RPW, and METIS
- Proba 3 – contribution to the ASPIICS coronagraph
- JUICE - radiation-hardened Ultra Low Noise Cold-Redundant Low-Voltage Power Supply units for RPWI
- Swarm DISC (Swarm Data, Innovation, and Science Cluster) –member of an international consortium
- DART, HERA - coordination of the pre-impact and post-impact observation campaign, data validation, and orbital modelling.
- ATHENA X-ray Integral Field Unit (X-IFU) – Row Addressing and Synchronisation module (with IAP)
- ATHENA Wide-Field Imager (WFI) – Galvanic Isolation Modules as a part of the Detector Electronic Subsystem
- eXTP / STROBE-X – mechanical design of the Detector and Collimator Frames (with industry)
- LISA - scientific and project management of the development of the Fibre Switch Unit Actuator

Space Related Equipment, Labs & Certificates
- Electronic lab equipped for breadboarding and testing activities related to space-grade and EGSE H/W development



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Brno Observatory and Planetarium

General Description
To fly into space, look into the microworld, discover the secret of life, immerse yourself into the realm of fantasy, partially reveal the future and live a science-fiction story. All of that, actually much more, can be found at the Brno Observatory and Planetarium.

We are a centre for popularization of various sciences, especially in the field of inanimate nature. First of all, it is of course astronomy, but we do not avoid geology, chemistry, physics, mathematics, geography and a lot of other fields. All of that in a form which is understandable, entertaining and interactive. We are not a scientific workplace, but you can encounter science at every step. We are also engaged in promotion of Brno universities and big scientific projects carried out in the area of Brno.

The digital planetarium will immerse you with its scene and sound. The series of special projectors combined with tens of computers can conjure a surprisingly true model of the space on the projection screen with a diameter of 17 meters. The repertoire of the digital planetarium does not include only astronomical shows. We will take you to the places that are hard to get to – under water, inside a human body, to the near future, to the microworld and macrocosm. Many of our shows are simultaneously projected in English.

Up-to-date premises of the Brno Observatory and Planetarium are an ideal place for medium size events of congress and incentive tourism, specialized events for sponsors and advertising or barter partners, cultural activities (theatre and musical performances) as well as a little more intimate meetings.

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Brno University of Technology

General Description
Brno, the centre of the South Moravian Region and student city, has the largest concentration of the space industry in the Czech Republic. Brno University of Technology is the largest technical universities in the Czech Republic, which dominates in the preparation of highly educated professionals for the space industrial sector.

Competences & Capabilities
The university focuses on (but not only): conceptual design of space vehicles, structural design and testing (static, quasistatic, dynamic incl. vibrations), dynamic impact tests, manufacturing of airframe parts (complete integration of the vehicles), flight testing at earth conditions, space tribology, additive manufacturing, solar corona observations, human spaceflight technology including AI systems, wireless communication, electronic control units, machine learning, computer graphics and interaction, cyber-physical systems, software development + verification and testing, embedded systems etc.

Products & Services
- Space applications - International Masters Space Study Programme at Faculty of Electrical Engineering and Communications
- Aerospace technology - International Masters Space Study Programme at Faculty of Mechanical Engineering
- Mechanical, electrical and software engineering (MS.c. and Ph.D. programme)
- Close cooperation with partners from the space industry
- Custom research and development

Major Space Projects & References
- Miniaturized heat switch for probes and satellites, ESA
- Radar Observing System for Europe in L-band)-structure testing
- Moon Drone Feasibility Study, ESA, Thales-Alenia Space
- MetOp-SG - Instrument 3MI and FWC module, ESA
- L-BAND communication system - High throughput wireless communication for Aerospace applications, ESA MILANI CubeSat for HERA mission - onboard hyperspectral data processing, ESA
- Advanced onboard compression and filtering of hyperspectral data, ESA
- SLAVIA (Space Laboratory for Advanced Variable Instruments and Applications) - Czech ambitious mission ICARUS ARMOR personalized AI digital twin for crew cognitive performance prediction, ESA

Space Related Equipment, Labs & Certificates
The University operates two major, state-of-the-art laboratory centres:
- CEITEC – Central European Institute of Technology - https://www.ceitec.eu/
- NETME Centre – New Technologies for Mechanical Engineering - http://netme.cz/

Newly hosting a unique ISO Class 9 cleanroom for spacecraft integration with a 14 m clear height, built and operated by S.A.B. Aerospace within the Institute of Aerospace Engineering for advanced AIT (Assembly, Integration and Testing) activities.

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Responsible for space and BUT activities coordination:
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CESNET, z. s. p. o.

General Description
CESNET is a research organisation established in 1996 by Czech universities and the Czech Academy of Sciences to operate and develop the national e-infrastructure for research, development and education which encompasses a national research and education network (NREN), national grid and cloud computing infrastructure and large-scale data storage services. This services are complemented with tools and for managing access to resources, communication security and data protection tools, and services for efficient collaboration between distributed users and teams.

Competences & Capabilities
- Network data transfer
- Data processing and data storage services
- High-performance computing
- Monitoring and security services
- Forensic analysis, penetration and infrastructure stress testing
- Online collaboration tools & Multimedia
- Identity management & Middleware
- Research and development in the field of information technology

Major Space Projects & References
CESNET operates national Data Hub system, which enables users fast and reliable transfer and access to the Sentinel mission's data (products). Located at CESNET, the Data Hub Relay is able to capitalize CESNET's high speed connection to GÉANT as well as CESNET's extensive experience in operating distributed infrastructures, storages and high throughput computing. The choice of data sets distributed through the Relay is driven by the needs of partners involved in the relay network, and by the needs of users active in the Czech Republic and surrounding regions.

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Czech Hydrometeorological Institute

General Description

Czech Hydrometeorological Institute (CHMI) is a central state institute of the Czech Republic in the fields of air quality, meteorology, climatology, hydrology, and water quality. The objective of CHMI's activity in the above fields is to establish and operate monitoring stations with the aid of a telecommunications networks. The related activities include building national networks for monitoring the atmosphere and hydrosphere, to assess observations, measurements and monitoring data and to create and maintain databases in a unified information system, to provide information to the public and to report to regional and national authorities/ institutions as well as to the EU bodies. CHMI consists of five divisions, including Meteorology and Climatology, Air Quality, and Hydrology Divisions.

Competences & Capabilities

The CHMI is authorized by the Ministry of the Environment to operate the State air quality monitoring network of the Czech Republic. It is also authorized to ensure in the long term the operation and development of the Air Quality Information System including the national air quality database. Among all of the core products of the Air Quality Information System Department, air quality maps play a particularly important role. The maps are constructed both using near real time data (up-to-date) and annual average data, with the underlying methodology based on the data fusion of the monitoring, modelling and other supplementary data.

Major Space Projects & References

SAMIRA (Satellite based Monitoring Initiative for Regional Air quality) was a project funded by the European Space Agency. In the project, seven organizations from four counties (Norway, Czech Republic, Poland, and Romania) were involved, including CHMI. The overall goal of the SAMIRA project was to improve regional and local air quality monitoring through synergetic use of data from present and upcoming satellites, traditionally used in-situ air quality monitoring networks and output from chemical transport models. The examined pollutants were Particular Matter (PM10, PM2.5), Nitrogen Dioxide (NO2), and Sulphur Dioxide (SO2). The time steps were hourly, daily, and annual data.

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Department of Geoinformatics, Faculty of Environment,
J. E. Purkyně University in Ústí nad Labem

General Description

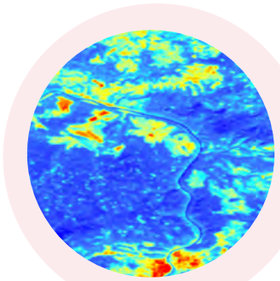
Jan Evangelisty Purkyně University in Ústí nad Labem, a public university founded in 1991, represents a modern center of education and scientific-research in the region. It is formed by eight faculties with a wide range of study programs ranging from natural and social sciences to engineering, art and health. The Department of Geoinformatics provides teaching of geoinformatics, computer science and mathematics, and research activities in the fields of remote sensing, cartography and geodetic applications in environmental studies.

Competences & Capabilities

The main tasks of the Dept. of Geoinformatics are educational and research activities in the region. We study and introduce the students to the potential application of Earth observation data for various environmental issues. Our main focus is on spatio-temporal changes of landscape, specifically changes in land-use, regeneration of post-mining landscapes, remains of past human activities in cultural landscape, archeological research, ecosystem disturbances due to invasive species, wildfires and pests, and climate change mitigation. In our work, we combine field measurements with drone, airborne and satellite observations, and emphasize applied research and the practical implementation of Earth observation methods and tools for nature conservation and landscape management.

Space Related Equipment, Labs & Certificates

- equipment for multispectral and laser scanning, and for bathymetry
- variety of unpiloted aerial vehicles (drones)
- corresponding software and field equipment



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Department of Laser Physics and Photonics, CTU in Prague

General Description
Department of Laser Physics and Photonics is a technical university department with a long heritage in space related projects under various roofs of Interkosmos, NASA and other space agencies. The department was coordinating the world satellite laser ranging (SLR) network for 20 years, it contributed to planetary missions to Mars and to laser time transfer missions of CNES, NASA, China, and ESA mostly with detectors based on Single Photon Avalanche Diode (SPAD).

Competences & Capabilities
In pure space segment the department capabilities cover single photon counting in space (from EUV to near IR) for altimetry, ranging, lidar or laser time transfer, x-ray optics and diagnostics. In the ground segment it has a long term experience with picosecond instrumentation for SLR, i.e. picosecond photon counters, picosecond laser sources, sub-picosecond event timing, and in on-site timing calibration of SLR stations worldwide.

Products & Services
detectors for single photon counting (ranging, altimetry, lidar) in space in VIS and IR single x-ray quantum detection, x-ray optics, and imaging methods for EUV and soft x-ray sub-picosecond event timing

Major Space Projects & References
- Satellite Laser Ranging (SLR) – ground segment network (Interkosmos)
- Portable Calibration Standard for SLR network – (Czech and various national grant agencies)
- Mars 92, Mars Polar Lander 98 – planetary altimeter & LIDAR (Russia, NASA)
- T2L2 @ Jason2 – on-board detector for laser time transfer (CNES, NASA)
- LTT @ BeiDou 2 / Compass – on-board detectors for picosecond laser time transfer (China)
- X-ray Optics and Diagnostics – research activity (FP7Space)
- European Laser Timing (ELT) – on-board SPAD based detector for ISS module ACES – (ELIPS 3)

Space Related Equipment, Labs & Certificates
- Solid state single photon detectors with picosecond temporal resolution, multi-wavelenghts picosecond laser systems, femtosecond event timers, UTC GPS receivers, frequency sources, multipliers and distributors
- EUV tabletop source, single quantum detectors, spectrometers and imaging detectors

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Department of Soil Science and Soil Protection

General Description
Research of the Department covers a number of topics such as soil pollution, soil degradation by sealing and erosion, soil water dynamics, digital soil mapping using laboratory analysis, remote and proximal sensing. The department possesses various laboratory instruments for wet chemistry, soil physics, and field proximal sensors.

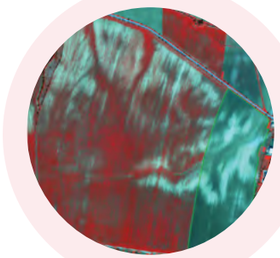
Competences & Capabilities
The Department contributes actively to the research of up-to-date problems related to soil degradation, conservation and protection. The main areas of activity related to space research include remote sensing of soils, imaging spectroscopy and VNIR field and laboratory spectroscopy.

Major Space Projects & References
The WORLDSOILS project aims to develop a pre-operational soil monitoring system to provide yearly estimations of soil orgnic carbon (SOC) at global scale, exploiting spacebased Earth observation (EO) data, leveraging large soil data archives and modelling techniques. The ambition of the WORLDSOILS Monitoring System (WOSOMS) is to achieve a system with the following characteristics:
- Modular implementation to allow future extension to additional soil indices.
- Spatial resolution 100 m x 100 m globally and 50 m x 50 m over Europe.
- Use of large time series of a minimum of 3 years.

WORLDSOILS is an application project with funding from the European Space Agency (ESA) and executed by GMV, Université Catholique de Louvain (UCL), German Aerospace Center (DLR), International Soil Reference and Information Centre (ISRIC), German Research Centre for Geosciences (GFZ), Aristotle University of Thessaloniki (AUTh), Czech University of Life Sciences Prague (CZU) and Tel-Aviv University (TAU).
Project STEROPES of the European Joint Programme SOIL (https://ejpsoil.eu/) supported by the EC Horizon 2020 programme also aims in mapping SOC using mainly Sentinel-2 data. The project involves development of methods to reduce the effect of soil moisture, texture, salinity and plant residues on the SOC prediction.

Space Related Equipment, Labs & Certificates
Spectroscopy lab: FieldSpec-3 (ASD, 350-2500 nm) with field accessories Portable X-ray fluorescence spectrometer Olympus Delta Premium

Soil moisture sensors:
- SM200 with HH2 Moisture Meter
- PR2 Soil Moisture Profile Probe with HH2 Moisture Meter
- TMS2 field soil moisture devices for continuous monitoring



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Faculty of Applied Sciences, UWB

General Description

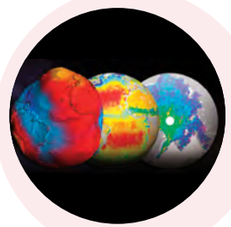
The Faculty of Applied Sciences of the University of West Bohemia in Pilsen performs fundamental and applied research in the fields of mathematics, geomatics, physics, cybernetics, information technologies, computer science and mechanical engineering. Since 2015, the faculty has been operating an R&D centre with 200 employees. The centre is equipped with state-of-the-art instrumentation and labs. There are 120 doctoral students at the faculty which participate at its research activities. The faculty cooperates with many partners within the Czech Republic and abroad.

Competences & Capabilities

The research team of the faculty is competent in the areas of development of cybernetic control systems, identification, intelligent decision-making and communication systems; advanced computer and information systems; research and modelling of heterogeneous materials; testing of mechanical and biomechanical structures; novel nanostructured thin-film materials prepared using plasma processing; qualitative and quantitative investigation of mathematical models; geodesy and geotechnologies.

Major Space Projects & References

- Towards a better understanding of the Earth's interior and geophysical exploration research "GOCE+ Geoexplore II". Project STSE GOCE+ 4000103566/11 of the European Space Agency, 2011-2015 (main contractor and coordinator of 6 European institutions). The overall objective of the project was to combine GOCE gravity gradients with heterogeneous other satellite gravity information to arrive at a combined set of gravity gradients complementing (near)-surface data sets spanning all together scales from global down to 5 km useful for various geophysical applications and demonstrate their utility to complement additional data sources (e.g., magnetic and seismic) to enhance geophysical modelling and exploration.
- GOCE – specific tasks on fine gravity field structure of the Earth. PECS Project 98056 of the European Space Agency, 2007-2011 (member of the consortium). The objective of the project was to study the Earth's gravity field as derived from combination of satellite, aerial and surface data. Various functionals of the gravity field potential (gravity acceleration, geoid undulation, gravity gradients) were studied in order to detect signatures which could be linked to past as well as recent mass changes and surface deformations.
- Advanced algorithms and techniques for resilient time provision. EXPRO project E NAVISP-EL1-056 of the European Space Agency, 2022-2024 (subcontractor). The project is devoted to the accurate and reliable estimation of the ensemble time scale based on the statistical processing of an ensemble of particular time scales (clock measurements) which are of different accuracy and providers (physical clocks, internet time protocols, etc.).



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UNIVERSITY OF WEST BOHEMIA

Faculty of Electrical Engineering, CTU in Prague

General Description

CTU is the leading technical university in the Czech Republic. The Faculty of Electrical Engineering (FEE) offers first-class education in the fields of electrical engineering, telecommunications, radio engineering, bioengineering, automation, informatics, and computer science. (https://fel.cvut.cz/en/).

Competences & Capabilities

The FEE has extensive research collaboration with top universities and research institutions worldwide. It offers innovative solutions to industrial partners, military and security institutions, including participation in space research and work for governmental agencies. The faculty offers the study programmes taught in English: Electrical Engineering, Power Engineering and Management (BSc and Ing.), Communications, Multimedia and Electronics (BSc and Ing.), Cybernetics and Robotics (BSc and Ing.), Open Informatics (BSc and Ing.), Medical electronics and bioinformatics (Ing. Only), and Aerospace Engineering (Ing. Only). The PhD study programmes cover 10 complementary areas of research (https://intranet.fel.cvut.cz/en/education/phd/obory.html). Graduates find top jobs in industry, research institutions and universities in the Czech Republic and worldwide.

Major Space Projects & References

- MIMOSA - Triaxial magnetometer for the Czech satellite.
- Design and implementation of scientific experimental device at the orbital stations Mir and the ISS, cooperation with DLR Germany.
- ESA - participation in the satellite projects in operation (ESA INTEGRAL - since 2002).
- Participation in large satellite ESA ATHENA, M mission candidates THESEUS and ESA-CAS mission SMILE.
- ESA PECS projects, direct ESA contracts.
- Cooperation with NASA – USA.
- Other contracts – e.g. tester for micro accelerometer with VZLU for the satellite project SWARM.
- Satellite navigation
- Nano and Picosatellites
- EU projects
- LVICE2 : Czech/ESA ambitions project - development of AMR and fluxgate based vector magnetometer
- EDA (European Defense Agency) NEUMANN project.
- Cooperation with the South African Space Agency SANSA on the development of SQUID and fluxgate variometers for prediction of magnetic storms.
- Educational activities
- Participation in the Hydronaut project, Little Moon City Prague and the Czech Journey to Space
- For full details please see https://fel.cvut.cz/en/research/space-activities.html

Space Related Equipment, Labs & Certificates

- Equipment for simulation of GPS and GLONASS constellations.
- Receivers of signals of navigation systems (GPS, GLONASS, Galileo, QZSS, EGNOS, MSAT, WAAS).
- Materials testing laboratories.
- Electronics and optical laboratories, devices design and fabrication.
- Equipment for magnetic testing and calibration of magnetometers.
- Anechoic chambers: acoustics and electromagnetic.
- Satellite data / image acquisition and processing.

ACADEMIA
R & D
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Responsible for space and ESA projects:
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FACULTY OF ELECTRICAL ENGINEERING CTU IN PRAGUE

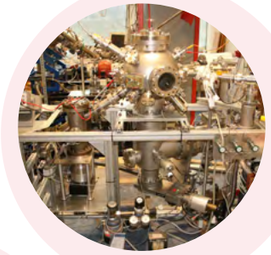
Faculty of Mathematics and Physics, Charles University

General Description
The Space Physics Laboratory (SPL) was established in 1990 but the space research activities date down to 1970. SPL participaed in numerous projects in frame of the former Intercosmos activity. From 2007, SPL participates in ESA projects dealing with processes in the interplanetary space. The participation is oriented on the computer modeling of the detector systems, design of measuring process, onboard software for device control and data processing. Manufacturing of the mechanical parts and electronics is arranged by cooperation with external partners.

Competences & Capabilities
SPL is oriented on the fundamental research of processes in space plasma and the R&D activities are strongly coupled to these topics. We are engaged in the development of ion and electron spectrometers and energetic particle detectors. This development is mainly focused on high-speed measurements in the solar wind and planetary magnetospheres.

Major Space Projects & References
- PG1 – 1970, Intercosmos 3, exploration of radiation belts.
- ESA – 1976, Intercosmos 17, energy spectrometer for magnetospheric plasma study
- MONITOR – 1980, Prognoz 8, fast monitoring of the solar wind parameters
- BIFRAM – 1985, INTERSHOCK mission, a complex plasma spectrometer for investigations of shock waves
- MONITOR-3, VDP, MPS, VDPS - 1995/96, a complex of plasma spectrometers for four satellites of the INTERBALL mission
- BMSW (Bright Monitor of the Solar Wind) – 2011, SPEKTR-R mission
- SWA (Solar Wind Plasma Analyzer) – 2020, Solar Orbiter, detector unit for plasma spectrometer, in cooperation with IRAP, France
- LEES – (Low Energy Electron Spectrometer) – Comet Interceptor, front end electronics, launch planned for 2026, in cooperation with IRAP, France

Space Related Equipment, Labs & Certificates
- Facilities for computer simulation of detector systems
- Experimental set up for investigations of space dust charging
- Facility for vacuum tests equipped with UV source and electron and ion guns



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Faculty of Mechanical Engineering, CTU in Prague

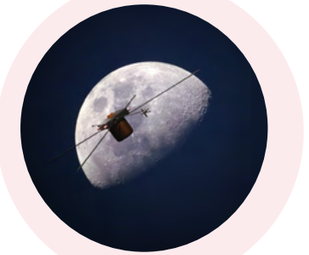
General Description
CTU in Prague is the leading technical university in the Czech Republic. The Faculty of Mechanical Engineering (FME) offers excellent education and research in the fields of materials and coatings, mechatronics, light-weighting design, production technologies including additive manufacturing, non-destructive testing using computed tomography and precise dimensional and surface texture metrology.

Competences & Capabilities
Mechanical and thermal simulations of complex structures, lightweight design of thin-walled inteligent composite structures, FEM & CFD simulation, SHM & NDT methods, laboratory & operational structural analysis, static mechanical and (thermal) vacuum testing of spacecraft components, design of space-grade composite structures, orbit modelling, novel space power system analysis, production and inspection of hi-tech parts for satellites and more. The space activities of the FME CTU stem strongly from education, with several aerospace specializations at the master-level study.

Products & Services
- Design of structures, their numerical and experimental analysis, structure health monitoring
- Additive manufacturing / CNC machining of lightweight structures
- Computed tomography and non-destructive testing, multi-material analysis, assembly inspection
- Ultra precision coordinate metrology and surface texture analysis including optical smooth surfaces
- Design and testing of miniature instruments and electronics

Major Space Projects & References
- Lunar Vicinity Complex Environmental Explorer (LVICE2): within Czech/ESA ambitions projects
- Preliminary European Reckon on Nuclear Electric Propulsion for Space Applications (RocketRoll): ESA study
- CZARM (CZech Advanced Robotic SysteM for Servicing, Exploration and Resources Exploitation), participation in the solution.

Space Related Equipment, Labs & Certificates
- Thermal vacuum chambers ($<10^{-3}$ Pa, 28 l/140 l, -150(-190)°C to +130°C)
- Thermal chamber with controlled humidity
- Centrifuge (payload >5kg, 15g)
- GE Additive Concept Laser M2 printer
- Zeiss Metrotom 1500, large computed tomograph
- CNC machining including 5-axis grinding of ceramics
- Engine testing facility



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Faculty of Science, Palacký University Olomouc

General Description

Palacký University in Olomouc is a university with long-standing tradition. Founded in the 16th century, it is the oldest university in Moravia and the second-oldest university in the Czech Republic. Today it is a modern higher education facility with a wide range of study programs and copious scientific and research activities. Almost 22 000 students are enrolled at its 8 faculties. Palacký University is one of the very top Czech universities, and ranks among the best universities of the world, according to international rankings.

Competences & Capabilities

The space-related research is being carried out at the Faculty of Science, which is a research-oriented faculty that offers Bachelor's, Master's, and Doctoral studies in various branches of Mathematics, Computer Science, Physics, Chemistry, Biology and Ecology, Earth Sciences. Since 2009, the majority of its worksites have been located in a newly constructed building close to the city center. Thanks to European funding and success in national grant competitions the Faculty managed to build modern facilities with state-ofthe-art equipment. Currently, the Faculty has about 4 000 students.

The Faculty of Science has a lot of creative potential and it can be proud of its abundant profile of original scientific results, which push the limits of our findings, as well as of its multi-lateral international cooperation. Some of our research teams rank significantly on the international scale as well. According to the Methodology of the Research, Development, and Innovation Board, in 2011, the Faculty of Science ranked fifth among all the faculties and scientific institutions in the Czech Republic. According to a study conducted by the National Economic Institute in August 2012, the Faculty is the most efficient scientific worksite in the field of optics in the entire Czech Republic.

Major Space Projects & References

QUARTZ : ESA Scylight project aimed at development of satellite-based quantum key distribution system and service architecture, including core technologies and ground end-to-end testing. Project duration is 2018-2022, Faculty of Science of Palacky University is a part of an international consortium led by SES. The team of Palacky University is responsible for information-theoretical security analysis of quantum cryptography protocol to be developed and implemented within the project.

Super-Resolution via Spatial Mode Demultiplexing and its Applicability to Observational Astronomy: ESA Ariadna project realized in 2018. The team of Palacky University explored the concept of indirect super resolution imaging based on spatial mode demultiplexing, performed theoretical and experimental assessments of the method and studied its applicability to observational astronomy, with special reference to binary star systems and exoplanet detection.

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Faculty of Science

Global Change Research Institute CAS (CzechGlobe)

General Description

Global Change Research Institute of the Czech Academy of Sciences (CzechGlobe) aims to better understand the impact of global change on the atmosphere, biosphere and societal processes – the causes, impacts, adaptation and mitigation using the state-of-the-art instruments, techniques, co-creation approach and knowledge transfer.

Competences & Capabilities

We use various Earth observation data to assess spatio-temporal changes in natural and managed ecosystems. By combining in-situ, airborne (using our in-house Flying Laboratory of Imaging Systems) and satellite (e.g. Copernicus services) observations, we develop scaling schemes and methods for quantitative assessment of biochemical and structural properties of plants, estimation of plant biomass and carbon stocks, crop yields, evapotranspiration, soil moisture, drought stress, and analysis of urban thermal regime. We have also started to develop methods for detecting methane emissions using airborne hyperspectral data.

Products & Services

- www.intersucho.cz
- www.klimatickazmena.cz
- www.firerisk.cz
- www.agrorisk.cz
- https://mapserver.czechglobe.cz
- https://olc.czechglobe.cz/en/flis-2/

Major Space Projects & References

CzechGlobe is currently involved in following ESA funded activities:

- CAMAS – Technical Assistance for a Czech Atmospheric Multi-Purpose Airborne System
- Forest Digital Twin Component (Forest DTC)
- Copernicus Hyperspectral Imaging Mission for the Environment (CHIME) L2 Algorithm and Processor Prototyping and Development
- Technical Assistance for the CAIRT Experiment by means of a Balloon-borne Limb sounding Campaign in Canada (CAIRTEX)
- 4DHydrology – Hyper Resolution EXPRO+
- Since 2018 the CzechGlobe's airborne facility has been regularly involved in international campaigns supporting the future ESA Earth Explorer mission FLEX (Fluorescence Explorer).

Space Related Equipment, Labs & Certificates

- Photogrammetric aircraft Cessna 208B Grand Caravan
- Airborne hyperspectral sensors operating in visible, near, shortwave and thermal infrared (CASI, TASI, SASI)
- Certification for HyPlant, a high-performance imaging spectroradiometer for vegetation fluorescence mapping
- Airborne and terrestrial laser scanners
- Laboratory and field spectroscopy equipment
- Laboratory and field instruments for measuring plant ecophysiological properties and processes
- CzeCos research infrastructure (http://www.czecos.cz/)
- EN ISO 90001:2016 and EN ISO 14001:2016

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Global Change Research Institute CAS (CzechGlobe)

Responsible for space and ESA projects:

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CzechGlobe

HiLASE Centre

General Description
Located near Prague, HiLASE Centre (part of the Institute of Physics of the Czech Academy of Sciences) develops advanced laser sources and technologies for industrial and cosmic applications, with a focus on laser-matter interaction, component qualification, and emerging space technologies.

Competences & Capabilities
The Centre specializes in diode-pumped solid-state lasers (DPSSL), laser-induced damage threshold (LIDT) testing, and advanced laser material processing. Its portfolio includes prototyping and feasibility studies of technologies, as well as laser optics design, assembly, and simulations. HiLASE supports system integration, component qualification under ECSS standards, and testing of optical components in extreme environments.

Products & Services
- High-power solid-state laser development
- LIDT and environmental testing (ISO 21254, ECSS)
- Laser exposure and fiber testing under vacuum, thermal and radiation stress
- Laser Shock Peening and material stress diagnostics
- Laser Micromachining for functional material surfaces
- Technical consultancy for laser-based space systems
- Open access to research infrastructure within global access networks

Major Space Projects & References
- **ATLAS | Advanced Technologies for Laser Applications in Space** (2025–2029): communication, navigation, Earth observation, debris removal | 101186678
- **LASER-PRO | Excellent Laser Technologies for the Sustainable Prosperity of Europe** (2024–2027): semiconductors, space, and biomedicine | 101186838
- **LasApp | Breakthrough Laser Technologies for Smart Manufacturing, Space and Bio-Tech Applications** (2023–2028) | CZ.02.01.01/00/22_008/0004573
- **FREYA Hyperspec | NCK NaCCAS** (2023–2026): Hyperspectral CubeSat system | T002000009/07
- **2µm Laser for ESA OSIP** | (2022–2024): Optical communication source | 4000138397
- **LaSPAM** | (2023–2026): LSP for aerospace-grade 3D-printed parts

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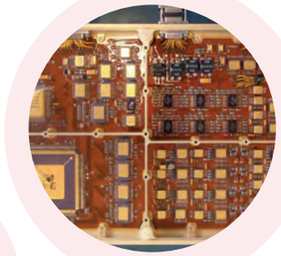
Institute of Atmospheric Physics
of the Czech Academy of Sciences (IAP)

General Description
Institute of Atmospheric Physics of the Czech Academy of Sciences (IAP) is a public research institution oriented toward research of the atmosphere, ionosphere and magnetosphere of the Earth, ionospheres and magnetospheres of planets of the Solar system, and of the solar wind. Areas of expertise are related to space research in the domains of space plasma physics and space weather, including design and development of scientific instruments, in-situ experimental measurements, data analysis, theory, and numerical simulations.

Major Space Projects & References
- The Solar Orbiter probe (ESA): Development and implementation of the Time Domain Sampler module for Radio and Plasma Wave instrument.
- JUICE space probe (ESA): Wave analyzer and onboard processing module for low-frequency electromagnetic waves at Jupiter and its icy moons. Co-Principal Investigator of the Radio and Plasma Waves Instrument.
- TARANIS satellite (CNES): Development and implementation of a fast wave analyzer for the IME-HF instrument.
- ExoMars 2022 probe (ESA): Principal Investigator of the Wave Analyzer Module.
- Comet Interceptor Probe (ESA): Development and implementation of the Dust Analyzer & Processing Unit (DAPU).
- Vigil space weather mission (ESA): Development and implementation of the Data Processing Unit.
- Athena X-ray telescope (ESA): contribution to the hardware electronics of the X-ray Integral Field Unit.
- LISA gravitational wave mission (ESA): contribution to the hardware electronics of the Fibre Switch Unit Actuator
- Analysis of data from instruments where IAP personnel participate as Co-Investigators or collaborators in scientific teams (ESA/Cluster, NASA/Polar, NASA/Stereo, CNES/DEMETER, ESA/Double Star, NASA/Themis, NASA/Van Allen Probes, NASA/Cassini, NASA/Juno, JAXA/Arase).
- Spacecraft telemetry reception at the Panska Ves station.
- Ground-based measurements related to space research: A digital ionosonde, continuous Doppler sounding systems, broadband electromagnetic measurements of lightning discharges.

Space Related Equipment, Labs & Certificates
- Electronics laboratory for development of spacecraft
- instrumentation;
- Vibration testing device;
- Thermal chamber;
- Vacuum chamber;
- ISO 7 clean room with thermal chamber;
- Faraday cage;
- Computer equipment including data storage.



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Institute of Botany (IBOT), CAS

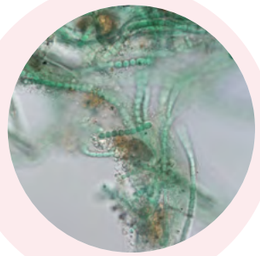
General Description
The Institute of Botany carries out research at the level of species, populations, and plant communities. It specifically focuses on biodiversity and evolutionary trends among plants, the invasive behaviour of species, responses of plants and vegetation to environmental changes and the coexistence of various species in the ecosystem. Our applied research focuses on biotechnology, biofuels, bioindication and revitalisation.

Competences & Capabilities
Space biology
- evaluation of the physiological status of photosynthetic (micro)organisms
- studies of adaptation/acclimatisation mechanisms to various stresses

Regenerative life support systems
- algal mass cultivations
- mycorrhizal symbioses
- growth characteristics and primary production measurements
- algal assays and cyanotoxine detection
- bioremediation and revitalisation

Astrobiology
- isolation, cultivation, and characterisation of extremophilic phototrophic (micro)organisms
- detection of limits of survival
- studies of adaptation/acclimatisation mechanisms to various stresses
- in situ ecophysiological measurements in extreme environments
- biological samples on student stratospheric balloons

Major Space Projects & References
- ArtEMISS - Arthrospira sp. gene Expression and mathematical Modelling on cultures grown in the International Space Station
- CAREX – Coordination Action for Research Activities on Life in Extreme Environments Evaluation of effects of radiation on algae and cyanobacteria



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INSTITUTE OF BOTANY CAS

Institute of Experimental and Applied Physics, CTU in Prague

General Description
The IEAP is a research institute of the CTU in Prague developing radiation spectrometers with over 10 years of space heritage.

Competences & Capabilities
Main area of activity is R&D of semiconductor detectors and advanced instrumentation for radiation detection, novel methods of radiation imaging and spectroscopy and their applications in different fields such as medical imaging, material sciences and space. The space applications include space weather monitoring, dosimetry and surface mapping of water deposits on planetary bodies. We also provide certified gamma-ray and neutron sources for calibration of space detectors.

Products & Services
- Miniature low-power radiation monitor HardPix for high-resolution detection, visualization and characterization of mixed radiation fields in space. Provides particle species, flux, energy spectra and doserate. Has flight heritage.
- Semiconductor low-power neutron spectrometers for localization of subsurface hydrogen in lunar regolith onboard rovers.
- Testing and calibration of Gamma-ray and Neutron detectors/payloads.

Major Space Projects & References
- Miniature dosimeters onboard the ISS, visualization and detailed dosimetry of radiation inside the station. Five units deployed in 2012.
- SATRAM radiation monitor onboard ESA Proba-V, in operation since 2013 for detection and monitoring of the mixed radiation field in LEO. Cooperation with BD Sensors. https://satram.utef.cvut.cz/
- Imaging detector for X-ray telescope onboard the Czech VZLUSAT-1 launched in 2017.
- RISEPix radiation monitor onboard the Japanese RISESAT launched in 2019.
- 2 HardPix radiation monitors onboard D-Orbit ION satellites launched in 2023 and 2025.
- Two HardPix radiation monitors as part of ESA ERSA onboard the Lunar Gateway. Planned launch in 2027.

Space Related Equipment, Labs & Certificates
- Accelerator VdG (p, d, ESA-compliant source of tagged neutrons).
- 2 ESA-compliant sources for testing of gamma-ray sensitive devices/payloads.
- Central detection and analytical lab equipped with HPGe detectors, Si, GaAs and CdTe pixel detectors.

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IEAP

IT4Innovations National Supercomputing Center

General Description

IT4Innovations National Supercomputing Center at VSB – Technical University of Ostrava is a leading research, development, and innovation centre active in the fields of HPC, HPDA, QA, and AI and their application to other scientific fields, industry, and society. IT4Innovations operates the most powerful supercomputing systems in Czechia and constitutes e-INFRA CZ, a strategic research infrastructure of Czechia.

Competences & Capabilities

The key research areas of IT4Innovations include big data processing and analysis, machine learning, development of parallel scalable algorithms and algorithms for quantum computers and simulators, solutions to computationally demanding engineering problems, advanced visualisation, virtual reality, modelling for nanotechnologies, and material design.

Products & Services

- Rental of IT4Innovations Computational Resources
- Computationally Intensive Modelling and Simulations
- Advanced Data Analysis and Simulations
- Rendering and Visualization of Scientific Data

Major Space Projects & References

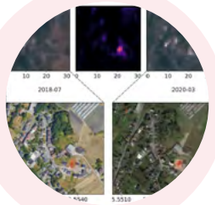
- **The Urban Thematic Exploitation (U-TEP)** is a web-based and open platform that integrates state-of-the-art processing, analysis and visualisation services and enables any interested user to exploit EO data easily and without data download complications.
- **The BLENDED project** focused on urban expansion monitoring for three European cities using time-series multispectral and SAR data over a three-decade lifespan.
- **The AIOPEN project** will create a generic platform to support the AI model development lifecycle and develop algorithms for forest monitoring and urban change detection using the Transformer architecture.
- Within the scope of **Czech Copernicus Collaborative Ground Segment** we are developing a system for effective nationwide processing of Sentinel-1 satellite data by interferometric and polarimetric techniques for geodetic, geologic or forestry applications.

Space Related Equipment, Labs & Certificates

IT4Innovations runs supercomputers Karolina and Barbora, and VLQ quantum computer:

- Karolina (15.7 PFlop/s),
- Barbora (849 TFlop/s),
- VLQ quantum computer (24 qubits in star-shaped topology).

IT4Innovations is an Information Security Management System certificate holder according to the international ISO/IEC 27001:2013 (Czech version: ČSN ISO/IEC 27001:2014) standard.



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VSB TECHNICAL UNIVERSITY OF OSTRAVA | IT4INNOVATIONS NATIONAL SUPERCOMPUTING CENTER

JIC

General Description

JIC is a leading public innovation agency in the Czech Republic, situated in the heart of Europe within the #brnoregion. Its primary mission is to support the foundation and growth of innovative enterprises. Annually, JIC provides support to approximately 100 early-stage and mature companies.

Competences & Capabilities

JIC is cultivating the space industry ecosystem in the South Moravian region. A significant milestone was the opening of the ESA BIC branch in 2018. Since then, JIC has extended its support to over 15 space industry startups. Starting from October 2023, JIC has been engaged in the ESA Spectrum Sharing Makerspace project. This project is aimed at facilitating the prototyping and validation of early-stage innovative concepts in the field of spectrum sharing technologies. These technologies should enable more efficient use of satellite spectrum and an improved sharing with terrestrial systems.
Startups supported by ESA BIC Brno branch:

MapTiler s.r.o.
World from Space s.r.o.
Skymaps s.r.o.
Spacemanic CZ s.r.o.
Entrant s.r.o.
Vrgineers, Inc.
Zaitra s.r.o.
GROUNDCOM.SPACE s.r.o.
mobisOne s.r.o.
FlyinDiamonds s.r.o.
AdvaScope s.r.o.
VisionCraft s.r.o.
SPACERACE s.r.o.
Betrian a.s.
3L Robotics, s.r.o.
AerialComm s.r.o.

Products & Services

- Business consulting and advisory services
- Access to finance service
- Networking and brokering

Major Space Projects & References

- ESA BIC Czech Republic: Operation of ESA BIC Brno branch
- ESA Spectrum Sharing Makerspace: Project supporting start-ups, university spin-offs and enterprises in prototyping, including technical and commercial validation. JIC serves as the prime contractor, with FEEC VUT as a subcontractor. Contract No. 4000141041/23/UK/AL

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JIC

Kleť Observatory

General Description

The Kleť Observatory is a research institution belonging to few natural science centers of Southern Bohemia in the Czech Republic, supported by the South Bohemian Region and various grants. The observatory is situated south of the top of Klet mountain (at altitude of 1070 m), southwest from the town of České Budějovice. There are one hundred and fifty clear nights per year with a good astronomical seeing on the average, as shows data from photographic observations of minor planets and comets since 1968. The Headquarter of Kleť Observatory is located at the Observatory and Planetarium in České Budějovice.

Competences & Capabilities

Ground segment for Space Safety Programme

Near Earth Objects (NEO)

- Confirmatory observations of newly discovered NEO candidates, especially fainter and fast moving objects as well as NEO candidates having larger ephemeris uncertainty (both lim. mag. about V = 22 mag. and larger FOV are benefits of 1-m KLENOT Telescope)
- Recoveries of NEOs in the second opposition
- Follow-up astrometry of poorly observed NEOs - Virtual Impactors" and PHAs, target of space missions or radar targets
- Cometary features. Analysis of possible cometary activity of newly discovered bodies.
- Search for new asteroids as a by-product. Educational and public outreach activities in related field (asteroid hazard, space safety)

Major Space Projects & References

Near Earth Object follow-up astrometry as the Cooperating Sensor of ESA-SSA-NEO segment (2014-2017 ESA contract). Observational support from collaborating observatories with DEIMOS SPACE S.L.U, Madrid, Spain as the main contractor with ESA - further sub-contractors are from Germany and Spain (since 2019).

References

- Minor Planet Circulars(ISSN 0736-6884) and Minor Planet Electronic Circulars (ISSN 1523-6714), (2013-2023)
- Tichá, J., Tichý, M.,Honková, M. KLET OBSERVATORY PREPAREDNESS AND PLANS FOR PLANETARY DEFENCE (Proceedings 1st NEO and Debris Detection Conference, 22 January 2019 - 24 January 2019, Darmstadt, Germany, published by ESA Space Safety Programme Office)
- Tichý, M., Tichá, J.: KLENOT Project in the framework of ESA-SSA NEO Programme (Asteroids Comets Meteors 2017, Montevideo, Uruguay, 2017)
- Tichá, J., Tichý, M., Kocer, M.: KLENOT NEO FOLLOW-UP PROGRAM IN EUROPEAN FRAMEWORK
- (2015 IAA Planetary Defense Conference, Frascati, Italy, 2015)

Space Related Equipment, Labs & Certificates

- 1.06-m KLENOT telescope with 4-lenses corrector to obtain a plane FOV 0.63 x 0.63 degrees, computer controlled equatoreal mount, equipped with CCD camera
- FLI ProLine 230. Limiting magnitude of mV=22.0mag.
- The hardware and software equipment for KLENOT project consists of local network, servers and workstations for operating CCD camera, instantaneous visual detection, image processing, data reduction, identification of moving objects, ephemeris calculations and orbit computations.

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Mendel University in Brno

General Description

Mendel University in Brno (MENDELU) is a traditional university focused on agronomy, forestry, wood science, agricultural technologies, food technology, and regional development. The university plays a significant role in applied research, particularly in fields related to agriculture, forestry, and environmental sciences.

Competences & Capabilities

MENDELU's research facilities and university enterprises support a broad range of research and development projects. These include biotechnologies and plant cultivation, animal husbandry and food technologies, environmental remediation, nanotechnologies, wood science, biomaterials, and space technologies. The university carries out innovative research with international knowledge transfer and application.

Key research areas include:

- Effects of stress factors on plants, algae, and cyanobacteria
- Equipment and technology for the cultivation and transfer of microalgae and cyanobacteria in space
- Soilless plant cultivation and its use in space research
- Modification of wood and wood-based materials for space engineering
- Biodegradable composites from agricultural lignocellulosic biomass and fungal mycelium for insulation
- Soil and water remediation, waste treatment, and recycling
- Ecology of non-tuberculous mycobacteria and Legionella in aquatic environments (biofilms and water)
- Human stress measurement and detection of compounds using novel UV fluorescence methods
- Use of satellite remote sensing data in agronomy, precision farming, drought monitoring, forestry, regional development, and migration studies

Products & Services

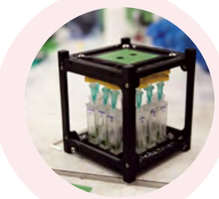
- Research & development, space-related devices, technologies for microalgae and plant cultivation, space farming
- Development of cultivation systems and advanced greenhouse technologies
- Culture-independent detection systems for potentially pathogenic bacteria in water and food

Major Space Projects & References

- **TAVAP** – Timing and Variable Rate Application (MENDELU as partner)
- **CIMER Mission** – MIBICO experiment, Yspace VUT Brno, ESA Fly Your Satellite
- **FURPLAST** – Furcellaran: an innovative biopolymer for bio-based plastic foils (ATCZ00042, 2025–2027)
- **H2020: GREENPATROL** – Galileo-enhanced pest detection with autonomous robots in greenhouses (2017–2020)
- **H2020: MySustainableForest** – Satellite-based tools for sustainable forestry (2017–2020)
- **GreenPea Project** – Cubesat/Woodsat for LEO orbit (2023–2030)

Space Related Equipment, Labs & Certificates

- Eye-tracking laboratory
- Spatial Hub – laboratory for spatial data processing
- Molecular bacteriology laboratory for diagnostics of potentially pathogenic bacteria



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Mendel University in Brno

Nuclear Physics Institute of the CAS

General Description
Nuclear Physics Institute of the CAS, public research institution, conducts research in a broad field of nuclear physics, experimental as well as theoretical. https://www.ujf.cas.cz

Competences & Capabilities
Research related to space focuses mainly on simulation and measurements of cosmic radiation at high-mountain observatories, onboard aircraft, spacecraft, and satellites, application and development of active and passive detectors, radiation protection, individual monitoring of aircraft crew.

The largest experimental facilities of NPI are cyclotrons U-120M and TR-24, electrostatic accelerator Tandetron TN 4130MC, cyclic electron accelerator microtron MT25, and 300 kV accelerator mass spectrometer MILEA.

Products & Services
NPI provides services using beams of gamma rays, neutrons and charged particles, including irradiation services for the company RadioMedic Ltd. (production of radiopharmaceuticals), testing of radiation resistance of electronics and components, material modifications with ion beams, calibrations of dosimetry systems for radiotherapy hospital departments, dosimetry audits of therapeutic irradiation systems, calculations of level of irradiation for aircraft crews, radiocarbon dating of samples, monitoring activities of 14CO2 and 85Kr in the air.

Major Space Projects & References
- DOSIS 3D (Dose Distribution Inside the International Space Station - 3D)
- MARE (Matroshka AstroRad Radiation Experiment)
- SOCRAT-R (3U CubeSat for monitoring of radiation environment and Space Weather at LEO)
- LVICE2 (Lunar Vicinity Complex Environmental Explorer, Czech ambitious missions)
- CRREAT (Research Center of Cosmic Rays and Radiation Events in the Atmosphere)
- RAMAT (Radiation resistant materials based on organic polymers for medical and space applications)
- BICZEPS (Advanced dosimetry for biological systems in near-earth space)
- ESADOS (ESA Support for Aircrew Dosimetry Services)

Space Related Equipment Labs & certificates
- Passive detectors (various types of thermoluminescent and plastic nuclear track detectors) for measurements of integral dosimetric characteristics onboard International Space Station and return satellites
- Active detectors (Si-diode, LET spectrometer based on plastic scintillator and pixel detectors) for continuous monitoring of cosmic radiation
- Individual monitoring of aircraft crew – commercial service for Czech and Slovakian aircraft companies

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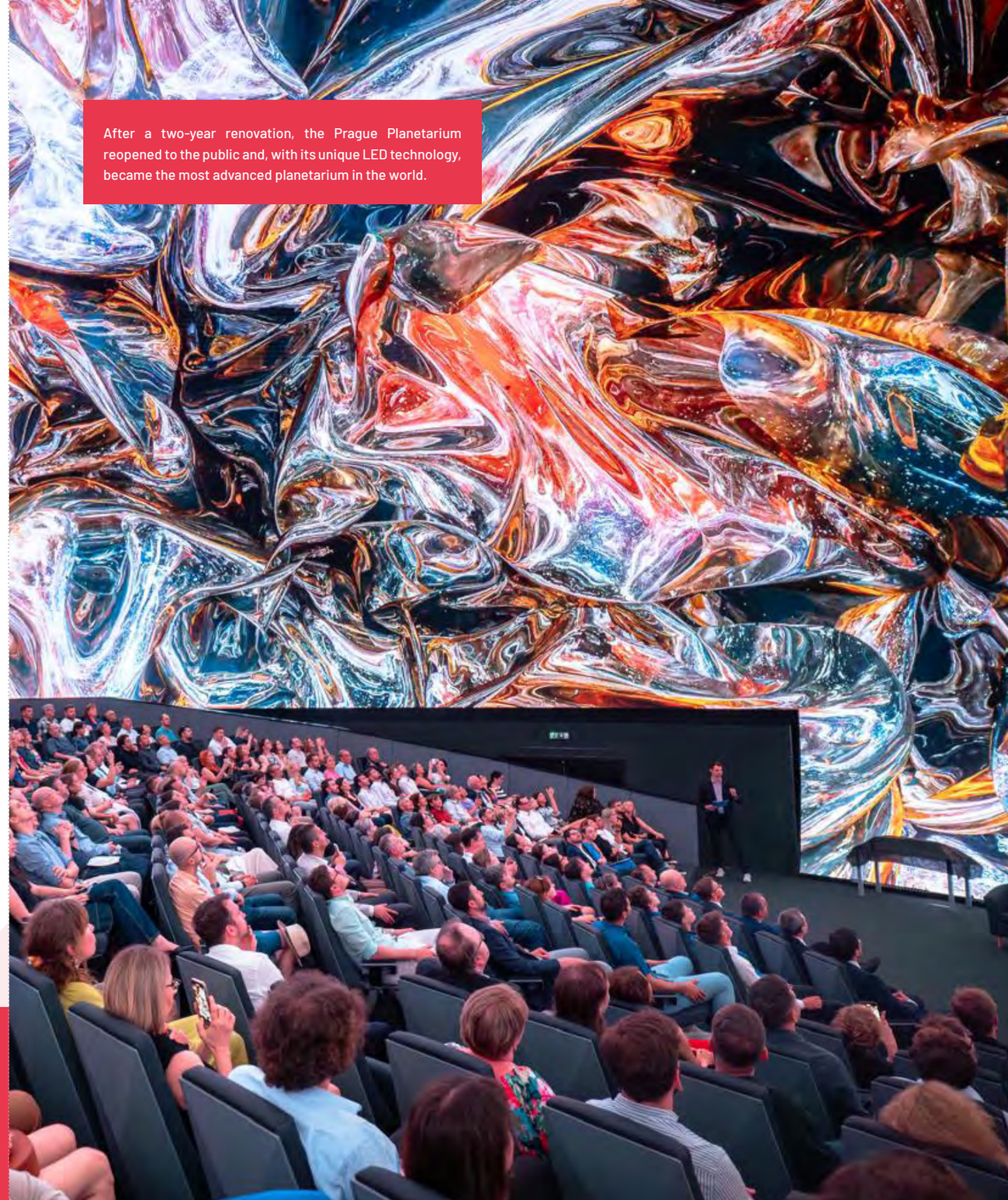
ÚJF
NUCLEAR PHYSICS INSTITUTE CAS

After a two-year renovation, the Prague Planetarium reopened to the public and, with its unique LED technology, became the most advanced planetarium in the world.



Planetum – Observatory and Planetarium Prague

General Description

Planetum is a brand of the Observatory and Planetarium of the Capital City of Prague. It brings together three key institutions dedicated to space education and outreach: Štefánik Observatory, Ďáblice Observatory, and the Prague Planetarium in Stromovka Park. These facilities offer a unique blend of astronomical observation, immersive education, and engaging entertainment for all age groups.

Competences & Capabilities

Planetum serves as a gateway to the cosmos for the general public, students, and professionals alike. Visitors can explore the night sky through powerful telescopes at the observatories or journey through space in the Prague Planetarium—one of the most technologically advanced planetariums in the world.
Programs range from family-friendly fairy tales about the stars to cutting-edge scientific documentaries. The venues also host interactive exhibitions where visitors can step into the cockpit of a space shuttle or walk around a replica of the Apollo lunar lander. These immersive experiences are designed to ignite curiosity and inspire the next generation of scientists and engineers.
Planetum is not only a pioneer in public engagement but also a key player in educational innovation, currently leading the national office of the **European Space Education Resource Office (ESERO) Czech Republic** on behalf of the European Space Agency since April 2024.

Products & Services

- Public astronomical observations (day and night)
- Full-dome planetarium shows (fiction, educational, scientific)
- Interactive exhibitions on space and cosmonautics
- School programs and guided group visits
- Special events and live shows
- Space-themed workshops and outreach activities

Major Space Projects & References

- **Planetum-1 Satellite:** The world's first purely educational satellite, launched into orbit aboard SpaceX's Falcon 9 on May 25, 2022. Its mission ended on November 29, 2024. The satellite operations center is open to visitors at the planetarium.
- **ESERO Czech Republic:** Since April 2024, Planetum has served as the lead coordinator of the ESA educational office in the Czech Republic.

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planetum

The Best Planetarium in the World

Following a two-year renovation, the Prague Planetarium reopened in 2024 as Europe's **first fully digital LED planetarium.** Featuring the **world's largest LED dome** of its kind, it delivers breathtaking visual fidelity with nearly 45 million LEDs across more than 12,000 panels. The system boasts up to 100 times the brightness of traditional projectors, creating stunning contrast and a unique illusion of 3D—even on a 2D surface.

With its groundbreaking LED projection system, **the Prague Planetarium stands as the most advanced facility of its kind worldwide.** It combines cutting-edge technology with engaging content to deliver an unmatched space experience.

Research Institute of Geodesy, Topography and Cartography

General Description
Research Institute of Geodesy, Topography and Cartography (VÚGTK, v.v.i.) is a public research institution established by the Czech Office of Surveying, Mapping and Cadastre (ČÚZK). The institute is responsible for basic and applied research in geodesy, surveying, mapping and cartography and consists of four research departments and the Geodetic observatory Pecný.

Competences & Capabilities
Space-related research is focused to the domains:
- GNSS (Global Navigation Satellite System) – data collection, dissemination and quality control, precise analyses, performance monitoring, products generation (satellite orbits and clocks, Earth rotation parameters, receiver position, atmospheric delays, signal-in-space monitoring, key-performance indicators)
- DORIS (Détermination d'Orbite et Radiopositionnement Intégré par Satellite) – precise analysis of satellite orbits and positions of global receiver for the International Terrestrial Reference Frame
- Gravity field observation and modelling – absolute and relative gravity measurements and data analyses, gravity field modelling, LEO gravity field missions and satellite altimetry analyses
- Interdisciplinary research for meteorology and climatology, geophysics and geodynamics, metrology, kinematic positioning etc.

Products & Services
- contributions to international services of the International Association of Geodesy (IAG): International GNSS Service (IGS), International DORIS Service (IDS), European Reference Frame (EUREF), International Gravimetric Bureau (BGI), International Gravity Field Service (IGFS), International Geodynamics and Earth Tide Service (IGETS)
- development of precise models, analyses, software and systems
- absolute gravity observations and calibrations

Major Space Projects & References
- Galileo and EGNOS Monitoring of Performances (EUSPA)
- Terrestrial Inter-plate Lithospheric Deformation of Earth (ESA)
- Development of regional augmentation tropospheric model for GNSS positioning (ESA)
- Assessment techniques of Tropospheric Effects for Local Augmentation Systems (ESA)

Space Related Equipment, Labs & Certificates
- GNSS receivers, atomic Cs-clock, passive H-maser
- absolute, superconducting and spring gravimeters
- data and analysis services for GNSS & DORIS
- 3D positioning national reference standard
- calibrations and measurements in absolute gravimetry

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Teplice Observatory

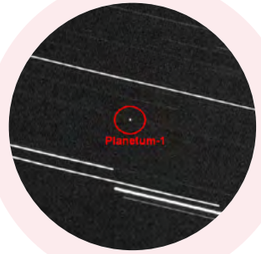
General Description
Teplice Observatory is a part of the Observatory and Planetarium in Teplice (OPT). OPT is a non-profit organisation funded by the Usti Region and is primarily focused on popularisation of astronomy and science. The observatory is located atop of the Sand Hill situated in the southeast part of the North-Bohemian town Teplice with a moderate light pollution and almost unobstructed view of the whole sky.

Competences & Capabilities
In research, the Teplice Observatory is focused on observations of artificial satellites and space debris, astrometry of minor bodies in the Solar System and occultations of stars by asteroids. The Southeast dome of the observatory is equipped with the Sand Hill Optical Telescope (SHOT). The SHOT sensor is dedicated to the ESA SST activities based mainly on the ESA contracts and it contributes to the EU SST Partnership programme.

Products & Services
- Astrometry and photometry of artificial satellites and space debris (all orbits including GEO, MEO, LEO, HEO)

Major Space Projects & References
- SSA P2-SST-X: Support Observations and Sensor Qualification
- SSA P3-SST-III: Robotic Telescopes Demonstration
- SSA P3-SST-XIX SST: Sensor Data Acquisition for Endurance Tests and Validation - Phase 2
- SSA S2P S1-SC-09: Support of the development of sensors, joint test and operation of a European Optical Network
- EUSST2023-26GA – Financing of the provision of SST services and the upgrade of SST assets by the EU SST Partnership

Space Related Equipment, Labs & Certificates
- The Sand Hill Optical Telescope (SHOT sensor): 0.60-m f/3.3 astrograph, direct-drive fork mount with high precision tracking, scientific CMOS camera Kepler FL4040, the resulting FOV 64 x 64 arcminutes (1.1 square degree), GPS E 13 50 48.2, N 50 38 18.0, 275 m MSL.



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Hvězdárna a planetárium Teplice

TOPTEC | Research Centre for Special Optics and Optoelectronic Systems
Institute of Plasma Physics of the CAS

General Description

The TOPTEC Research Centre for Special Optics and Optoelectronic Systems specializes in the R&D of unique, application-specific systems utilizing spherical, aspheric, and freeform optics from both metallic and glass materials. The team focuses on the development of ultra-precise mechanical components for optical systems, the advancement of thin film technologies, and the innovation of measurement methods, all aimed at scientific and industrial applications.

Competences & Capabilities

Combining extensive research experience with cutting-edge technologies, the TOPTEC Research Centre excels in optomechanical design, simulation, construction, manufacturing, and the measurement of specialized optics. This expertise allows TOPTEC to offer comprehensive R&D solutions in the field of optics. Each year, TOPTEC researchers undertake numerous contractual research projects for commercial enterprises and scientific institutions across diverse fields, including aerospace, automotive, astronomy, biomedicine, and engineering.

Products & Services

- Design and realization of unique optical elements and advanced optical systems;
- R&D and application of precise measurement techniques;
- Development of deposition methods and processes;
- Consultation and expertise in optics, optoelectronics, laser applications, and fine mechanics.

Major Space Projects & References

- Optical design optimization of SBOC (Space-Based Optical Component)
- Optical technology development of TRUTHS (The Traceable Radiometry Underpinning Terrestrial- and Helio-Studies)
- Optical design of the telescope (TIRI)
- Optical elements of FLORIS telescope for FLEX (FLuorescence EXplorer) mission
- Optical setup of ARIEL (Atmospheric Remote-sensing Infrared Exoplanet Large-survey)
- Optical parts of the Coronagraph METIS on the Solar Orbiter Mission
- Optics of the Coronagraph ASPIICS on the Proba-3 Mission

Space Related Equipment, Labs & Certificates

- Laboratories complying with standards for optical development incl. a clean room;
- A metrology lab with a wide range of measuring instruments, e.g. aspheric interferometer, 3D stitching profilometer, etc.;
- Software tools for design, numerical simulations, and topological optimization.

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toptec

Student Initiatives

Brno Mars Rover

General Description
Brno Mars Rover is a student association of Brno University of Technology, which deals with robotics with space theme. Its current goal is to prepare a model of a 'Mars rover' - a robot designed to perform simulated missions on the surface of other space bodies. This robot is currently being developed for participation in the international European Rover Challenge competition organized by the European Space Foundation in Poland.

Emphasis is particularly placed on the ability to be fully autonomous in certain aspects of the mission, the ability to manipulate objects in the rover's vicinity using the robotic arm or to extract material from a depth of several tens of centimetres using the drilling submodule.

Students from several faculties of the university are actively involved in the association, but primarily from the Faculty of Electrical Engineering and Communication Technology, the Faculty of Mechanical Engineering and the Faculty of Information Technology. The student society has its facilities and laboratories in the Robotics and Artificial Intelligence Group, which is headed by Prof. Ing. Luděk Žalud, Ph.D.

Brno Mars Rover actively presents itself as a student association of BUT.
Author of photo: Mr Václav Koníček

Chassis testing also takes place in the challenging terrain around the Faculty of Electrical Engineering and Communication Technology

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www.brnomarsrover.cz

Czech Rocket Society

General Description
Czech Rocket Society (CRS) is the first student organization in the Czech Republic focused on rocketry and space science. It brings together dozens of students from both universities and high schools across the country.

Competences & Capabilities
CRS provides students with hands-on experience in designing, manufacturing, and testing rockets and propulsion systems. The organization develops both solid and liquid propulsion, structural components, parachute recovery systems, and CanSat payload integration. CRS also organizes the Czech Rocket Challenge — the country's largest rocketry competition for high school and university students.

By combining academic knowledge with real-world engineering and manufacturing practices, CRS bridges the gap between theoretical education and practical application. The society fosters interdisciplinary collaboration and prepares future engineers for careers in the aerospace sector.

Major Space Projects & References
- Sherpa rocket – CanSat launch vehicle (2.5 m, 180 m/s)
- Foglar rocket – multipurpose vehicle (3 m) – currently under development
- Czech Rocket Challenge – national student rocket competition

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www.czechrockets.com

The LASAR Team (DoSpace association)

General Description
LASAR is a team of Czech high school and university students tackling one of the most pressing challenges in space today—orbital debris and satellite failures.

Competences & Capabilities
We are developing system to solve two critical orbital challenges: safe deorbiting of space debris and rebooting non-communicating nanosatellites using ground based laser. The laser beam will induce ablation on debris, reducing its velocity and ensuring controlled atmospheric reentry.
Additionally, a precise pulse to a satellite's solar panel can trigger a software reboot, restoring function without costly replacement. We also emphasize science education and prepare future satellite operators through hands-on space missions and technical training.

Major Space Projects & References
- Winners of the Conrad Challenge (Aerospace & Aviation), Houston
- Winners of the Moonshot Awards, New York
- Launched our own satellite LASARsat (1U CubeSat) aboard SpaceX Falcon 9, 2024
- Cooperation with top institutions such as HiLASE, Spacemanic, VZLÚ, SkyFox Labs, and TechSoft

Space Related Equipment Labs & certificates
- Laser testing at Teplice Observatory
- Instruments aboard LASARsat: photodiodes, retroreflectors, plasma detector, Earthcam, LEDs, dual dosimeters
- Collaboration with certified Czech research institutions and laser labs
- Team members pursuing amateur radio certifications for satellite operations

Contacts:

The LASAR Team (DoSpace association)

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YSpace

General Description
YSpace, based at Brno University of Technology, is the first Czech student team focused on spacecraft development. Founded in 2022 by five students, it has around 50 members from various technical fields. The team collaborates on real space missions, gaining hands-on experience in the space sector.

Competences & Capabilities
YSpace develops its own space missions, covering systems engineering, electronics, software, communications, testing and operations. The team emphasizes interdisciplinary cooperation, iterative design, and adherence to international standards. Team members participate in international educational programs and engage in outreach activities to inspire interest in space technologies.

Major Space Projects & References
KOSTKA
A 1U CubeSat serving as YSpace's first mission, aimed at validating in-house hardware/software and supporting public outreach.
CIMER
A 3U CubeSat in collaboration with Mendel University, being designed with ESA support to study microalgae survivability after long-term storage in orbit, contributing to future biological space research.
Outreach Activities
Lectures, workshops, and exhibitions at public events and conferences to promote space science and engineering.

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YSpace

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Czech Republic Presence in the European Union

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DIRECTORATE-GENERAL FOR DEFENCE INDUSTRY AND SPACE (DEFIS)

The Directorate-General for Defence Industry and Space (DEFIS) leads the European Commission's activities in the Defence Industry and Space sector.

In the area of Defence Industry, DEFIS is in charge of upholding the competitiveness and innovation of the European Defence industry by ensuring the evolution of an able European defence technological and industrial base.

In the area of Space DG DEFIS is in charge of implementing the EU Space programme consisting of the European Earth Observation Programme (Copernicus), the European Global Navigation Satellite System (Galileo) and the European Geostationary Navigation Overlay Service (EGNOS).

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EU SPACE PROGRAMME

The European Space Programme bolsters the EU Space policy in the fields of Earth Observation, Satellite Navigation, Connectivity, Space Research and Innovation and supports investments in critical infrastructure and disruptive technologies.

The following flagship components deliver European space-based services on a daily basis:

COPERNICUS is the European Earth Observation (EO) system. It supports the management of the environment, helps to mitigate the effects of climate change and ensures safety and civil security across Europe. Copernicus is the first world provider of 'big' space data.

GALILEO is a global satellite navigation and positioning system (GNSS) on which numerous EU economic sectors rely, from transport and agriculture to border management and search and rescue. Its 20cm accuracy makes Galileo a game changer for autonomous driving and commercial drones. Already more than 2.5 billion smartphones are Galileo-enabled.

EGNOS is the European Geostationary Navigation Overlay Service: a reliable navigation signal improving the navigation services to aviation, maritime and land-based users over 30+ countries, and already operational in 426 airports and helipads.

In February 2022, the European Commission proposed two new flagship initiatives to boost satellite-based secure connectivity and Space Traffic Management:

IRIS² will ensure worldwide access to secure and cost-effective satellite communications services, for governmental communications and commercial use. It aims to protect critical infrastructures, support surveillance and crisis management, as well as enable high-speed broadband everywhere in Europe to best anticipate future challenges of our economy.

Space Traffic Management: The exponential applications of space services involve more and more satellites, thus more traffic in space. As the congestion of satellites and debris threaten the viability of space infrastructure, the European Commission and the High Representative of the Union for Foreign Affairs and Security Policy have presented an EU approach on **Space Traffic Management (STM)**. This would further strengthen the Union's **space surveillance and tracking capabilities** (already providing collision avoidance services to more than 260 European spacecraft), and set clear standards and regulation for a safe, sustainable and secure use of space.

EUROPEAN UNION AGENCY FOR THE SPACE PROGRAMME (EUSPA)

EUSPA ensures that Europe meets its GNSS objectives and that the public benefits from European GNSS (EGNOS and Galileo). It also supports the development of applications based on Galileo, EGNOS and Copernicus, and coordinates user-related aspects of GOVSATCOM in support of key EU policy goals.

Its specific tasks are:

- managing EGNOS & Galileo service provision
- promoting downstream and integrated applications based on Galileo, EGNOS and Copernicus
- engaging the GOVSATCOM user community in shaping the service
- improving GNSS services & infrastructure

To accomplish this, EUSPA:

- ensure the safe and secure management of all space components
- supports research & innovation
- engages market stakeholders to develop innovative & effective GNSS applications
- leverages synergies between the space programme components
- makes sure that Europe's space-based services are secure, safe & accessible
- provides in-depth market analysis

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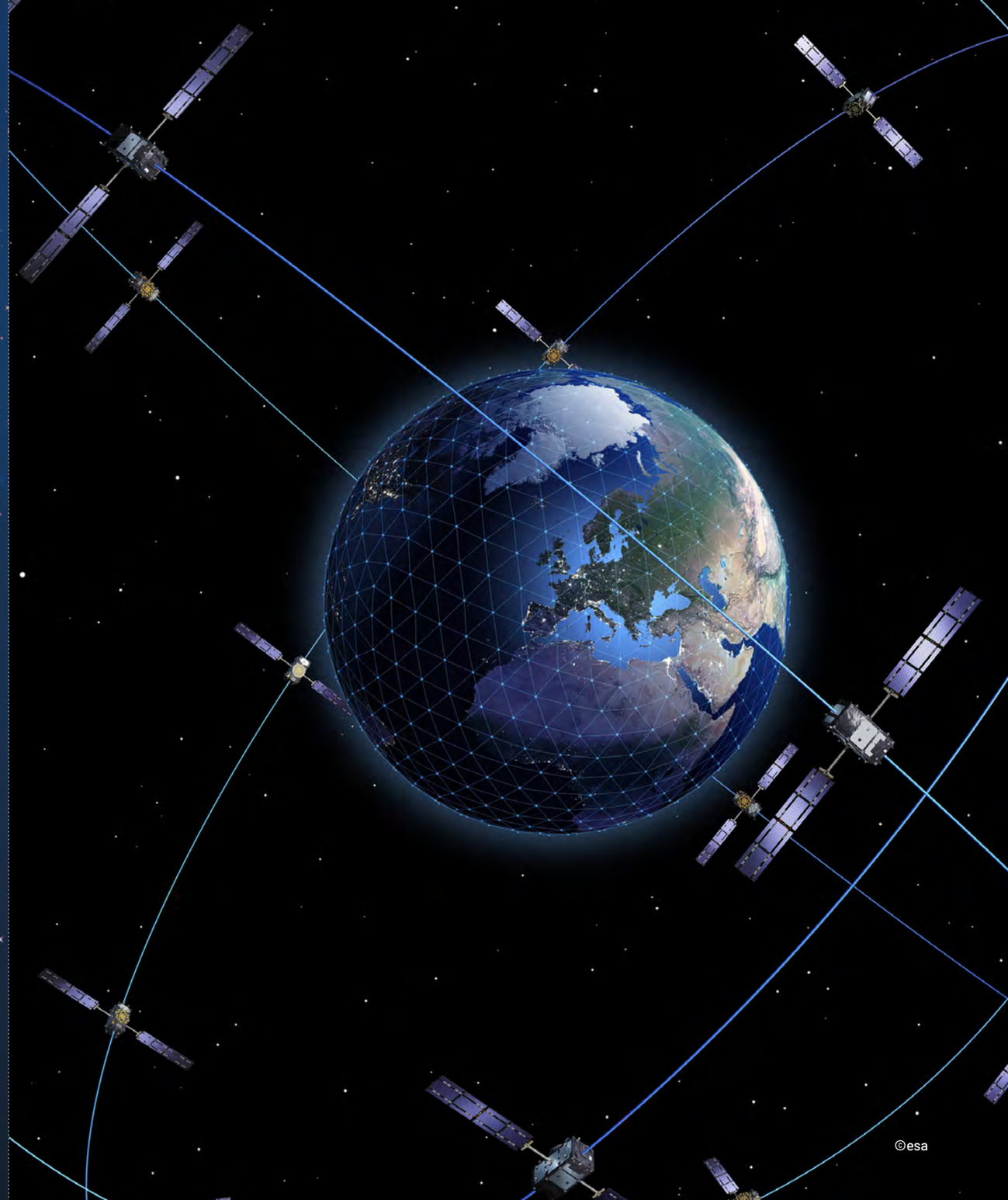

Czech Republic Presence in International Organisations

THE EUROPEAN SPACE AGENCY (ESA)

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA is an international organisation with 22 Member States. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country.

ESA's purpose shall be to provide for, and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications, with a view to their being used for scientific purposes and for operational space applications systems:

- by elaborating and implementing a long-term European space policy, by recommending space objectives to the Member States, and by concerting the policies of the Member States with respect to other national and international organisations and institutions;
- by elaborating and implementing activities and programmes in the space field;
- by coordinating the European space programme and national programmes, and by integrating the latter progressively and as completely as possible into the European space programme, in particular as regards the development of applications satellites;
- by elaborating and implementing the industrial policy appropriate to its programme and by recommending a coherent industrial policy to the Member States.

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Timeline of convergence of the Czech Republic with ESA

1996

Framework Agreement on Cooperation between the Czech Republic and ESA signed.

2000

Treaty on accession to the PRODEX programme (2000) - this was exceptional because PRODEX is an optional ESA programme and as such reserved for Member States.

2003

Government Agreement on the accession of the Czech Republic to the ESA Plan for European Cooperating States (PECS) signed.

2004

Project Charter (PECS Charter) valid for 5 years.

2008

Full membership of the Czech Republic in ESA; the Czech Republic is the first Central and Eastern European country to be a full member of the ESA

2016

Hosting of the Living Planet Symposium 2016 in Prague, one of the largest Earth observation conferences in the world, with 3,500 participants / 1000 talks over 7 days.

Czech participation in ESA

- Approximately 600+ projects in which Czech entities actively participated
- 60+ companies cooperating directly with ESA, dozens of Czech subcontractors
- 50+ start-ups incubated in the ESA BIC business incubator
- Educational programmes for teachers and inspiration of pupils and students reaching over 10,000 teachers and 500,000 pupils and students.
- 25 research institutes and universities
- Participation in the preparation of 3 launchers and 30 ESA missions, both scientific and purely commercial.
- Under the leadership of the Ministry of Transport, a functioning ecosystem to support the development and exploitation of space activities has been created:

1 ESA BIC Czech Republic business incubator with offices in Prague and Brno. In 2021, it started its second five-year period of operation. The operator is CzechInvest. The purpose is to support new promising ideas and their application in the market practice, to support startups.

1 ESA Technology Broker, which searches for the application of space technologies in terrestrial applications. The operator is the Technology Centre of the Academy of Sciences of the Czech Republic. Negotiations are currently underway on the transfer of technologies to be adopted by Škoda Auto (batteries, sensors).

1 ESA Space Solutions Ambassador started its activities in 2022, its task is to promote space systems applications, and project opportunities of the ESA Space Solutions programme and to further increase the participation of small and medium-sized companies of the Czech Republic in the ESA programme.

1 Educational Centre on Space Activities, ESERO, (founded in 2016) whose aim is to train teachers and inspire students to study engineering and science.

The Czech Republic participates in ESA Optional Programmes in the following technology domains:

- **General technologies** (for example banks of supercapacitors, parts of gyroscopes for satellite stabilisation, development of new materials composite sandwich panels, solar panels, etc.).
- **Earth observation** (where the Czech Republic participates, for example, in the third-generation Meteosat meteorological missions, where it supplies cryogenics, in the optics for the main instrument of the FLEX mission, in the preparation of 6 new Sentinel satellites, in the processing of satellite data into applications, including applications using machine learning and AI, etc.).
- **Satellite navigation** (in particular satellite navigation applications and software development for satellite signal monitoring and measurement, etc.).
- **Satellite telecommunications** (Czech companies are involved in the development of the new NEOSAT telecommunications platform, Triton-X, QKD-Sat, Eagle-1 system for satellite communication between air traffic control and transport aircraft crews, development of applications for drones, etc.).
- **Launch vehicles** (computer software for special aerodynamic enclosures that protect the internal systems of the rocket during the atmospheric passage, valves and pumps for rocket engines, eight years of supply of parts for thermal protection of the nozzle for Ariane 5; the Czech Republic is also involved in the preparation of the next generation - Ariane 6 and also in the technology for the new Vega-C rocket, a device for launching satellites to detach from the launch vehicle).

ESA Initiatives in the Czech Republic

ESA BIC Czech Republic

General Description

The ESA Business Incubation Centre (BIC) Czech Republic is a premier hub for space innovation and entrepreneurship. Established under the auspices of the European Space Agency (ESA), it provides a unique ecosystem for start-ups and small businesses to develop cutting-edge space technologies and applications. Located in Prague and Brno, the ESA BIC Czech Republic offers a comprehensive support package including up to 200,000 EUR in seed funding, access to technical expertise, and a robust network of industry partners.

Entrepreneurs benefit from tailored business development support, mentoring, and access to state-of-the-art facilities. The incubation program, which typically spans two years, is designed to accelerate the commercialization of innovative ideas, fostering growth and competitiveness in the global space market. The centre's strategic position within Central Europe provides a gateway to both European and international markets.

ESA BIC Czech Republic has already successfully launched numerous start-ups, contributing significantly to the region's dynamic space industry. By nurturing innovation and fostering collaboration, the centre plays a pivotal role in advancing the Czech Republic's position as a leader in the space sector.

Competences & Capabilities

- Incubation programme and financial support
- Technology seminars and competitions
- Space community network and mentors
- Scouting of new technologies and startups
- Business development

Major Space Projects & References

- Data Analytics Platform for Climate Resilience: international project focused on promoting use of EO data to enhance climate resilience (funded by ESA)
- Astropreneurs: acceleration programme to support startups by mentoring them on business and technical needs and helping them to access funding opportunities (funded by Horizon 2020 programme)
- Copernicus Incubation Programme: incubation programme to support startups working with Earth observation data (funded by Horizon 2020 programme)
- Copernicus User Uptake: project with the aim to spread awareness and motivate organisations to use data and services provided by Copernicus (funded by Horizon 2020 programme)
- Technical competitions and hackathons: Galileo Masters, Copernicus Hackathon, ActInSpace hackathon, CASSINI hackathon and other

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esa BUSINESS INCUBATION CENTRE Czech Republic

ESA Commercialisation Ambassador

General Description

The role of the ESA Ambassador for Czechia is centered on close collaboration with supportive platforms such as ESA BIC and ESA Technology Brokers, aiming to target industry sectors nationwide.

The primary goal is to promote the opportunities offered by ESA programmes, such as BASS and InCubed, to non-space companies and foster the expansion of the space sector in Czechia. By harnessing space data and assets, these programmes can significantly enhance technological leadership across key industries, positioning Czechia as a major player in sectors such as automotive, unmanned aerial vehicles (UAVs), sustainable technology, autonomous systems and AI technology.

ESA programmes BASS and InCubed act as pivotal enablers of this transformation, with ESA Ambassadors providing the essential guidance and support needed for their effective implementation and utilization.

ESA Ambassadors operates under the Business and Investment Development Agency, CzechInvest. CzechInvest is a national innovation agency which plays a key role in supporting business and investments. The agency strengthens the competitiveness of the Czech economy through its support for small and medium-sized enterprises, aiding business infrastructure and innovation, and attracting foreign investments to Czechia in the areas of manufacturing, business support services and technology centres.

Competences & Capabilities

- Providing information on ESA (co-)funding programmes and the opportunities they offer
- Motivating companies and other organisations to participate in ESA BASS and ESA InCubed supportive platforms
- Support in writing project proposals
- Business mentoring and coaching
- Market opportunity analyses and stakeholder maps

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ESA Technology Broker

General Description

The ESA Technology Broker in Czechia is key ESA infrastructure providing brokerage services and pilot demonstration funding to accelerate market ready transfers in Space sector. Operated by Technology Centre Prague (TC Prague) and being part of ESA's network of Technology Brokers, the Czech office links space and non space sectors through a bi directional approach: spinning proven space technologies into terrestrial markets and scouting terrestrial innovations for future space missions.

Competences & Capabilities

- Technology scouting & transfer – identification of suitable space technologies and matchmaking with Czech industry needs.
- ESA Spark Funding – up to €75 000 per project for pilot demonstrations of space to Earth transfers.
- International collaboration – gateway to ESA's Space Solutions Network, Enterprise Europe Network, and global partner database.
- Events & networking – thematic workshops, webinars, brokerage sessions and the annual Gate2Space conference.
- Analyses and studies – technical feasibility studies, foresight, impact studies.

Major Projects, Success Stories & References

- Pilot Suitability Testing System – partnership of F Air & Astronautin improving pilot selection with space derived psychophysiological testing.
- SPAD Sensor "i Cane" – single photon avalanche diode technology repurposed to enhance obstacle detection for the visually impaired.
- GSSN Navigation Algorithm – machine learning correction of GNSS data for sport aircraft altitude control in low visibility conditions.
- Mecas ESI / ŠKODA Transportation – vibro acoustic SEA simulation from satellite engineering reducing cabin noise in metro rail cars.

Other Space Related Services

- As a National Contact Point (NCP) to Horizon Europe, TC Prague provide portfolio of informational, advisory, consulting, and analytical services that are essential for the involvement in international research, development, and innovation (R&D&I) collaboration, especially in the EU framework programmes.
- Accelerator program TC Runway – access to investors, mentors and key industry figures, legal & administrative support, assistance with company formation, accounting & financial management, help securing investment & grants, and tailored business plan coaching for spinoff and startup companies.

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ESERO Czech Republic

General Description
The European Space Education Resource Office (ESERO) is the European Space Agency (ESA)'s cornerstone initiative to bolster primary and secondary education in Europe, with its Czech Republic branch having been operational since 2015. In 2023, a collaborative transformation occurred with Planetum – Observatory and Planetarium Prague, Brno Observatory and Planetarium, Elixir to Schools and a partnership with the Czech Association of Science Centres steering the project to new heights.

Competences & Capabilities
The ESA-ESERO Czech Republic team is assembled from experts in science and space popularization, and specialists in physics and other natural sciences education, collaborating closely with the academic and industrial sectors. They are rooted in the Czech space ecosystem, and with substantial backing from their home institutions, they are adept at orchestrating extensive initiatives promoting space activities among the young generation.

Products & Services
Key offerings encompass organization and realization of workshops and courses for educators, creation of didactic materials, and fostering ESA projects and competitions. Moreover, they actively negotiate the enrichment of space education in the Czech curriculum, collaborating with industry and academia to mentor the young generation for futures in the space sector.

Major Space Projects & References
- Astro Pi Challenge: Program a microcomputer on the ISS
- Mission X: Train like an astronaut
- Moon Camp Challenge: Learn 3D modeling and design a base on the moon
- Climate Detectives: Learn to use Earth imaging satellites
- CanSat: Construct an atmospheric probe
- Hack an Exoplanet: Process real data from the CHEOPS telescope
- Czech Rocket Challenge: Reach the highest and the best flight
- Expedition Mars: Engage in a 100-hour simulated mission
- Next Stop: Space: Student conference about space careers opportunities
- Zero-G Flight: A parabolic flight with 26 primary and secondary school students. ESERO was responsible for the crew selection process and the educational dimension of the event.

ESERO Czech Republic thus stands as a beacon in space education, guiding the next generation to reach for the stars through an impressive repertoire of projects and initiatives.

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START OF ESA EDUCATION PROJECTS 2025/26

8 SEPT — ASTRO PI

MOON CAMP — 11 SEPT

15 SEPT — CANSAT

CLIMATE DETECTIVES — 17 SEPT

19 SEPT — MISSION X

EUMETSAT
THE EUROPEAN ORGANISATION FOR THE EXPLOITATION OF METEOROLOGICAL SATELLITES

EUMETSAT, Europe's meteorological satellite agency, monitors the weather and climate from space. Based in Darmstadt, Germany, EUMETSAT provides its 30 member states šity meteorological imagery and data that are essential for keeping their communities safe and for the benefit of critical sectors of their economies.

Three Meteosat satellites in geostationary orbit deliver continuous observations of fast developing severe weather events over Europe, Africa and the Indian Ocean. Two polar-orbiting Metop satellites provide data of pivotal importance for forecasts up to 10 days ahead. The first of the next-generations satellites in these systems will be launched in 2022 and 2024, respectively.

EUMETSAT is a key partner in the European Union's Copernicus Earth observation programme. It operates the Copernicus Sentinel-3 and -6 ocean-monitoring missions, and will operate the upcoming CO2M mission, to monitor carbon dioxide emissions. Data from these, and EUMETSAT's own missions, are provided to the Copernicus climate, atmosphere monitoring and marine environment services. Along with European Space Agency and the European Centre for Medium-Range Weather Forecasts, EUMETSAT is a partner in the EU's DestinE initiative, creating digital twins of the entire Earth system.

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United Nations
The Committee on the Peaceful Uses of Outer Space (COPUOS)

The Committee on the Peaceful Uses of Outer Space (COPUOS) was set up by the General Assembly in 1959 to govern the exploration and use of space for the benefit of all humanity: for peace, security and development. The Committee was tasked with reviewing international cooperation in peaceful uses of outer space, studying space-related activities that could be undertaken by the United Nations, encouraging space research programmes, and studying legal problems arising from the exploration of outer space.

The Committee was instrumental in the creation of the five treaties and five principles of outer space. International cooperation in space exploration and the use of space technology applications to meet global development goals are discussed in the Committee every year. Owing to rapid advances in space technology, the space agenda is constantly evolving. The Committee therefore provides a unique platform at the global level to monitor and discuss these developments.

The Committee has two subsidiary bodies: the Scientific and Technical Subcommittee, and the Legal Subcommittee, both established in 1961. The Committee reports to the Fourth Committee of the General Assembly, which adopts an annual resolution on international cooperation in the peaceful uses of outer space.

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Field of Activities

INDUSTRY

COMPANY	MANUFACTURING	SOFTWARE	SERVICES	R&D	TESTING
5M	● ● ● ● ●			● ● ● ● ●	● ● ● ●
Advacam	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
Aleego		●	●	●	
ASITIS		●	●	●	
aspheric on	● ● ●		● ● ●	● ● ●	●
ATC Space	● ●			● ●	● ●
AŽD Praha	● ●	● ●	● ● ●	● ● ●	● ● ●
BBT-Materials Processing	● ● ●			● ● ●	● ● ●
BD SENSORS	● ● ● ●	●	● ● ●	● ● ●	● ● ● ●
Betrian Group	● ● ●	● ● ●		● ● ●	● ●
Big Terra		● ● ●	● ● ●	● ● ●	● ● ●
BizGarden		●	●	●	
BST.COACH		● ●	● ●	● ●	
CGI IT Czech Republic		● ● ●	●	●	● ●
CleverFarm		●	●	●	
CRYTUR	● ● ●		● ● ●	● ● ●	●
daiteq		● ●	● ●	● ●	● ●
Dronetag	●	●	●		
EGGO Space					● ●
egsespace	● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●
Eltvor Instruments	● ● ●	● ● ●	● ● ●	● ● ●	
esc Aerospace	● ● ●	● ● ● ●	●	● ● ● ●	● ● ●
EVEKTOR	● ●		● ●	● ●	● ● ●
Exact Control System	● ● ●	● ● ●	● ● ●	● ● ●	
Frentech Aerospace	● ● ● ●			● ● ● ●	● ● ● ●
G.L. Electronic	● ● ●		● ● ●	● ●	● ● ●
GINA Software		● ● ●	● ● ●	● ● ●	● ● ●
Gisat		● ●	● ●	● ●	●
GNSS Centre of Excellence			●	● ●	● ●
GROUNDCOM.SPACE	●	●	●	●	●
Hikade Technologies			● ● ●	● ● ● ●	● ●
Honeywell International	● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ●
Huld s.r.o.		● ● ● ●	● ● ●	● ● ●	● ●
HVM PLASMA, spol.	●		●	●	● ●
Iguassu Software Systems		● ● ●		● ● ●	
INPRAISE SYSTEMS	● ●	● ●	● ● ● ●	● ● ● ●	● ● ●
KYOCERA AVX Components	● ● ●		● ● ●	● ● ●	● ● ●
LA composite	● ● ● ●			● ● ● ●	● ● ●
Mapradix	● ●	●	● ● ●	● ●	● ● ●
MCE Slaný	● ●		● ●	● ●	● ●
Meopta – optika	● ● ● ● ●	● ●	● ●	● ● ●	● ● ● ● ●
MeteoInsight		●	●	●	
OHB Czechspace	● ● ● ●		● ● ● ●	● ● ●	● ● ● ●
ONE3D s.r.o.	● ●		● ●	● ●	● ●
OPTOKON	● ●	● ●	● ● ●	● ●	● ● ●

COMPANY	MANUFACTURING	SOFTWARE	SERVICES	R&D	TESTING
OteSpace				●	●
PEKASAT SE	●	● ● ●	● ●	● ● ●	
PlasmaSolve		● ● ●	● ● ●	● ● ●	
ProjectSoft HK		● ●	●	●	
Prusa Research a.s.	●	●	● ●	● ●	● ● ●
RHEA System CZ	● ●	● ● ● ●	● ● ●	● ● ●	● ● ● ●
Rigaku Innovative Technologies Europe	●	● ●	● ●	● ●	● ●
S.A.B. Aerospace			● ● ●	● ● ●	● ● ●
SAZ Aerospace	● ● ●			● ● ●	● ● ●
Serco		● ●	● ●		
SERENUM	● ●	● ●	● ●	● ●	● ● ● ●
SPACEKNOW		●	●	●	●
SpaceLab EU, SE				● ●	● ●
SPACEMANIC CZ	● ● ●	● ● ●	● ● ●	● ● ●	
Stellar Exploration EU	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
Stellar Nuclear			● ● ●	● ● ●	● ● ●
STRATOSYST			● ● ●	● ● ● ●	● ● ● ●
STREICHER	● ● ● ●		● ●	● ● ● ●	● ●
Strojcar	● ● ● ●			● ● ● ●	● ● ● ●
SYNPO	●			●	●
Terma Technologies Czech Republic	● ●	● ●	● ●	● ●	● ●
TOSEDA	●			●	●
TRL Space Systems		● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ●
TTS	●		●	●	
Uneeqly		● ●	● ●	● ●	
UNEX	● ●		● ●		● ●
UNITES Systems	●	● ● ●	● ● ●	● ● ● ●	● ● ● ●
UpVision		● ● ●	● ● ● ●	● ● ● ●	● ● ● ● ●
VZLU AEROSPACE	● ● ●	● ●	● ● ● ●	● ● ●	● ● ● ●
World from Space		●	●	●	●
Zaitra		●	●	● ●	

INDUSTRY

- Parts and materials ●
- Subsystems and equipment ●
- Instruments and Payloads ●
- Ground Segment ●
- Downstream, applications ●
- Education and Capacity Development ●

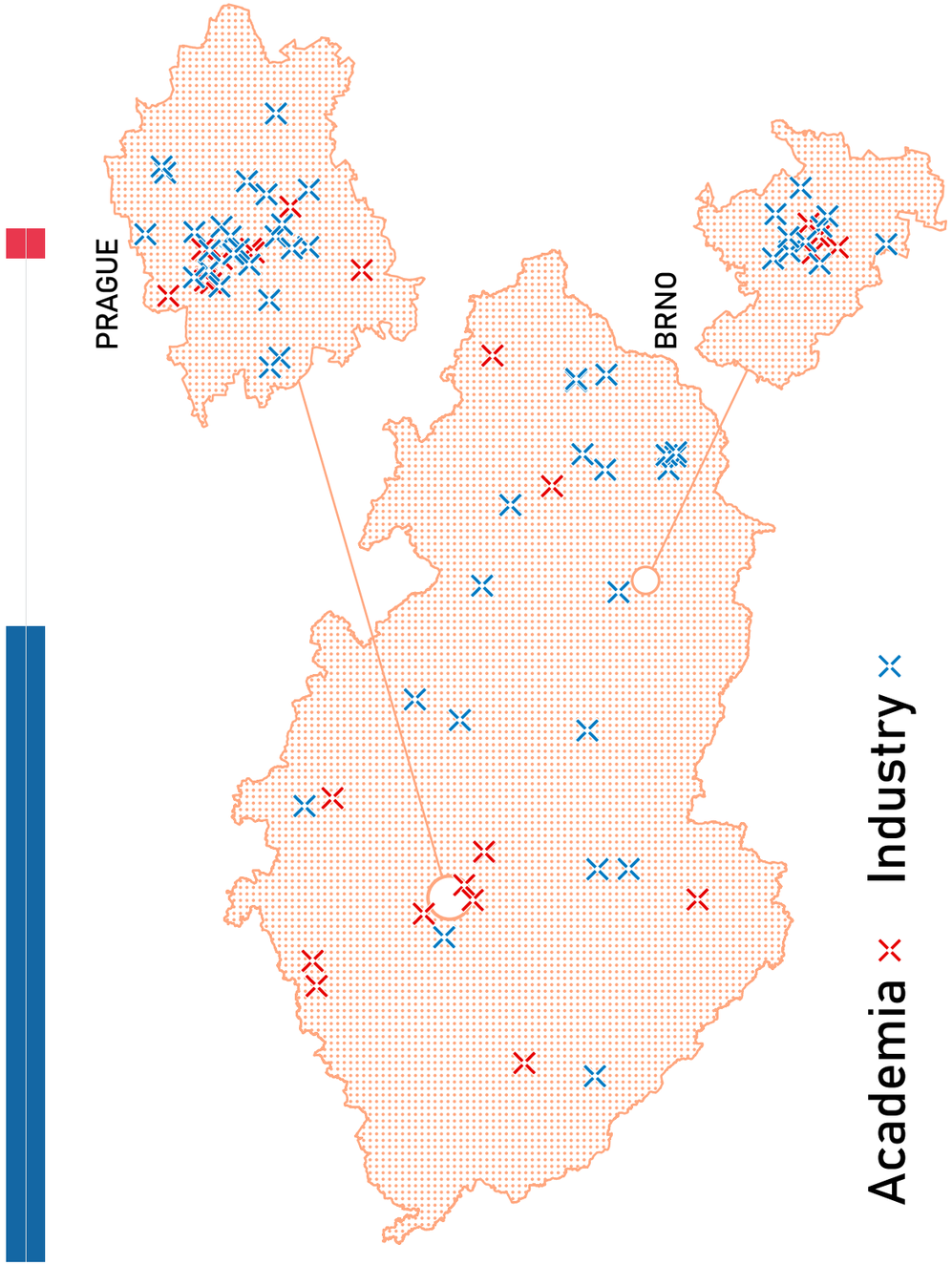
Field of Activities

ACADEMIA

ENTITY	▲ R&D	❩ DESIGN	⊤ TESTING
Astronomical Institute, CAS	●●●●●	●●●●●	●●●●●
Brno Observatory and Planetarium	●●		
Brno University of Technology	●●●●●	●●●●●	●●●●●
CESNET z. s. p. o.	●	●	
Czech Hydrometeorological Institute (CHMI)	●●	●●	●●
Department of Geoinformatics, J. E. Purkyně University	●●●	●●	●●●●
Department of Laser Physics and Photonics, CTU in Prague	●●●●●	●●●●●	●●●●●
Department of Soil Science and Soil Protection	●●●	●●●	●●●
Faculty of Applied Sciences, University of West Bohemia in Pilsen	●		
Faculty of Electrical Engineering, CTU	●	●	●
Faculty of Mathematics and Physics Charles University	●●●●	●●●●	●●●●
Faculty of Mechanical Engineering, CTU	●●●●	●●●●	●●●●●
Faculty of Science, Palacký University Olomouc	●		
Global Change Research Institute CAS	●●	●	●●
HiLASE Centre	●●●●●	●●●●●	●●●●●
Institute of Atmospheric Physics, CAS	●●●●●	●●●●●	●●●●●
Institute of Botany, CAS	●●●	●●●●	●●●●
Institute of Experimental and Applied Physics, CTU	●●●●	●●●	●●●
IT4Innovations National Supercomputing Center	●		●
JIC	●●●●●	●●●●●	●●●●●
Klet Observatory	●●●		
Mendel University in Brno	●●●●●	●●●●●	●●●●●
Nuclear Physics Institute, CAS	●	●	
Planetum – Observatory and Planetarium Prague	●●		
Research Institute of Geodesy, Topography and Cartography	●●	●●	●●
Teplice Observatory	●		
TOPTEC, Institute of Plasma Physics, CAS	●●●●●	●●●●●	●●●●●

ACADEMIA

- Parts and Materials ●
- Subsystems and Equipment ●
- Instruments and Payloads ●
- Ground Segment ●
- Education and Capacity Development ●
- Downstream, Applications, Data processing ●



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