

ESA BIC Czech Republic

Introduction of Startups

19. 7. 2023



south moravian region

AdvaScope

AdvaScope is developing the most advanced hybrid pixelated detectors for electron microscopy.

Unique selling points:

- Decades of experience in the design and development of hybrid-pixel detector systems
- Detectors provide single electron sensitivity for use in high resolution, high speed and high sensitivity applications
- Applications: (4D) STEM in SEM/TEM, μ ED (micro electron diffraction), EBSD, EELS, Micro/nano CT, Ptychography



Space connection (sector)

Technology transfer (particle detection)



Product

Electron Microscopes



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

Aleego

Shared platform for drone customers. ALEEGO platform integrates airspace structure, road mapping, obstacle avoidance, battery intelligence, non-fly zone or UAV sensors using GNSS and Earth Observation.

Unique selling points:

- Platform for sharing the industrial drone capacity, and related services
- Wide range of services for variety of industries
- Example of services: weather or wildlife damages monitoring; irrigation paths planning; increase of productivity by using multispectral vision; drone inspections; hotspots identification



www.aleego.com



Space connection (sector)

Satellite navigation (drone services)



Product

Online platform



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Big Terra

Big Terra Alpha brings missing elements to agriculture management in Africa

Unique selling points:

- Can deliver extensive information about climate and farming conditions for places with a lack of local data
- State-of-the-art data science applied to fine-resolution satellite and weather data combined with crop growth modeling
- Bespoke service for all sectors involved with farming in developing regions – NGO, government, finance, etc.



www.bigterra.com



Space connection (sector)
Earth observation (agriculture)



Product
Climate report



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

CORAC Engineering

CORAC is a space technology company developing SW and HW solutions for resilient communication in space.

Unique selling points:

- Off-the-shelf solution for CubeSats
- Adjustable for post-quantum world
- End-to-end solution covering communication from 3rd party contractors to satellite payloads



www.corac.cz



Space connection (sector)

Earth observation (telecommunication)



Product

Access Management for satellites



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Dartsat

Dartsat focuses on hardware and software solutions for antennas in the satellite communications sector, providing precision, reliability, and affordability.

Unique selling points:

- Modern materials and innovative manufacturing processes while maintaining affordability
- Modular and easy-to-assemble and maintain antenna
- Full management software with a decentralized architecture



www.dartsat.com



Space connection (sector)

Satellite communication (ground segment)



Product

Ground station full-stack solutions



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Dronetag

Dronetag enhances the intelligence, connectivity, and safety of drones, enabling their widespread use in everyday life.

Unique selling points:

- All-in-one solution for safe drone operation comprising a hardware device, cloud platform and user app
- Early market with vast potential due to emerging government regulation
- By using the newest IoT technologies and extensive know-how, Dronetag created the smallest and lightest solution on the market



dronetag

www.dronetag.cz/en



Space connection (sector)

Satellite navigation (UAVs)



Product

Hardware and software for drone coordination



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

ECOTEN Urban Comfort

ECOTEN focuses on identifying critical hotspots that allow decision-makers to implement more efficient heat mitigation strategies to protect the citizens and provide a nicer urban environment.

Unique selling points:

- Tailored services for forward-looking cities
- Urban Heat Vulnerability Assessment
- Urban Microclimate Simulations



www.urban-comfort.eu



Space connection (sector)
Earth observation (smart cities)



Product
Climate-proof Cities



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

Eigenspace

Eigenspace is focuses on computer simulation for simple and cost effective optimization.

Unique selling points:

- Novel method transferred from academia utilizing the High Order Method (HOM) that is more accurate with 2-5 times lower computation costs
- Universal solution for many areas of engineering
- Relevant space-industry players are interested in the technology



www.eigenspace.ai



Space connection (sector)

Technology transfer (simulation software)



Product

Flow modeling



Technology readiness

- Development
- **Proof of concept**
- Prototype
- First implementation
- Extensive implementation

Entrant

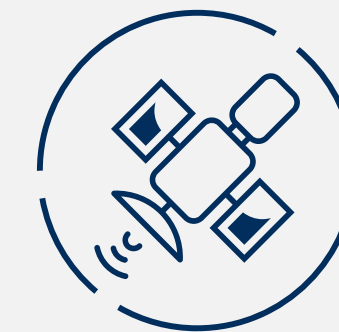
Entrant is targeting a lucrative business opportunity in the precise monitoring and interpretation of stress, primarily focusing on critical industries like space, aerospace, and military.

Unique selling points:

- Algorithm enabling measurement of stress levels without the necessity of blood samples
- Real-time monitoring via video and other remote methods provides current information
- Technology based on university research with vast commercial potential



www.entrant.cz



Space connection (sector)

Technology transfer (analogue missions)



Product

Stress measurement algorithm



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

Festka

Festka is a Czech-based bicycle producer known for its hand-crafted manufacturing, technological innovation, and customer satisfaction.

Unique selling points:

- Advanced carbon-fiber material used in aerospace
- Global reach of the product, with international recognition
- Skilled team of experts with vast know-how



FESTKA

www.festka.com



Space connection (sector)
Technology transfer



Product
Bicycle



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

FlyinDiamonds

FlyinDiamonds is a leading drone light show company, offering mesmerizing and customizable experiences through state-of-the-art technology and expert coordination.

Unique selling points:

- All-in-one drone light show solution for fireworks of the future.
- Innovative business potential and breathtaking promotion opportunities.
- Advanced technology drone adaptive and safe flight trajectories.
- Skilled team of experts with vast knowledge and experience in the field.



Space connection (sector)
Satellite navigation (UAVs)



Product
Drone swarm coordination



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation



www.flyindiamonds.com

FoxWorks Aerospace

Foxworks Aerospace specializes in immersive simulations of aerospace and land vehicles, providing detailed representations of internal systems and precise motion dynamics.

Unique selling points:

- Comprehensive real-time space simulation with photorealistic graphics
- Customer – tailored simulation
- Skilled team of experts with vast know-how and experience with ESA projects



www.foxworks.cz



Space connection (sector)

Technology transfer (simulation software)



Product

Simulation software



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

GroundCom.space

GroundCom.Space aims to facilitate communication between companies and their satellites by offering ground stations, communication software, and a web agent.

Unique selling points:

- Cost-efficient connectivity for operators
- Worldwide network of ground stations
- Accessible via cloud GUI and API



Space connection (sector)
Ground segment



Product
Worldwide network of ground stations



Technology readiness

- Development
- **Proof of concept**
- Prototype
- First implementation
- Extensive implementation

Hydronaut

Hydronauts aims to build a distinctive underwater habitat for conducting analogue missions, testing space technologies, researching human behavior in demanding conditions, and simulating space missions and rescue situations.

Unique selling points:

- The station enables a three-member crew to remain under the surface of the water long-term to simulate space missions, rescue situations and extreme teamwork
- Hydronaut can facilitate psychological, biological, botanical and technological studies at a very competitive cost
- The core module is mobile and can be used in various environments



Space connection (sector)
New Space (analogue missions)



Product
Underwater research laboratory



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

HYDRONAUT

www.hydronaut.eu

ICEE.Space

ICEE.Space is an international space test, research, and development start-up for future human space exploration.

Unique selling points:

- Highly international and interdisciplinary support team with extensive industry and governmental experiences, along with a wide professional network
- Modular and deployable facilities allow us to be adaptable and location-independent, accommodating missions of various sizes and conditions
- Providing essential components and systems such as simulated spacesuits, environmental monitoring systems, power and communication systems, and inflatable habitats.



www.icee.space



Space connection (sector)

New Space (analogue missions)



Product

Analog mission services (CHILL-ICE)



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

InsightArt

InsightART offers state-of-the-art spectral X-ray imaging for art inspection and authentication, providing detailed information about pigment composition in paintings.

Unique selling points:

- Comprehensive technological data-based method for art authentication, restoration and preservation
- Exclusively licensed scanning technology and patented 3D XRF system extension
- Strong know-how in both art authentication and particle physics



www.insightart.eu



Space connection (sector)
Technology transfer (art)



Product
ART X-ray



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Intellmaps

Intellmaps offering infrastructure management tools based on localization, using Galileo's highly accurate satellite navigation for outdoor positioning and low-cost beacons for seamless indoor localization.

Unique selling points:

- Multi-platform building information management services provides a variety of application
- Ability to combine data from IoT sensor and indoor navigation
- Team of GIS professional who are passionate about maps



Space connection (sector)
Satellite navigation



Product
Navigation services



Technology readiness

- Development
- **Proof of concept**
- Prototype
- First implementation
- Extensive implementation

Let`s Earth

Let's Earth offers cutting-edge analytical and acquisition services to utility consumers, utilizing Earth observation data to optimize utility costs through renewable sources.

Unique selling points:

- Climate data for buildings too distant from a weather station
- Up-to-date information on local climatic changes
- Ready-to-use data processed in line with ISO and ASHRAE standards



MeteoInsight

www.meteoinsight.com



Space connection (sector)
Earth observation



Product
Climate data and analysis



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

Maptiler

Maptiler offers world maps and pre-processed earth observation data for direct use in various end-user products, including digital maps, web applications, mobile apps, games, virtual reality, offline software, navigation systems, and more.

Unique selling points:

- Cost-effective offline customized map geo data
- A much faster and more affordable customizable solution
- Directly usable by companies in their end-user products and websites



www.maptiler.com



Space connection (sector)
Earth observation



Product
"Google Maps" for businesses



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

MARS Buildings

Mars Buildings implements the M.A.R.S. (Modern-Assembly-Residential-System) concept, inspired by ESA and NASA outer space habitats, to design and deliver futuristic, energy-efficient homes at only 25% of the usual cost

Unique selling points:

- Light dome shape like structure made of composite materials
- Lego-like modular structure allowing fast assembly on the spot
- The house will be shippable in the standard containers
- Ability to reorganise the floorplan (no internal structural walls)



www.marsbuildings.com



Space connection (sector)
Technology Transfer



Product
Innovative Housing



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

MobisOne

MOBISOne is a complete UAS which integrates a VTOL drone and a Ground Control System on which dedicated mission planner software runs.

Unique selling points:

- Experienced international team with a background in the aircraft industry and UAV construction
- Autonomous vehicle with long flight capacity in accordance with EU flight regulations
- Low energy and maintenance costs



MOBISONE

www.mobis1.com



Space connection (sector)
Satellite navigation (UAVs)



Product
Multi-purpose UAV



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

NaviRider

Nevertheless, it is not the safe form of transport and motorcyclists face a number of risk factors that do not affect car drivers and others. It is demanding to stay oriented while riding a motorcycle and navigating to the destination can be complicated.

Unique selling points:

- Turn-by-turn navigation tailored to motorcyclists
- Crash detection and distress calls
- Road hazard alerts, route tracking and sharing



www.navirider.com



Space connection (sector)

Satellite navigation



Product

Mobile platform



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

Needronix

The company focuses on Research and Development activities and creates unique products / whole solutions with high added value mainly for the aerospace industry.

Unique selling points:

- Family startup led by a skilled group of engineers
- Focus on technological processes and quality control through adherence to ECSS standards
- The first two products are a state-of-the-art Earth sensor and a navigation computer for cubesats



www.needronix.com



Space connection (sector)
New Space



Product
Cubesat components



Technology readiness

- Development
- **Proof of concept**
- Prototype
- First implementation
- Extensive implementation

Neuron Soundware

Neuron soundware reshapes machine diagnostics and predictive maintenance.

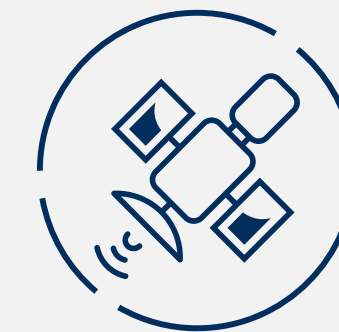
Unique selling points:

- Diagnostics technology consisting of special IoT recording and edge computing hardware, AI algorithms, analytics and monitoring software platform
- The solution is applicable for many types of machines such as engines, compressors, pumps, turbines, robots and satellites
- Experienced team with multi-sectoral and international goals



**NEURON
SOUNDWARE**

www.neuronsw.com



Space connection (sector)

Ground Segment (simulation software)



Product

Audio diagnostics



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

NG Aviation

NG Aviation focuses on bringing new state-of-the-art solutions into the field of digitization of aeronautical data. The company's goal is to create solutions that create, verify and distribute aeronautical data of required quality for monitoring of airport traffic making it easier to navigate.

Unique selling points:

- Experienced team from both the air navigation and aeronautical information management fields
- Flexible technology with multiple purposes
- State-of-the-art solution answering the needs of the market and government regulation



Space connection (sector)
Satellite navigation (aviation)



Product
Digitization



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Numer8

Numer8's Ofish product helps fisheries across the globe to become sustainable again by helping small-scale fishermen catch more in shallow waters, while controlling illegal fishing and overfishing by industrial deep sea trawlers.

Unique selling points:

- App with global reach aiming for a niche market segment and already recognized by the UN, among other organizations
- Innovative solution combining multiple information sources to localize shoals of fish and provide extreme marine weather intelligence
- Application promoting environmentally responsible fishing and complete supply chain traceability

numer8

www.numer8.com



Space connection (sector)

Earth observation



Product

Fisheries and seafood supply chain



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

SkyMaps

Experts from Skymaps use cameras with thermal imaging, with which it is possible to evaluate the quality of soil and crops.

Unique selling points:

- Cultiwise – web-based SW platform for background data processing and visualization– from UAV to sprayer
- Can reduce the use of pesticides by 60%-90% through assessment of the real needs of the field
- Can express the differences between each micro-plot in a field to evaluate the treatment efficacy essential for agrochemical product development



www.skymaps.cz



Space connection (sector)
Earth observation (agriculture)



Product
Precision farming field assessment



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Spacemanic

Whether it's through the development of custom components, the provision of launch services, or the creation of complete end-to-end nanosatellite systems, Spacemanic has the expertise and resources to deliver results that meet the most demanding requirements.

Unique selling points:

- Plug&Play Modularity
- Increased Flexibility
- Faster Deployment
- Reduced Cost



SPACEMANIC

www.spacemanic.com



Space connection (sector)
New Space



Product
Cubesats



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

SPACERACE

SPACERACE is focused on making the companies faster in the race for space utilization through standardized products.

Unique selling points:

- Release actuators for space can retain a high preload and release it on demand.



www.spacerace.cz



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Space connection (sector)
New Space



Product
ATLAS - release actuators for
ground testing



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

StatoTest

Statotest develop high precision submillimeter GNSS system integrated to otheir sensor and solution ecosystem. It will help us to cover more applications, serve current customers and find new customers.

Unique selling points:

- Offering complete service related to the design of monitoring, its implementation, creation of reports, notification of changes, data analysis and visualization, and prediction based on artificial intelligence
- Measurements of any kind of building



www.statotest.com



Space connection (sector)
Satellite navigation



Product
GNSS structure monitoring and IoT sensors



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

Strafos

Strafos aims to streamline private jet management and dispatching by offering a cloud-based online system with a user-friendly interface.

Unique selling points:

- Single solution with built-in calculations and smart functions increasing sales and ops time efficiency
- Increased aircraft revenues, real-time crew management, airport and crew availability checker
- ADS-B real time satellite tracking, GADDS ready



www.strafos.aero



Space connection (sector)
Satellite navigation (aviation)



Product
Management service



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

Stratosyst

STRATOSYST is R&D company that develops High Altitude Pseudo Satellite. HAPS can accommodate a wide range of applications and provide services complementary to satellites for a fraction of costs.

Unique selling points:

- Stratospheric high-altitude platform station enabling long-term geostatic observation of a predefined area
- Unique design enabling long-term observation with no fuel consumption
- The technical solution is applicable in mass production



Space connection (sector)
New Space (UAVs)



Product
High Altitude Pseudo Satellite



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

Suborbitality

The rocket being developed by Suborbitality is a reusable, autonomous suborbital space launch vehicle designed to carry up to 50 kg of payload with a servicing range of 100 to 175 km above sea level.

Unique selling points:

- Cheaper solution due to reliable and economically optimized design
- Experienced project team with international goals and aerospace experience
- Estimated better performance in space conditions due to standardization of hardware



Space connection (sector)
New Space



Product
Suborbital rocket



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Triphood

Triphood is a mobile app that makes tourism fun and helps traveller stay motivated.

Unique selling points:

- Ability to create app clones quickly and cheaply
- Support for domestic travel and its decentralization
- Experienced team with an innovative solution

triphood
...výlety s příběhem

www.triphood.com



Space connection (sector)
Satellite navigation



Product
Mobile application



Technology readiness

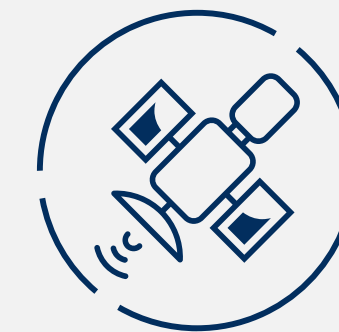
- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Tuddy Tuddy

Traveler can easily search through wide range of unique and authentic experiences and interact with local provider.

Unique selling points:

- Online platform for personalized offer of local tourist activities
- Different product approach oriented toward local authenticity and new experiences
- Tailored for millennials – the largest generation worldwide with specific preferences and needs



Space connection (sector)
Satellite navigation



Product
Online platform



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Turncircles

The Turncircles team has dedicated three years to developing a motor prototype that has superior Power-to-Weight performance compared to its leading competitors.

Unique selling points:

- Possible integration of the technology into electric-drive products
- Scalable design with short development lead times because it is based on a stackable, parametric motor
- Team of experienced professionals in engineering and management of complex HW projects



www.turncircles.com



Space connection (sector)
New Space



Product
Electric motor



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

Uneeqly

Uneeqly creates a new ecosystem enabling collaboration between SMEs and regions across the country and across the EU.

Unique selling points:

- A mobile app that you can use to instantly start communicating with your local customers and brand new ones.
- Uneeqly always delivers your business' offers directly to your customers while automatically posting to social networks.
- Keep track of your customers, promotions and offers.
- Use gamification for your customers.



www.uneeqly.com



Space connection (sector)
Satellite navigation



Product
Application



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

UptimAI

UptimAI develops a software add-on providing uncertainty quantification and sensitivity analysis with unforeseen efficiency and robustness.

Unique selling points:

- Probability algorithm used in the space industry provides unique insight into the statistical influence of each parameter
- Allows users to design the highest-quality products that are resistant to production uncertainties
- Compatibility with commonly used optimization methods



UptimAI

www.uptimai.com



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Space connection (sector)

Technology transfer



Product

Simulation add-on tool



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

Varistar

Varistar is a new and highly innovative service in crop production.

Unique selling points:

- Innovative solution that combines long-term and current Earth observation data with historical data from fields
- Niche market focus with ability to satisfy specific customer needs
- Unique complex solution customized for each customer with a positive impact on farms' economics and on the environment



www.varistar.com



Space connection (sector)
Earth observation



Product
Variable rate application



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation

VisionCraft

Our solution in the form of a smart, mobile sensor or server component can be installed anywhere without the need for a permanent power supply and data connection in a matter of minutes.

Unique selling points:

- IoT sensors learn scenes and objects with minimal human input and adapt to changing situations with limited power and connectivity needs.



Space connection (sector)
Satellite navigation (smart cities)



Product
Autonomous Sensor



Technology readiness

- Development
- Proof of concept
- **Prototype**
- First implementation
- Extensive implementation

World from Space

World from Space is developing the satellite-based commercial drought assessment service for cities, regions, insurance companies and farmers in the EU.

Unique selling points:

- Increases productivity of end customers by 15–20%
- Lightweight API with easy integration, multiple format output and full global coverage
- DynaCrop API provides ready-made agriculture products based on Sentinel 1 and 2 open satellite imagery



www.worldfrom.space



Space connection (sector)
Earth observation (agriculture)



Product
TOP VR solution



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

Zaitra

Zaitra makes space-grade sensors smarter. There are use cases when it makes sense to utilize AI/ML model to solve a customer's problem.

Unique selling points:

- Powered with AI/ML running on-board satellite
- Space Heritage on several ESA and commercial missions
- Our value proposition is the flexibility of deployment for the COTS HW platforms



www.zaitra.com



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Space connection (sector)
Earth observation



Product
Software Defined Space
Missions and Payloads



Technology readiness

- Development
- Proof of concept
- Prototype
- **First implementation**
- Extensive implementation

ZetJet Technologies

ZETJET Technologies s.r.o. is an engineering company active in advanced aircraft propulsion.

Unique selling points:

- Significant reduction of fuel consumption due to effective energy recuperation
- Unique and patented design that enables HAPS to be used in new areas with less sunlight
- Relevant Reduction of development and purchase costs of HAPS players are interested in the technology

ZETJET
Technologies

www.zetjet.com



Space connection (sector)
New Space



Product
Stratospheric electric turbine



Technology readiness

- Development
- Proof of concept
- Prototype
- First implementation
- Extensive implementation



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