



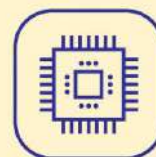
CZECH SPACE

CZECH SPACE INDUSTRY





SCIENTIFIC
INSTRUMENTS



ELECTRONICS
COMPONENTS



ELECTRONICS
ASSEMBLY



SOFTWARE
DEVELOPMENT



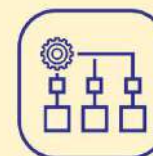
DEVELOPMENT
OF MATERIALS



DESIGN AND
SIMULATION



MECHANISM AND
STRUCTURES



SUBSYSTEM
INTEGRATION



TESTING

CZECH SPACE ALLIANCE

06/2025
Czech-Spanish Industry Day

Goals and activities



- Presentation at national and international events
- Dialogue and relationship with space agencies
- Cooperation with similar associations
- Development of business relationships
- Presentation of interests to the national decision makers
- Cooperation with Ministry of Transport and other official entities in the formulation of Czech space policy
- Cooperation with academia
- Support of student activities



Industrial association of 22 members

egsespace®

5M

BD SENSORS®
Space CSRC

EGGO

CGI



esc
Aerospace

Frentech
Aerospace
member of
Czech Aerospace Systems

huld
Beyond tomorrow

BBT®
BBT – MATERIALS PROCESSING
www.czbmt.cz

IGUA//U
SOFTWARE
SYSTEMS

KYOCERA
AVAX

LKE--

OHB
CZECHSPACE

Rigaku
POWERING NEW PERSPECTIVES

SAB
Aerospace

STRATOSYST
HAPS SERVICES FROM STRATOSPHERE



TERMA®

tosedat
technology · science · development

THIN FILM
TECHNOLOGICAL
SERVICE

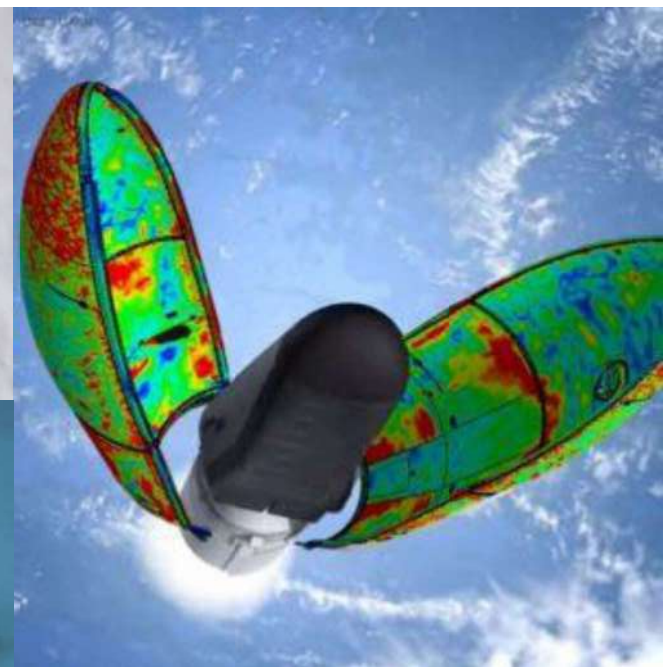
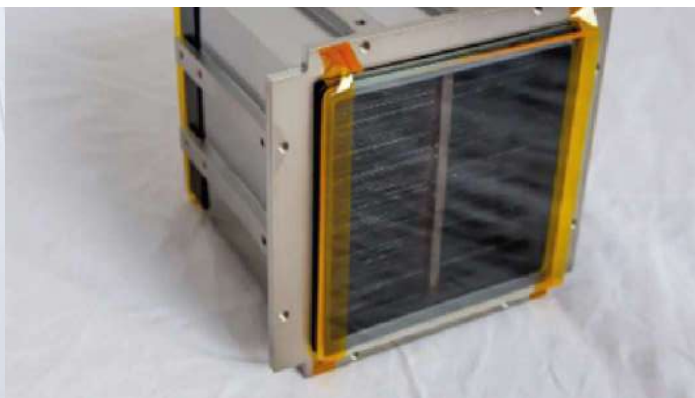
UNITES
Designed to test

www.czechspacealliance.eu



Members' technical 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** – egospace, Advacam, Kyocera AVX, BD Sensors, e.s.c. Aerospace, HULD, UNITES, TTS
- **G/S and flight Software** - egospace, Iguassu Software Systems, e.s.c. Aerospace, HULD
- **Material development** – TOSEDA, TTS, 5M
- **Scientific instruments** – Advacam, BBT Materials Processing, Rigaku Innovative Technologies
- **Testing** – egospace, EGGO Space, Frentech Aerospace, OHB Czechspace, TOSEDA, 5M, Streicher
- **GSE** – egospace, TERMA, L.K. Engineering, OHB Czechspace, SAB Aerospace, UNITES
- **Space applications** – CGI
- **Security consulting** – CGI





Contact

- **Prezident: Richard Pavlica** – richard.pavlica@5m.cz
- **Secretary: Josef Šobra** – tajemnik@czechspacealliance.eu
- **Info: Vendula Doubravská** – info@czechspacealliance.eu
- Czech space alliance, Evropská 657/120, 160 00 Praha 6





HiLASE Centre space focus

- Laser communications
 - Advanced laser sources, adaptive optics, atmospheric modelling
- Laser ablation
 - Laser momentum transfer
- Lasers for space sustainability
 - LIDAR, laser 3D printing, laser energy transmission

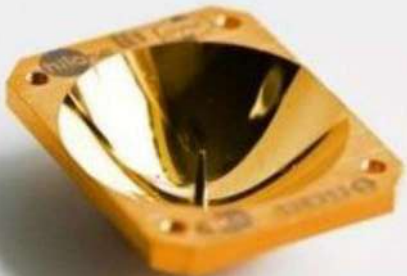
Ing. Jan Vanda, Ph.D.
Space Laser Technologies, team leader
15.04.2025, Praha



HiLASE Centre space project overview



- LASARsat Project
- First HiLASE payload
- Concave mirror with ablation target
- Corner retroreflectors for communication and tracking
- Testing ablation materials for LIDT in the HiLASE facility
- Simulations of thermal stress

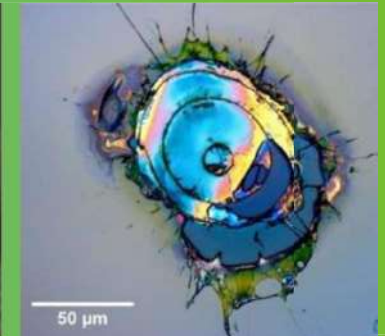
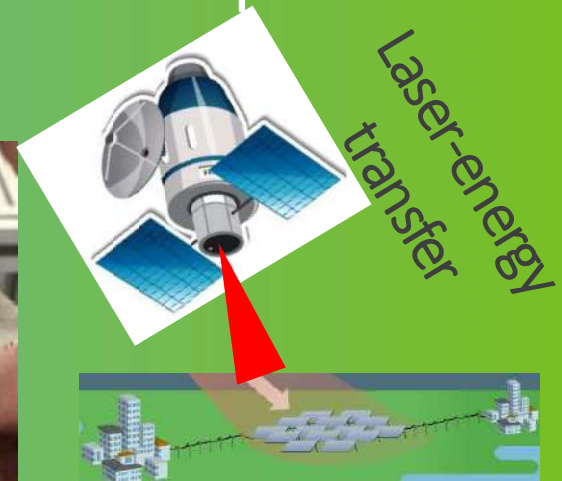


HiLASE Centre space infrastructure

ATLAS: Advanced Technologies for Laser Applications in Space



3D printing

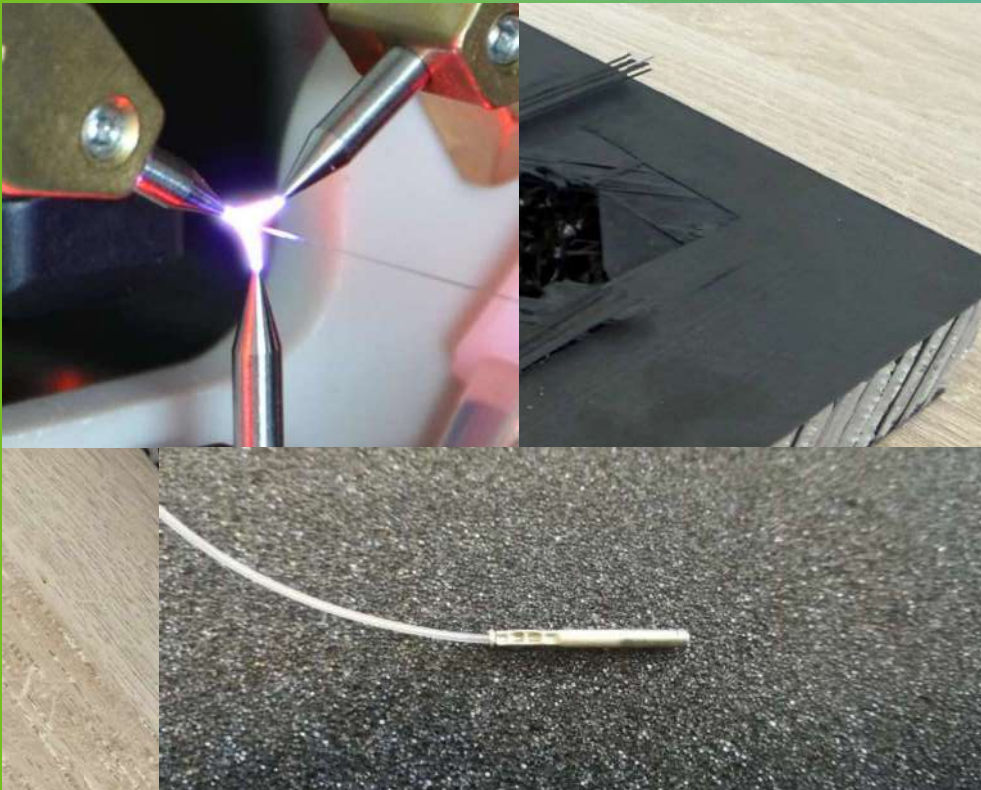


Space-grade components

hilase

HiLASE Centre SPARK activities

- ESA-SPARK
 - Fiber optic temperature sensor for space



- ESA-SPARK
 - Laser Optics for Space



HiLASE Centre projects summary

National funding

- ESA SPARK Space grade LIDT optics testing
- ESA SPARK Fiber optic temperature sensor for space
- AV21 Space for Humankind - Adaptive laser propulsion: Changing object trajectory and ensuring orbital safety
- NCK 2 LIDAR – novel device for space debris mapping in 100 km range
- NCK 2 FREYA – Objective for hyperspectral camera operating in 200-600 nm range
- ESA ARTES Short-wave infrared high power laser for long-distance satellite communication*

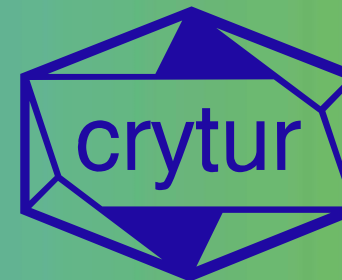
International funding

- HORIZON-WIDERA-2023-TALENTS-01 - ATLAS: Advanced Technologies for Laser Applications in Space
- ESA INDICATE – IN-situ Detection and alert system for micron-sized particle ContaminATion on laser optical surfacEs during AIT*
- ESA OMLET Laser momentum transfer orbit maintenance – Phase A/B1 (2026 Phase B)*

*from 2026



HiLASE Centre partners



TOSEDA s.r.o.

Who we are

- Status: SME
- 2012: R&D company focused on “Research, development and small-scale production”
- 2012: registered at ESA

What we are doing

R&D for mainly space industry

Testing (FTIR, NMR, AFM, TEM, Rheometer, Outgassing, etc.)

Manufacturing of small volume TOSEDA specialties (10 g - 10 tons per year).

Sale of licenses.

Cooperation with key EU partners from the space industry (Airbus, Thales Alenia Space, MT Aerospace...) and universities



Interesting outputs

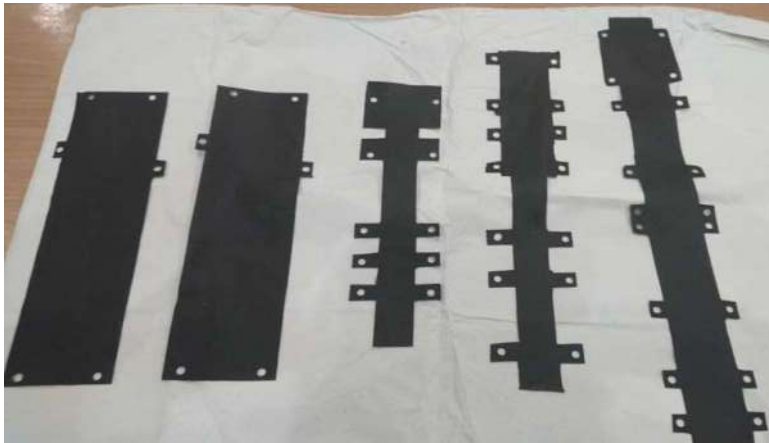
Within eleven successful projects, the following materials were developed:

- Polymeric liner with a high barrier effect for liquid propellant tanks.
- Adhesives for various application.
- Universal anti-corrosion coatings for various substrates.
- Low viscosity and long pot life polymeric binder for CFRP (Infusion).
- Black primer for optics.
- Nanostructured polyimides.
- Flexible aerogels
- Thermal Interface Materials

Example of production

TIM

Thermally conductive pads and pastes (electrically nonconductive) for satellites assembly:



4SPACE TOSEDA® Pad 169-2



4SPACE TOSEDA® Paste 149-3

Conclusion

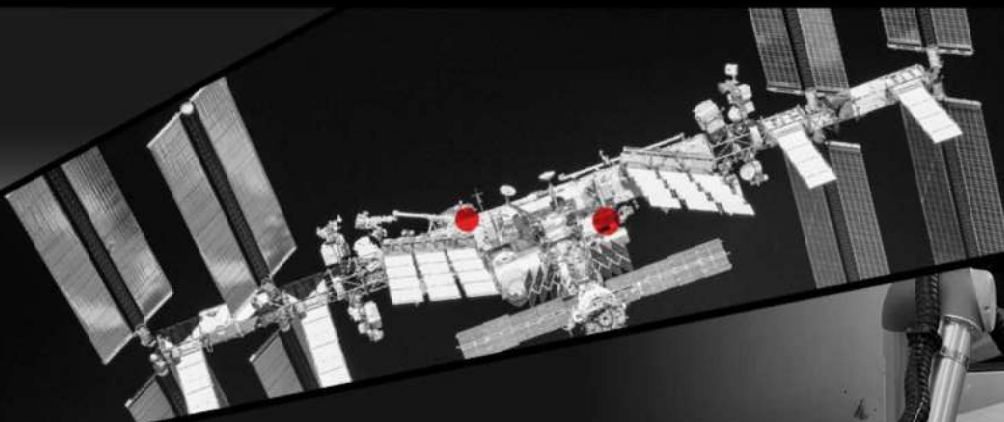
We are open for professional collaboration in material science

- Developing new materials
- Production of materials already developed by Toseda

jiri.zelenka@toseda.cz
marketa.zelenkova@toseda.cz

ADVACAM
Imaging the Unseen

Imaging and particle
tracking cameras

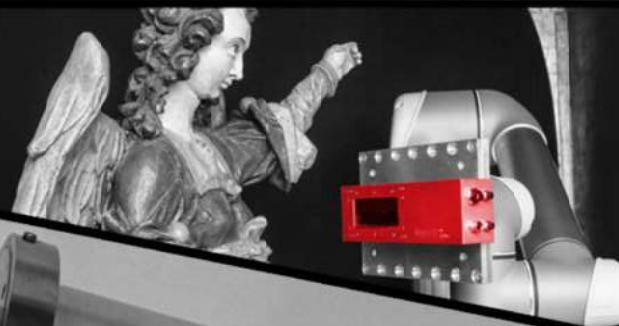


rd radalytica
One machine rules them all!

Robotic CT



remedical
MEDICAL
IMAGING
APPLICATIONS



INSIGHTART

Art inspection

rm remedical®
powered by **rd radalytica®**

Medical imaging applications



ADVASCOPE
accelerating particle detection

Electron microscopy

Who we are?

ADVACAM
Imaging the Unseen

> IMAGING THE UNSEEN

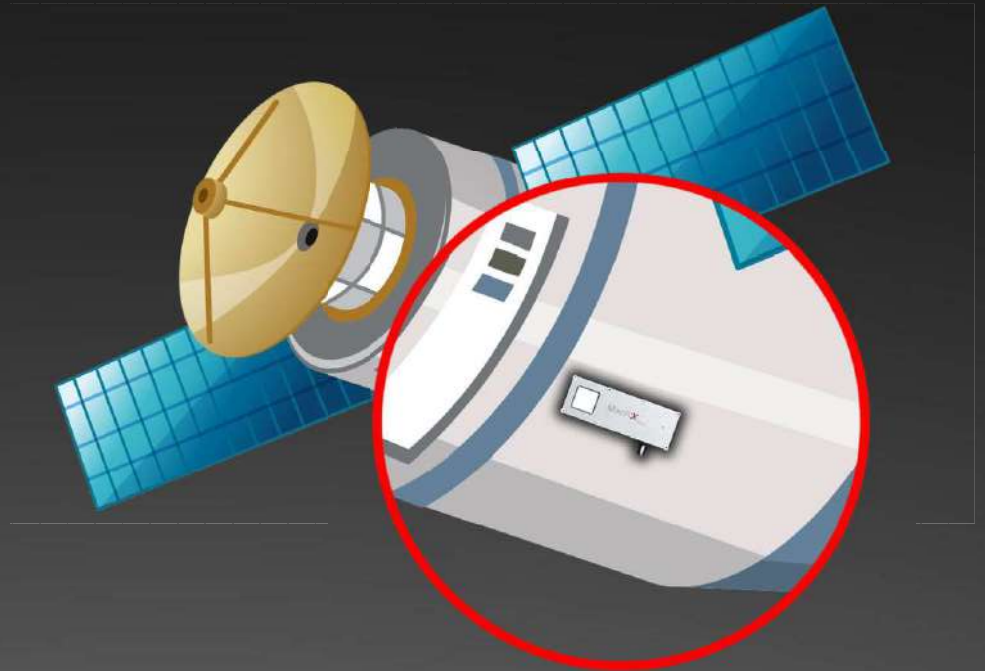
We design and produce cameras for material analysis, non-destructive testing, color radiography, or radiation safety

> 30 YEARS OF DEVELOPMENT

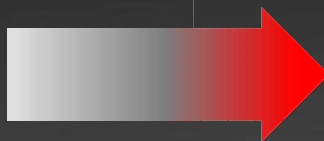
Based on CERN single-photon counting technology, our cameras revolutionize a range of industries, from space to medicine

> CUSTOMIZATION

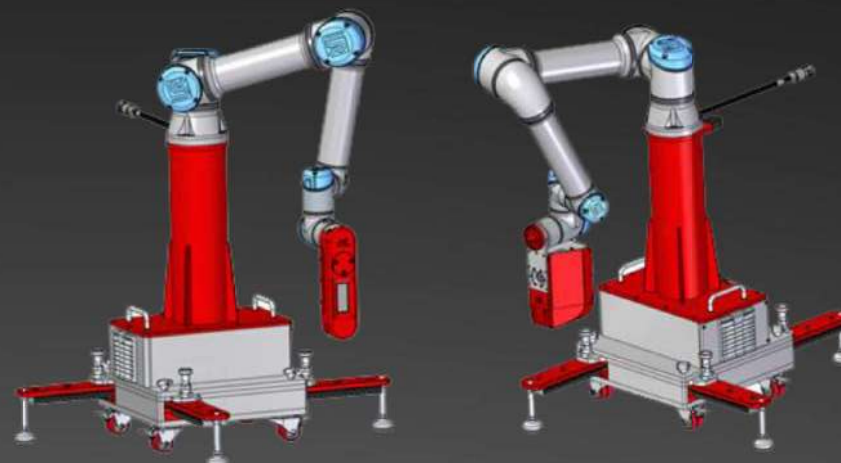
Standard product portfolio & customers tailor made solutions



RadalyX – ROBOTIC CT **SCANNER** by Radalytica



rd radalytica®
One machine rules them all!

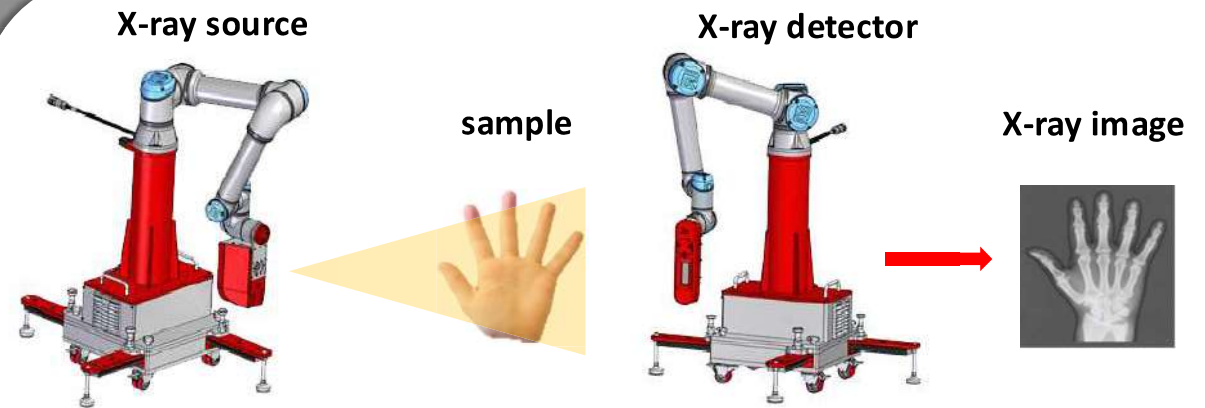
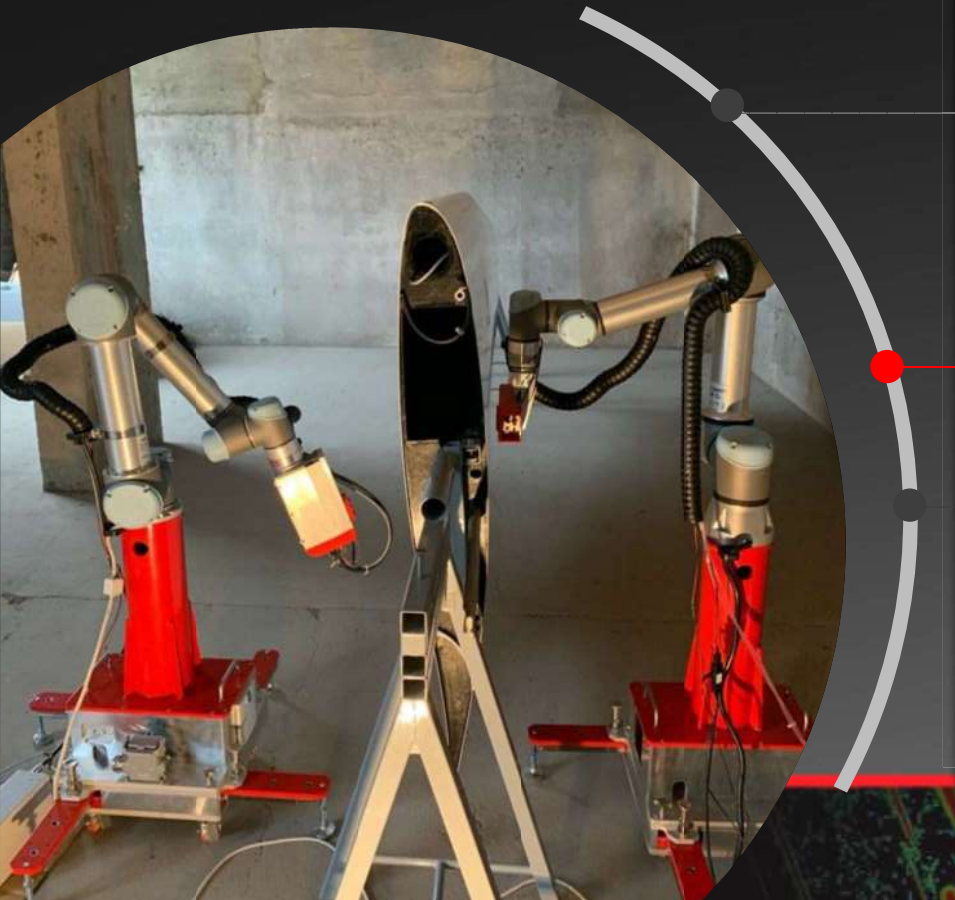


Portable 6-axis robots carrying variety
of imaging modules for NDT

X-RAY IMAGING MODULE

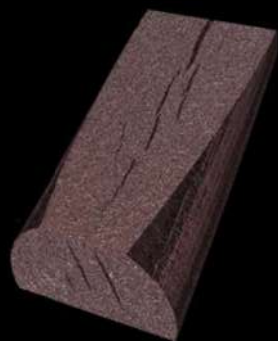
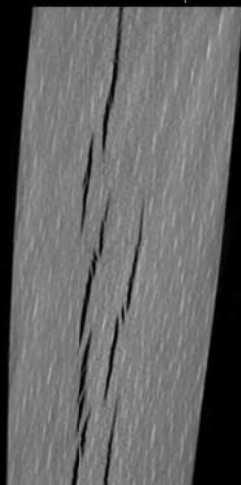
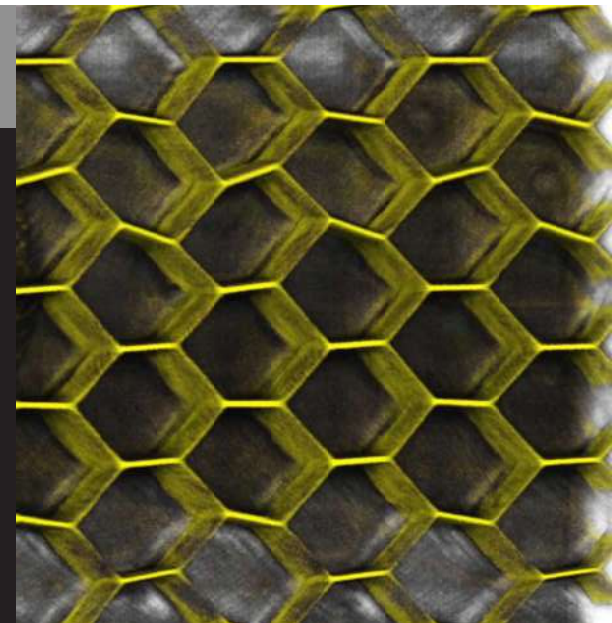
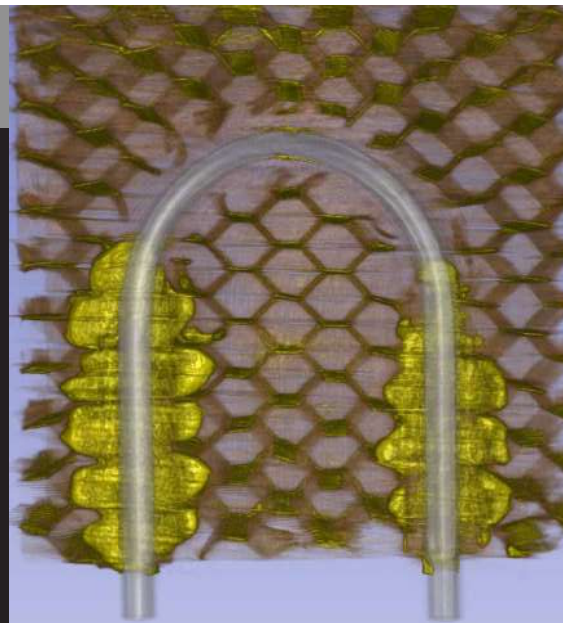
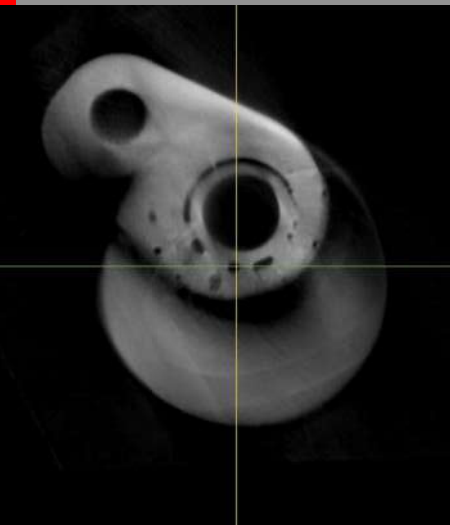


2D and 3D scanning in one system

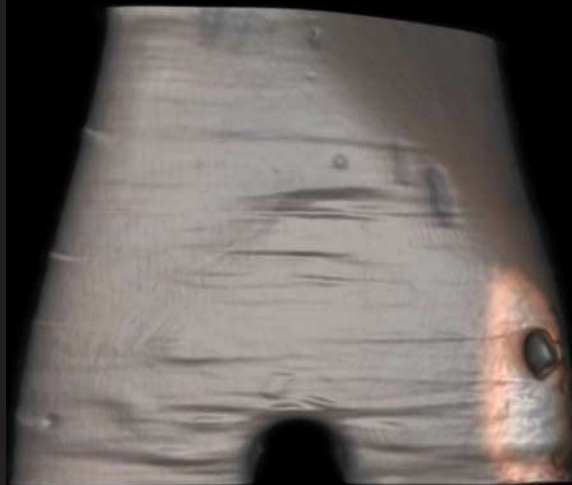


- Robot 1: X-ray tube
- Robot 2: digital detector
 - **Single photon counting**
 - **Direct conversion (1mm thick CdTe)**
 - **55µm pixel size**
- 6 + 6 axes =>
- flexible scanning ... “virtual bending of the sensor along curved shapes)
- Up 1.0 x 1.0 m² scan area
- Fully automatic run
- Operator setups scan range and gets image ... no film developing!

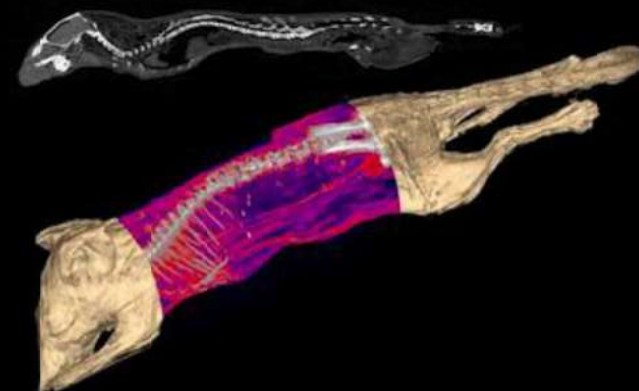
FULL CT: VARIETY OF APPLICATIONS



3D VISUALIZATION OF CT MICRO DATA
FOR NDI OF INNER STRUCTURES



3D VISUALIZATION OF CT MICRO DATA
FOR NDI FROM DIFFERENT ANGLES



3D VISUALIZATION OF CT MICRO DATA
FOR NEW TREATMENT SOLUTION

Space Heritage & Space Solutions

ADVACAM
Imaging the Unseen

Name	Date Flown	Mission	Location	Objective	Vehicle	Number TPX
REM	2012	ISS	LEO	Demo	ISS	5
Proba-V	2013	Proba-V	LEO	Science	Proba-V	1
BIRD	2014	Orion EFT-1	LEO/MEO	Demo/Science	Orion	2
VZLUSAT-1	2017	VZLUSAT-1	LEO	Demo/Science	2U CubeSat	1
REM2	2018	ISS	LEO	Ops	ISS	7
MPT	2017	ISS	LEO	Science	ISS	2
Biosentinel	2020	ISS	LEO	Science	ISS	1
ISS-HERA	2018	ISS	LEO	Demo	ISS	3
AHOSS	2020	ISS	LEO	Demo/Ops	ISS	3
LETS(1)	2023	Astrobotic 1	Lunar Surface	Science	Peregrine	1
LETS(2)	2025	Berensheet 2	Lunar Surface	Science	Berensheet 2	1
HERA	2022	Artemis 1	Lunar Orbit	Ops	Orion	3
Biosentinel	2022	Artemis 1	Solar Orbit	Science	Cubesat	1
VZLUSAT-2	2023	VZLUSAT-2	LEO	Demo/Science	3U CubeSat	1
JoeySat	2023	OneWeb JoeySat	LEO	Commercial	JoeySat	1
HERA	2023	Polaris Dawn	MEO	Science	Crew Dragon	1
HERA	2025	Artemis 2	Lunar Orbit	Ops	Orion	6
HERA	2025	Artemis 3	Lunar Orbit	Ops	Orion	6
ARES	2025	Artemis 3	Lunar Surface	Ops	Starship	>=1
LEIA	2024	CLPS Lander	Lunar Surface	Science	TBS Lander	1
ARES	2026	Artemis	Lunar Orbit	Ops	Lunar Gateway	2
Space Rider	2025	Space Rider	LEO	Science	Space Rider	TBD
Lunar Gateway	2025	Lunar Gateway	Lunar Orbit	Science	Lunar Gateway	TBD





Czech-Spanish Space Industry Day

Igor Paulíček
June 3, 2025

Groundcom Introduction

SATELLITE COMMUNICATION SOLUTIONS

Ground station segment for
communication with **LEO satellites**



Commands
and control



Telemetry



Data
download



Groundcom Long term strategy



MOTHER GS
Czech Republic



DEPLOYED
Finland, Kenya



PLANNED
Canada, Australia, USA, Saudi Arabia, UAE, Chile

Groundcom provides **infrastructure as a service**
i.e. GSaaS = Ground Station as a Service

We build and operate a **global network of ground stations** available for customers for TT&C and payload data downlink across the spectrum (VHF, UHF, S, X bands)

Our target customers are **constellation operators** (including Earth-observation and telecom applications etc.)

Groundcom Where we are



GC GS
VHF/UHF,
Tampere,
Finland, 2023



GC GS S-band
installation,
2024



GC GS UHF, Nairobi, Kenya, 2024

- Ground stations installed in **Europe, Africa, Middle East**
- Contracted pilot customers **Earth-observation & IoT constellations**
- Looking for **Partners** and space **Leaders**



Thank you!

Igor Paulíček

igor.paulicek@groundcom.space

+421 944 975 045



**Company
presentation**

About us

Hikade Technologies

HIKADE
TECHNOLOGIES

The company

- Founded in 2022, based in Brno
- Specialized in complex R&D projects
- Focus on space, defense and cryovacuum testing
- Expertise in numerical simulations, mechanical design and construction
- Tailor-made solutions, including full-cycle development & prototyping

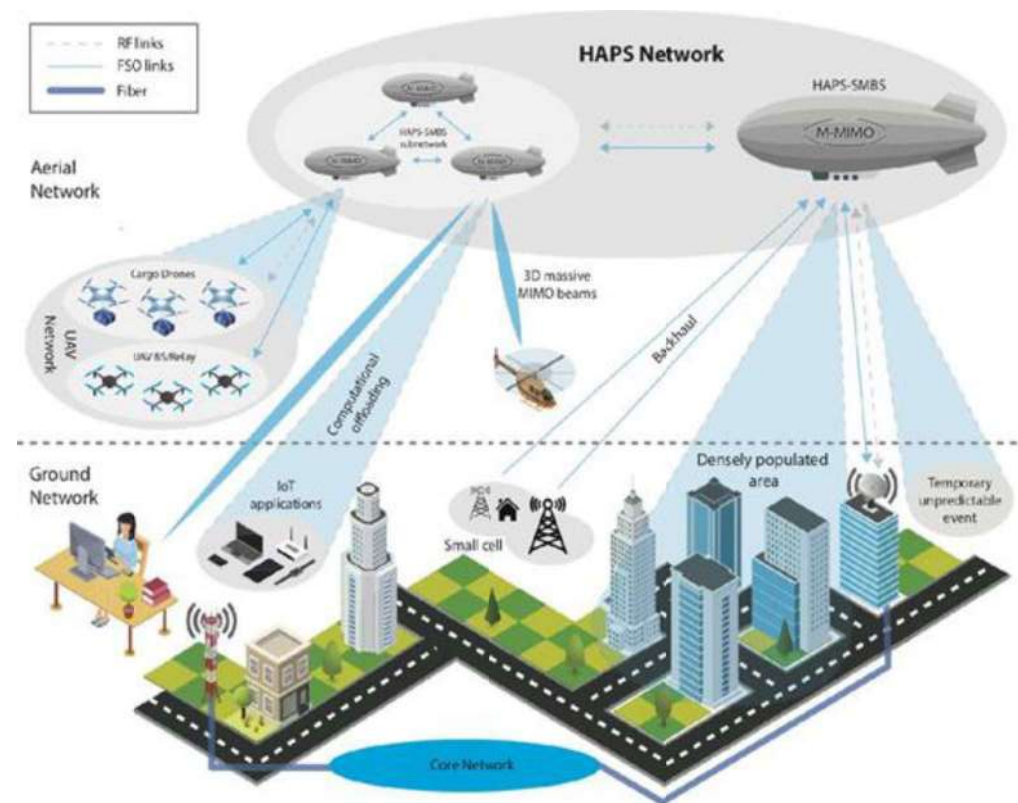


Portfolio Aerospace

HIKADE
TECHNOLOGIES

Gimbals

- Design positioning devices for space, aerospace, and ground segments
- Stratosferical gimbals design for **HAPS** (high altitude pseudo satelists)
- HAPS operate at **15 - 30 km** above Earth
 - Moderate deployment / operational costs
 - Very fast and **repeatable deployment**
- They significantly improve
 - Signal latency
 - **Coverage**



Solution – Product

Stratospheric Gimbal

HIKADE
TECHNOLOGIES

Gimbal PATRON

- **Two-axis** positioning device for the stratosphere
- Gimbal enables
 - Stabilisation of HAPS payloads (cameras, data transmitters, etc.)
- Possible uses:
 - Environmental monitoring and disaster management
 - Monitoring with **high GSD** visible spectrum
 - Aerial imaging
 - Space observation (asteroids, **space debris**)





- Purkyňova 2836/79a, Brno 612 00, Czech Republic
- info@hikade.cz
- +420 723 935 916
+420 739 322 845



UpVision

Safety in the air and on the ground.

UpVision

AIRSPACE ACCESS FOR DRONES

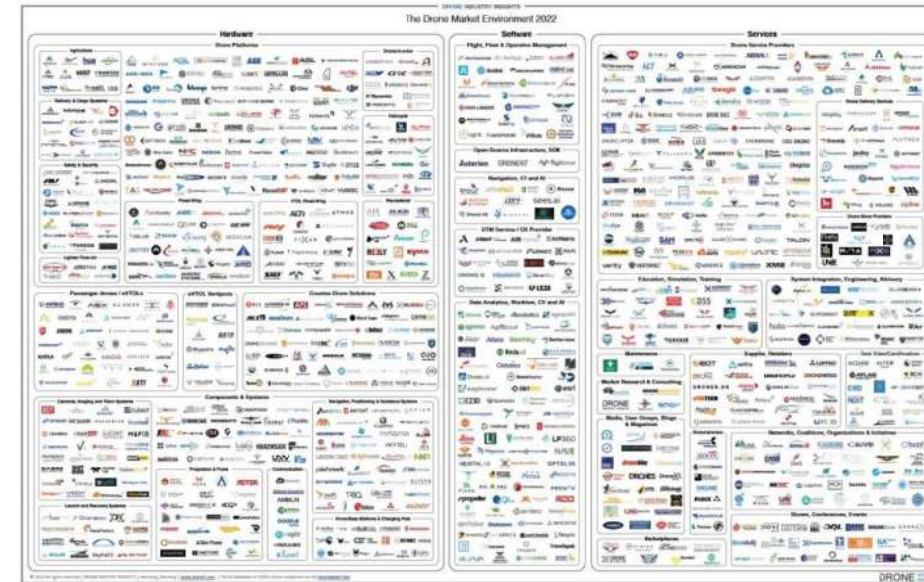
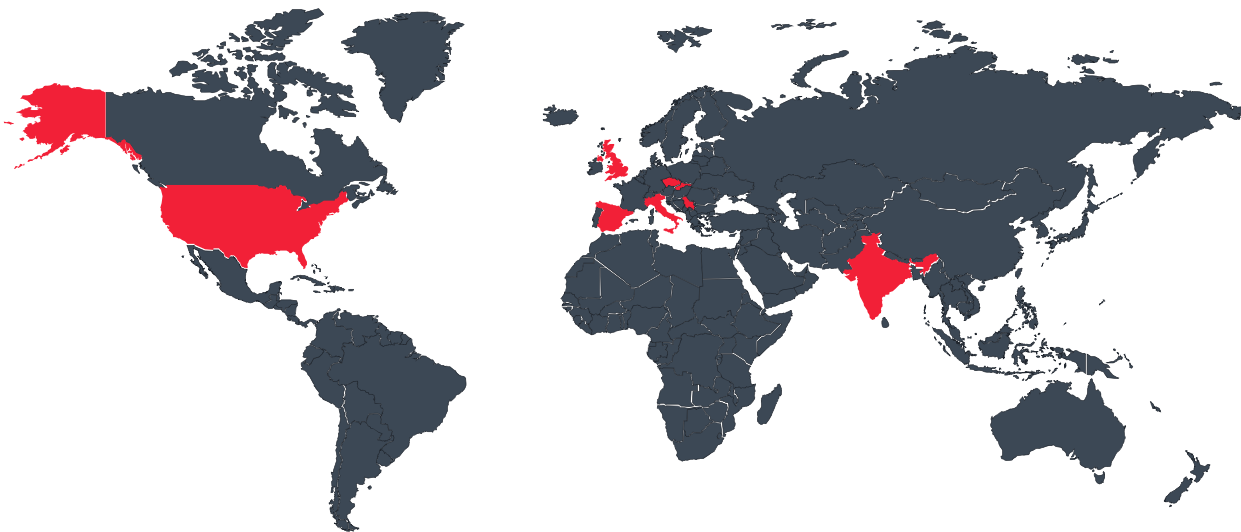
- \ One of the largest drone operators in the Czechia
- \ Co-founder of the UAV Alliance Czech Republic
- \ Member of the expert groups (EASA, EC, EUROCONTROL, SPRS)
- \ Member U-space stakeholders network
- \ Focusing on the innovative and technical applications
- \ International research projects (ESA, EUSPA, SESAR)



UpVision

AIRSPACE ACCESS FOR DRONES

- CSG Aerospace
- First official drone demonstration of the drone delivery in Czechia (SESAR 2022)
- Only one Czechia drone operator in Drone Market Environment



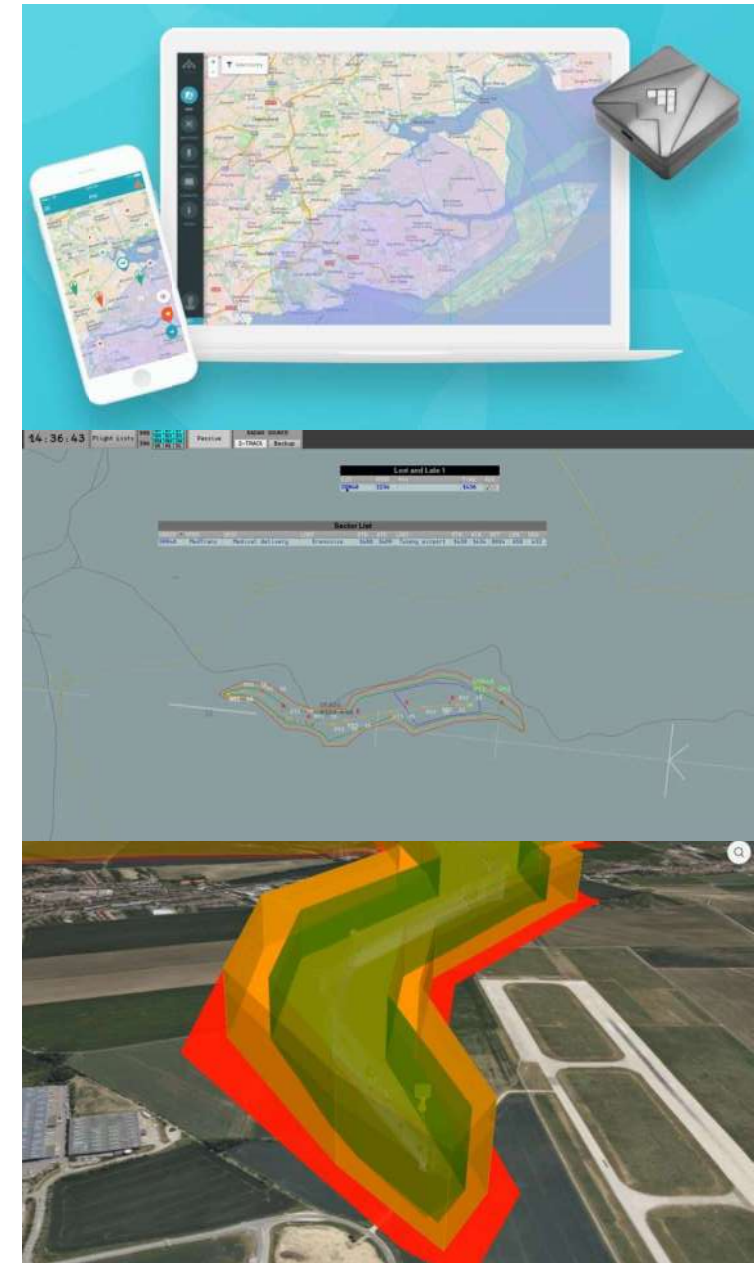
UPVISION

U-space/UTM, C-UAS

- \ MAIA UTM
- \ U-space service provider / USSP
- \ Common Information Service platform
- \ C-UAS
- \ CNS
- \ Data fusion

\ REFERENCES

ANS Czech Republic, CAA Czech Republic, Ministry of Transport, Honeywell, Airmap, DeDrone, DLR, Collins Aerospace



UPVISION

Research

- \ Special UAV usecases
- \ Drone delivery
- \ Urban Air Mobility
- \ U-space/UTM
- \ GNSS, blockchain
- \ Cybersecurity

\ REFERENCES

SESAR, ESA, EUSPA, Technology Agency CR

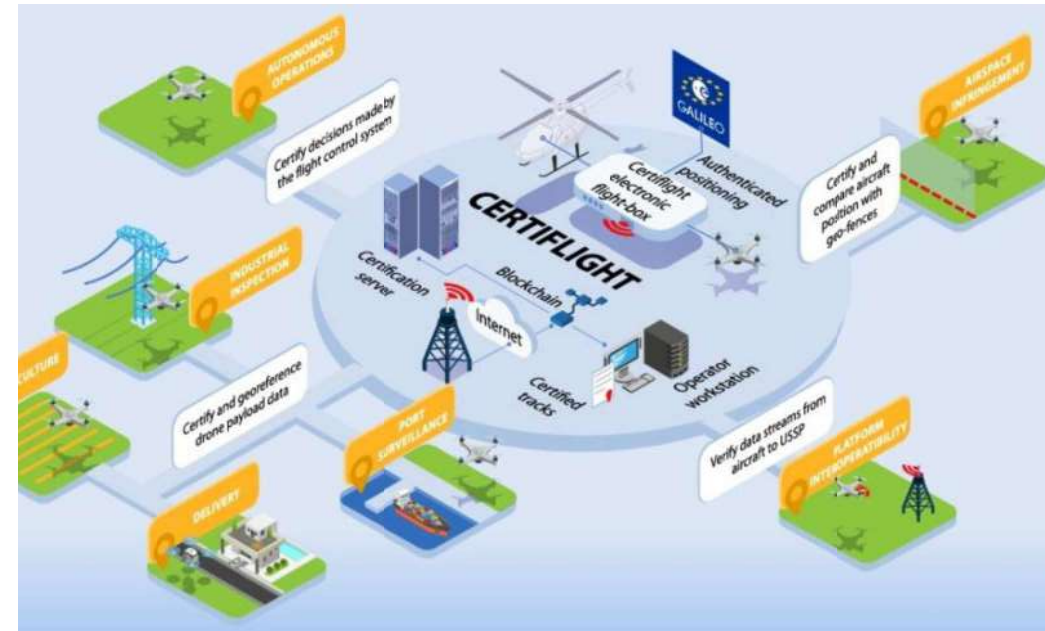
Honeywell, Synlab, VÚMOP, Univerzita Karlova, VŠB, E.ON, ČEZ Distribuce, ČEPS, VÚGTK, VÚZT, Mendelova univerzita, VÚT, ČVUT, JČU, HZS



EUSPA – CERTIFLIGHT

Certiflight will also legitimize the use of “smart contracts”, by activating the contractual condition on the basis of particular flight routes and performance.

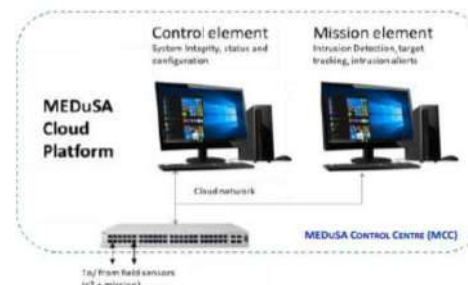
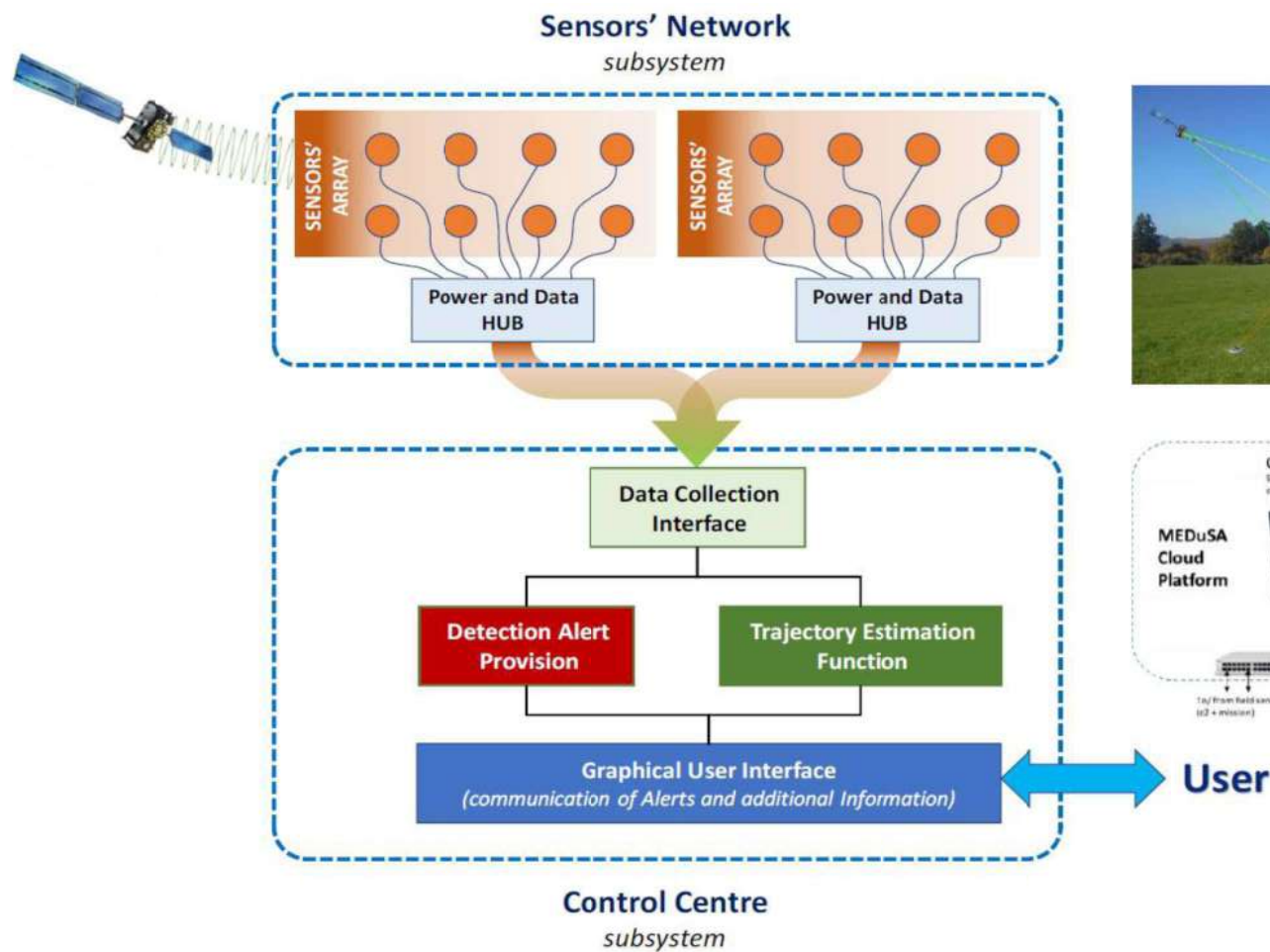
Several use cases have been already identified, and we will explore many more during the project.



The Certiflight system will establish the **"chain of trust"** of flight position information of drones and ultralight aircraft.

- The recorded flight tracks, with associated images and data acquired, will be useful for delivering a new class of UAS services for business, but also for law enforcement, auditing systems and accident investigations.

ESA – MEDuSA



Drone detection system

- in any visibility condition
- with drones flying at a low altitude and also
- with non-collaborative drones

Advancing Air Traffic Management Through Civil-Military Synergy

The ATM-EXCITE project is a groundbreaking initiative supported by the SESAR3 Joint Undertaking (Grant agreement ID: 101167361) under European Union's Horizon Europe research and innovation program. Its mission is to address the increasing complexity of air traffic management (ATM) by fostering seamless civil-military coordination through innovative technologies and methodologies. As the aviation sector faces unprecedented challenges in managing diverse air traffic, including drones and unmanned vehicles, ATM-EXCITE emerges as a vital response to ensure the safety, security, and efficiency of European airspace.

KNOW MORE



SEAMLESS CIVIL-MILITARY COORDINATION

Develop interoperable systems and protocols that enable efficient sharing of data, such as flight trajectories and surveillance information, without compromising security.



ENHANCED AIR TRAFFIC MANAGEMENT EFFICIENCY

Utilize predictive analytics and secure communication to minimize airspace congestion, reduce delays, and improve fuel efficiency.



STRENGTHENED CYBERSECURITY

Design robust systems to protect sensitive aviation data from cyber threats while ensuring the confidentiality and integrity of both civil and military operations.



ENVIRONMENTAL SUSTAINABILITY:

Support the EU's Green Deal by enabling smarter airspace use, leading to fewer emissions and energy savings.



Thank you for your attention.

UpVision

jakub.karas@upvision.cz

www.upvision.cz



Frentech Aerospace

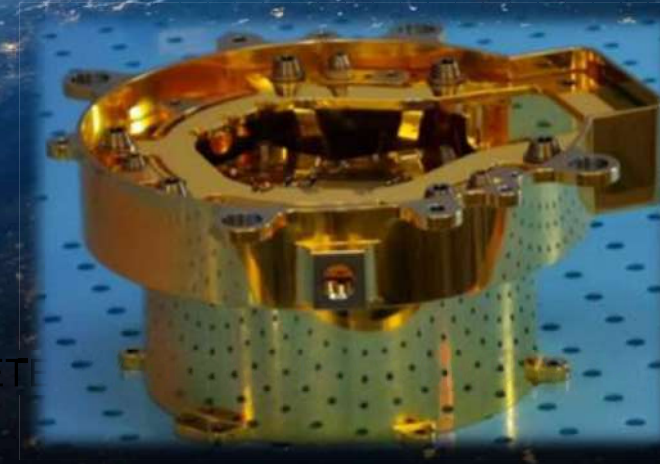
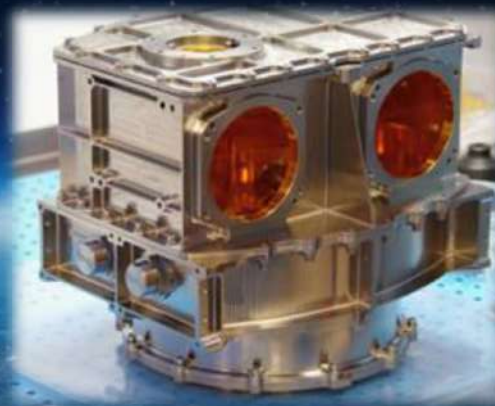


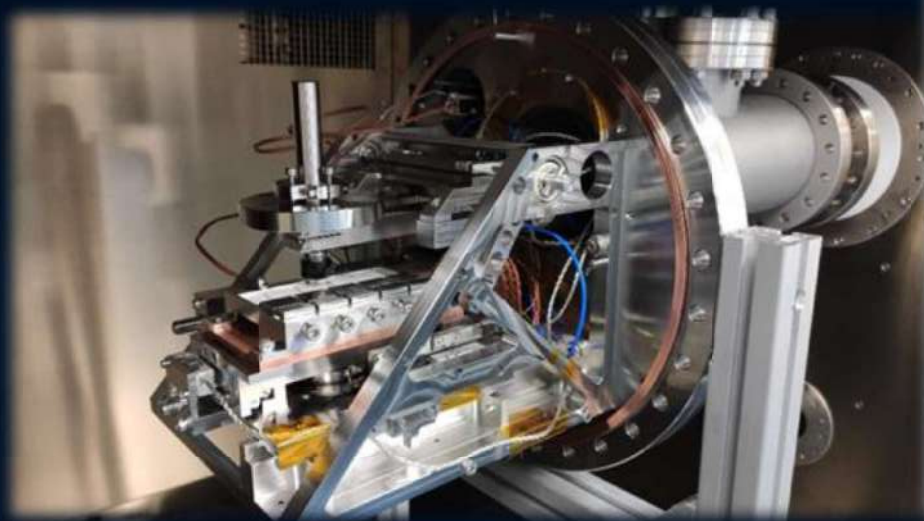
LETECKÝ PRŮMYSL
Frentech Aerospace



Technologies and equipment

Frentech Aerospace







Technologies and equipment

Frentech Aerospace

CNC Precision machining

CMM - geometrical testing

Cleaning

Assembly in Clean room ISO8 / ISO7 / ISO5

ESD protection

Thermal & Thermal Vacuum testing, Bake out
with TQCM monitoring

Thermal balance

Contamination particulate & molecular control

Leak testing

Titanium screws qualification

Mechanical testing



Contact

Frentech Aerospace s.r.o.

Jarní 977/48

614 00 Brno

Czech Republic

E-mail: mailbox@frentech.eu

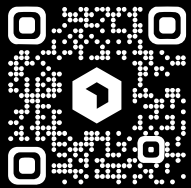
www.frentech.eu



ONE3D is the Czech leader in the field of product development and manufacturing using additive manufacturing and hybrid production.

The biggest production volume for 1,5m high products

AM materials: AlSi10Mg, Steel 1.4404 (316L), Steel 1.2709 (MS1)
Inconel 718, Titanium Ti64



www.one3d.cz
jan.prusa@one3d.cz

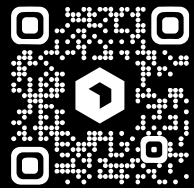




2024 - partner to Lockheed Martin in the F-35 programme for the Czech Army.

RnD project in the consortium together with PBS and HiLASE Centre.

Aim to develop and qualify an innovative manufacturing process for a component of the state-of-the-art F-35 aircraft.



www.one3d.cz
jan.prusa@one3d.cz

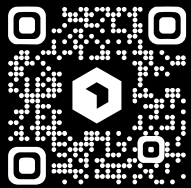




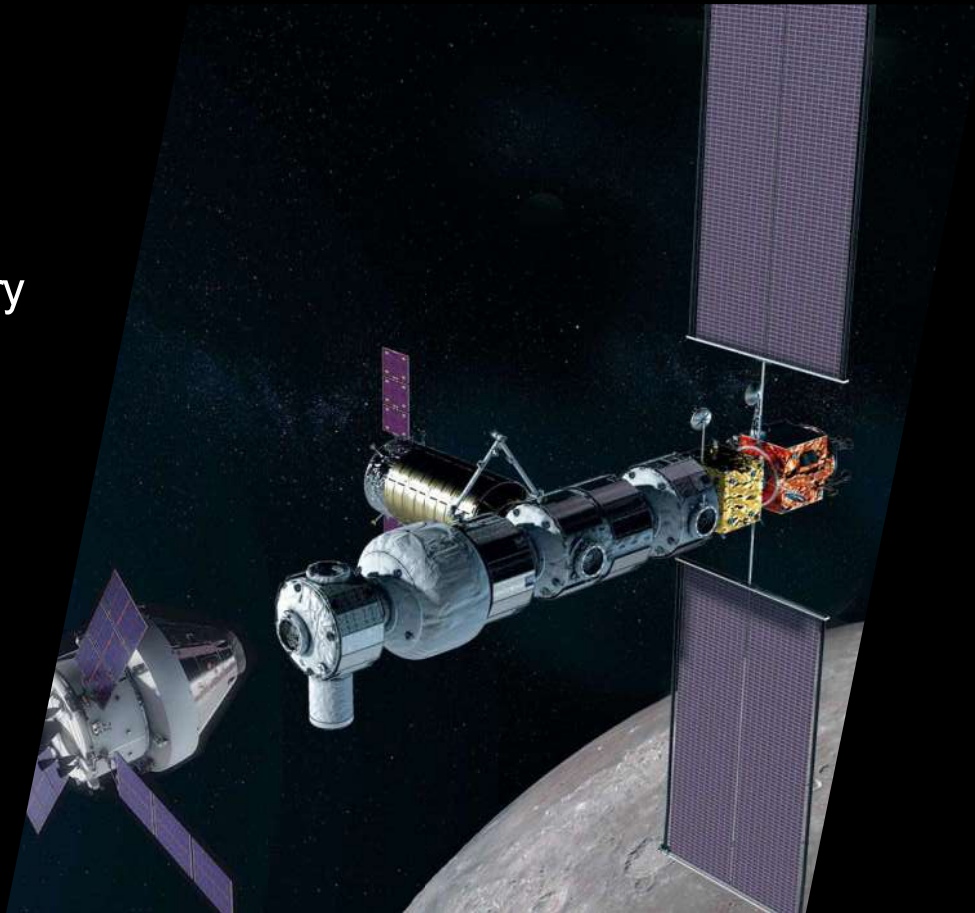
ESA BIC Czech Republic 2025-2027
Focus on CubeSat structures 3U-12U
Comply with ECSS standards

AM components for the Space Industry
– ESA, NASA, JAXA, New Space –
propulsion systems

Projects: LEO / Moon orbit



www.one3d.cz
jan.prusa@one3d.cz



References



5M

ABOUT COMPANY

- Czech private company
- Founded 1992
- 250 employees
- Turnover 25 mil.€.
- Member of **BSTG** – more than 400 employees

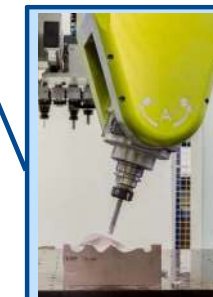


- Manufacturing company
- 17.000 m2 production space
- AS/EN 9100
- POA Part 21G
- NATO 49926



5M

- Manufacturing
- R&D
- Testing



5M Precision

- CNC machining
- CMM

Space Subsystems

solar arrays, radiation shielding

Composite Structures

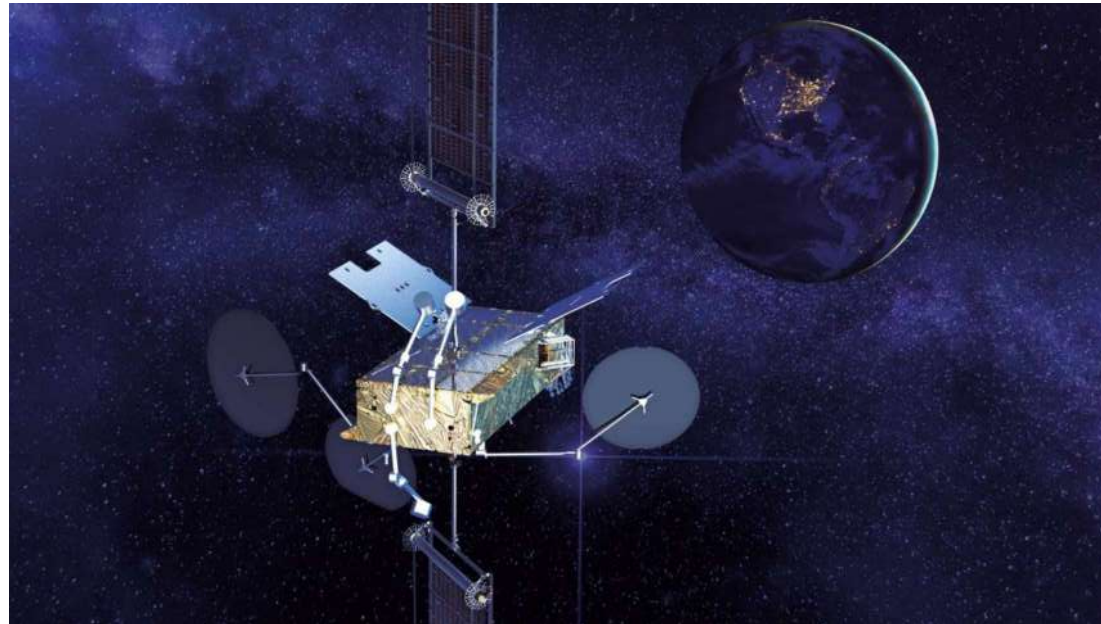
based on prepreg or LF Technology

Adhesives for Space applications

development and production of foil and paste adhesives

GSE for Space applications

design and manufacturing of manufacturing and testing GSE

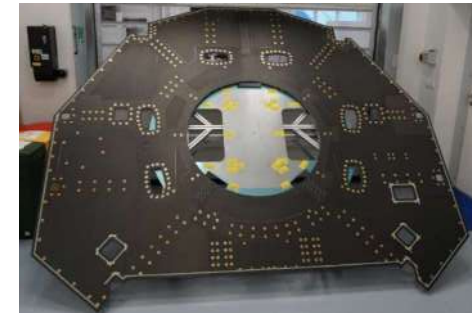
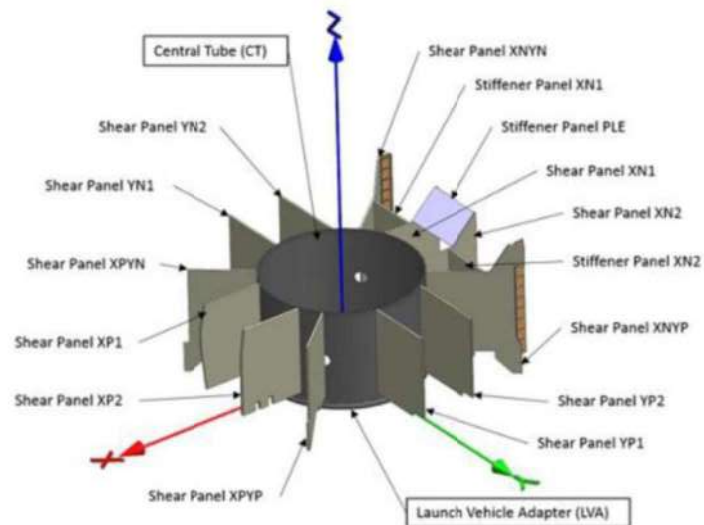


- FLEXIBLE SOLAR ARRAY (from 2013)
 - Several project with Thales Alenia Space
 - Composite Manufacturing for Space Applications
 - Flexible SA Mechanical Subsystem
 - NOVACOM II
 - Critical BB for SolarFlex
 - Development of flexible boom
 - Whole structure of SolarFlex including hinge yoke and flexible part
 - GSEs
 - Contract up to EQM
 - Currently several flying model already signed



Structures - sandwiches

- PLATO Service Module (SM) Panels (2020-2023)
 - Qualification of new prepreg for CFRP production process and measurement of allowables
 - SM CFRP panel production and testing
 - 5M primecontractor for ESA





Iguassu Software Systems



Evropská 657/120
160 00, Praha 6
Czech Republic
info@iguassu.cz

Petr Bareš / Jiří Dousek
3/6/2025
Czech-Spanish Industry Day
Prague



Iguassu Software Systems a.s.



ISS Heritage

- 1994 founded (as Science Systems CZ)
- 2000 became Czech SME through Management Buy Out
- 2004 started with GNSS/EGNOS (GMV support)
- 2005-2008 won 50% of CZ industry contracts in ESA PECS
- 2006 cofounded the Czech Space Alliance (CSA)
- 2007 won the 1st ESA competitive bid for Czech Republic
- 2011 started Space Situation Awareness activities (INSA)
- 2018 started developing ground and onboard s/w for Ariane 6
- 2018-now commercial products for GNSS, Space Safety (S2P)
- SME, < 10 persons including Spanish speaking staff

Main expertise in space

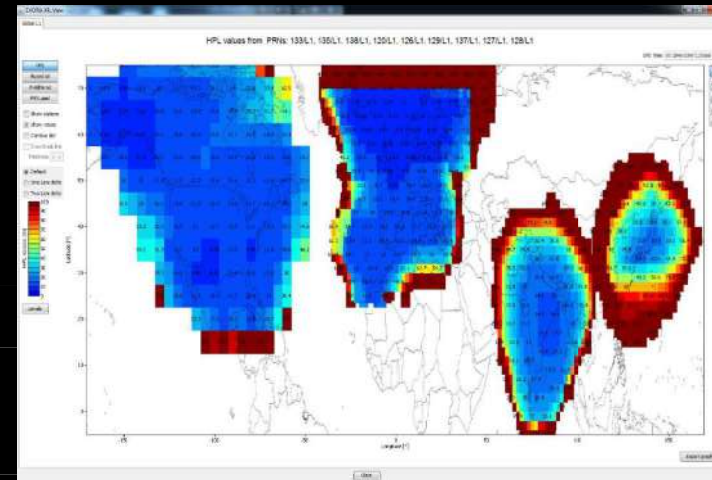
- **GNSS** - SBAS/EGNOS, Galileo
 - from educational tools to professional SBAS performance monitoring tools
- **S2P** - robotic telescopes, image processing, optical sensor qualification, NEO, space debris, Flyeye telescope, CREAM
- **Ariane 6**
 - Flight software : collect TM, and transmit to ground
 - Ground Software : process ground station data in real time – receive and process TM, and forward to the control centre.
- Satellite **communication** protocols (ESA ANTARES), aircraft communication traffic simulator (FP7 Ashley)

Products

GNSS

S2P

- **EVORA** – real time SBAS performance monitoring tool qualified to DAL E – in use in EGNOS by TAS-F and CNES, Japanese government research institute ENRI
- **SENDAI** – multi-constellation long term GNSS performance monitoring, and GNSS data mining (GPS, Galileo, Glonass, QZSS, Beidou)
- **SBAS Simulator 2** – sold e.g. to West Africa, UK, France
- **ASAP** – former ASAP upgrades (for Teplice)





Iguassu Software Systems a.s.

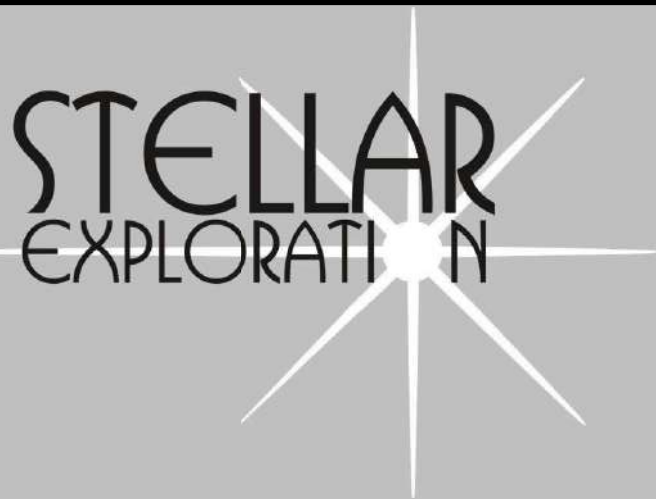


Clients and partners



Japan





Stellar Exploration

Richard Váňa, Development Engineer
vana.richard@stellar-exploration.eu
+420 776 530 705

*Czech-Spanish Space Industry
Day
02-06-2025*



La visión y misión

de Stellar Exploration

Nuestra misión es construir sistemas eléctricos de potencia, sistemas de propulsión química y equipos de RF para desbloquear un potencial imprevisto para los pequeños satélites.

En los próximos cinco años, nuestros sistemas completos avanzados seguirán siendo desplegados en la órbita y más allá, contribuyendo al crecimiento de la infraestructura espacial futura.



Stellar Exploration

Stellar Exploration s.r.o. es una pequeña y mediana empresa Europea que se especializa en **sistemas eléctricos de potencia, sistemas de propulsión química y tecnologías RF** para satélites pequeños. Somos un equipo de más de **25 ingenieros interdisciplinarios** que llevamos a cabo el desarrollo integral de nuestros productos en Praga y Brno, Republica Checa.

Sistemas de propulsión

Sistemas de WG contratados

Bomba de combustible



Sistemas de potencia

26+ baterías en el espacio

Unidades de PCDU entregadas



Tecnologías de RF

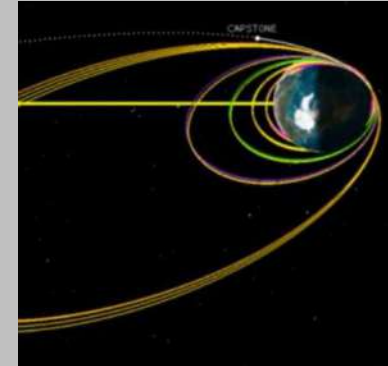
Antenas helicoidales y monopoles

Interfases de RF



Conceptos avanzados

Proyectos innovadores que avanzan las fronteras.



La experiencia y herencia de Stellar Exploration



Bomba de propelente como una tecnología clave



La mejor batería en el mercado



EPS entera para un vehículo de servicio en órbita

...y una serie de actividades para nuestros clientes Europeos y Estadounidenses incluyendo subsistemas completos.



Stellar Exploration necesita

Estamos buscando cooperación a largo plazo con compañías e instituciones dentro de los países de ESA PECS, AM y NMS.

Socios de proyectos I&D

con competencias complementarias a las nuestras

Proveedores y fabricantes

incl. EEE, PCBs, HW mec., procesos especializados

Integradores de satélites pequeños interesados

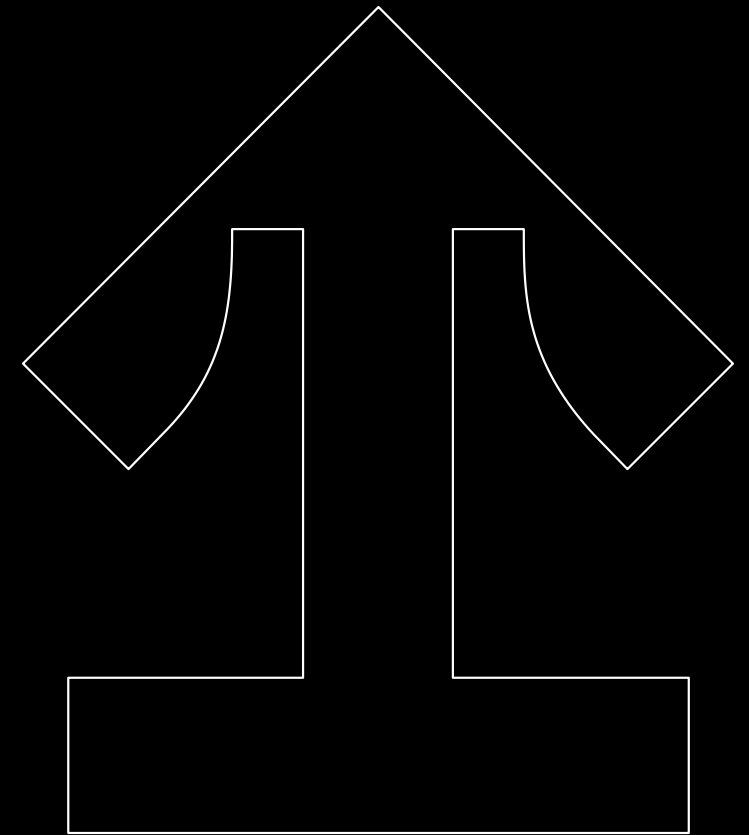
Sobre todo en la clase de 100 - 500 kg incl. constelaciones



Acerca de TRL Space

Somos integradores de sistemas de satélites y sondas.

Gracias a nuestro conocimiento y experiencia, somos capaces de cubrir todo el ciclo del proyecto. Comenzamos con la definición y análisis de la misión, seguidos por el desarrollo del sistema, durante el cual llevamos a cabo la ingeniería de sistemas, diseño mecánico, análisis estructural y térmico, desarrollo eléctrico y de software, adquisición de subsistemas, fabricación, integración, ensamblaje, pruebas, calificación y, finalmente, proporcionamos al cliente el lanzamiento.



This way up.



Nuestro trabajo



Soluciones satelitales

Soluciones basadas en drones

Productos y servicios

Misiones lunares

Presencia global de TRL Space

Nuestro encargo no es ofrecer servicios complejos ni suministrar un satélite completo. Ofrecemos una asociación. Trabajamos en conjunto. Aprovechamos las competencias existentes y ayudamos a desarrollar nuevas. Juntos construimos el sistema completo. Y luego, les dejamos con nuevos conocimientos que pueden utilizar para seguir construyendo y generar nuevo valor añadido.



Jakub Janík

Director de asuntos exteriores

janik@trlspace.cz

+420 793 987 330



Mission Critical Systems

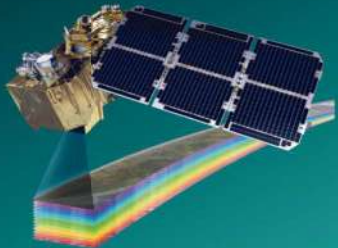
State-of-the-Art on-board systems for space vehicles

Space Systems & Applications

- ESC AEROSPACE offers services focused on aerospace **satellite payload** chains modeling, as well as a full **design of space qualified payloads**, its **implementation**, **testing** and **preparations** for a rocket launch.
- ESC AEROSPACE offers products: space qualified **on-board data acquisition**, **monitoring and control systems**, based on **DPU** with subsystems **OBDH**, **MMU**, **PCDU**, **RTU**, **SDR** and **ICU** for **optical** and **hyperspectral cameras**.



Products & Services

 escOBC escOBC is a powerful universal On-Board-Computer for new space satellite platforms and compatible with cubesat platforms. The product dimensions are matched with the PC104 form factor.	 escCSW SPACE QUALIFIED ON-BOARD SOFTWARE - Engineering support during project phases A, B, C/D & E - StartUp SW - Mission critical SW (stored in PROM) - Application SW (stored in FLASH memory / EEPROM)	 Hyperspectral camera ICU Camera ICU is a powerful payload computer for new space satellite platforms compatible with cubesat format intended for readout of various image sensors and hyperspectral data pre-processing.	 System Integration - Smart ammunition solutions, system engineering - Modular avionics for MALE/SMALL RPAS - Full HW/SW design, customized solutions - GNC for unmanned vehicles (UAV, UGV) - Navigation solutions in complex & contested environments - AI based image processing & guidance - Computational & communication units - Antenna tracking systems - Power management & digital bus solutions
 escMDE The Multipurpose Drive Electronics (MDE) is designed to drive up to four stepper motors used in the satellites' on-board applications.	 escSVF The escSVF is a complex testing suite designed to test the Control SW (CSW) of residing in the on-board computer of microsatellites or its Payloads / Instruments.	 Quantum Trusted Node Quantum Trusted Node is a key building block of your QKD (Quantum Key Distribution) infrastructure and your gateway to existing or future satellite or terrestrial QKD solutions.	



Mission Critical Systems

State-of-the-Art on-board systems for space vehicles

Meet us &
Contacts

Richard Sysala, CEO

Meet us, CYSAT Paris 5/25, IDET 5/25, SpaceTechExpo Bremen 11/25, Eurosatory 6/26

Call & Write us, +420 604 347 014, richard.sysala@esc-aerospace.com

Visit us, Cs. armady 14, Prague, Czech Republic, Europe

Distributors, Hamburg, Prague, Orlando, Perth, Toronto, Munich





GISAT

Delivering Insight from Space

Jaroslav Dufek <jaroslav.dufek@gisat.cz>

Spain – Czech Republic SPACE INDUSTRY DAY, Prague, 03 June 2025

GISAT at a glance

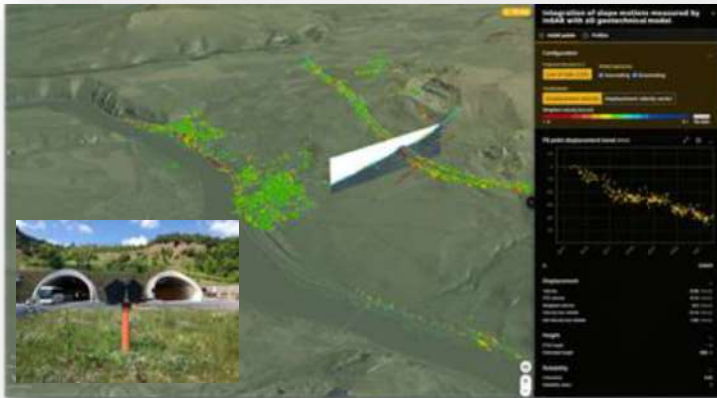
- **Private SME** since 1991
- Operational **Earth Observation** services & geospatial analytics
- **Global client base**
 - IFIs (*WBG, ADB*)
 - European institutions (*EC DGs, ESA, EEA*)
 - Administrations and private companies
 - Spanish footprint (common partner with EO and geospatial institution and companies): GMV, UMA, UAB, INDRA, Tracasa, ...



Infrastructure, Utilities & Geohazards

Monitoring infrastructure & constructions

Preventing infrastructure failure, guiding maintenance

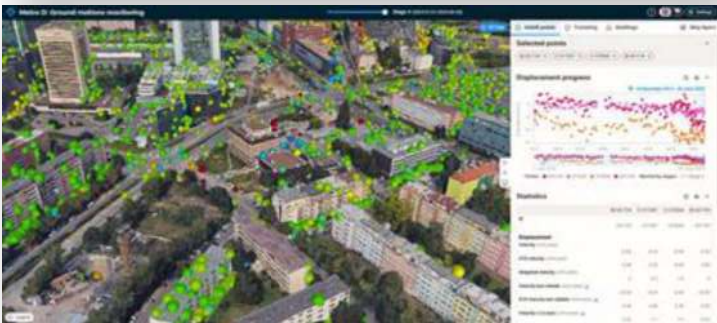


Active slope instabilities

Subsidence

Structural health

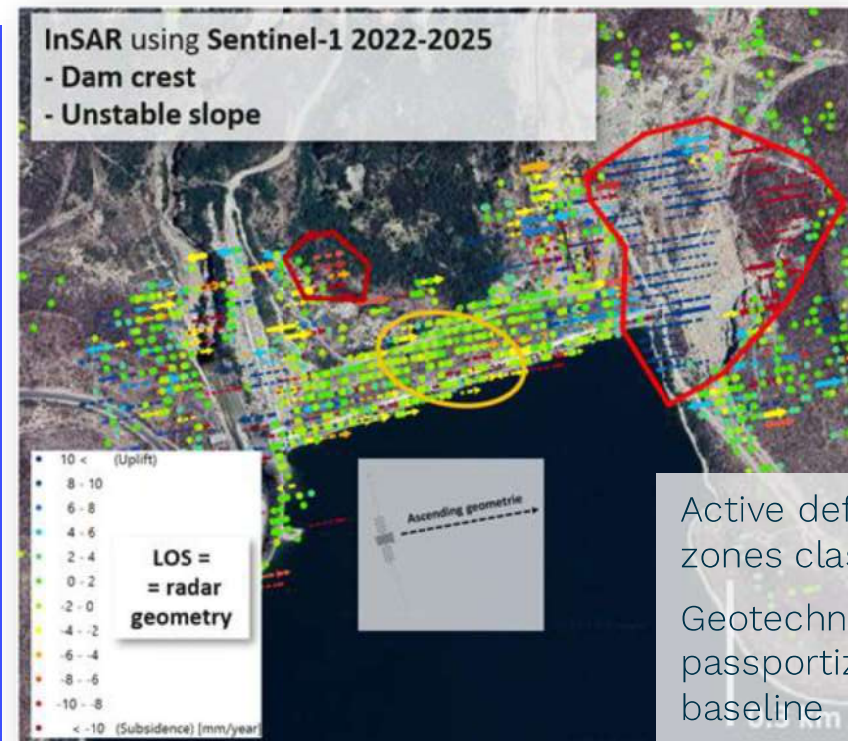
Impact



Examples: Highway stability, Subway construction (new metro line) settlements, Czechia

Dam safety

Supporting dam's life-cycle, emergency monitoring



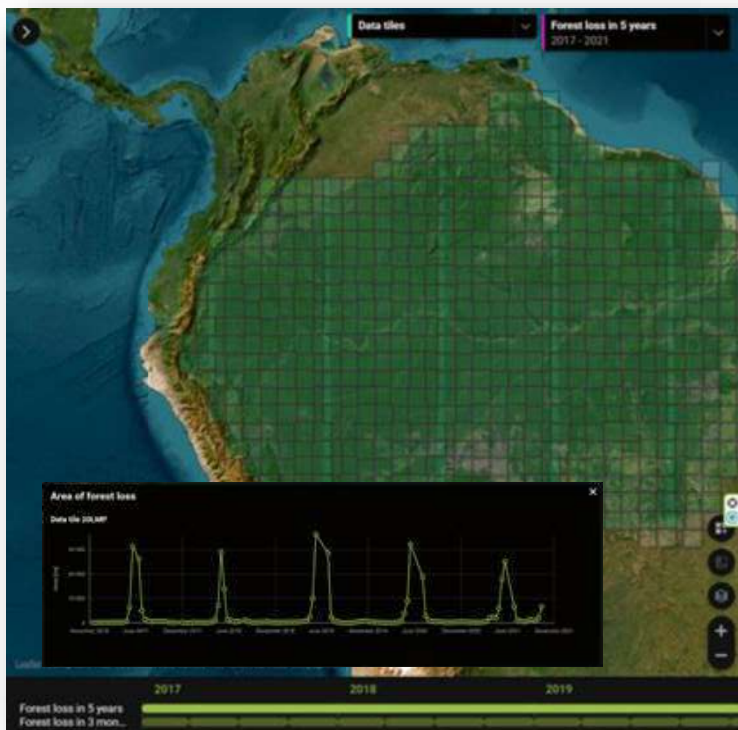
Active deformation zones classification

Geotechnical passportization baseline

Examples: Safety assessment for dams in Mexico

Agriculture / Environment and Natural Resources

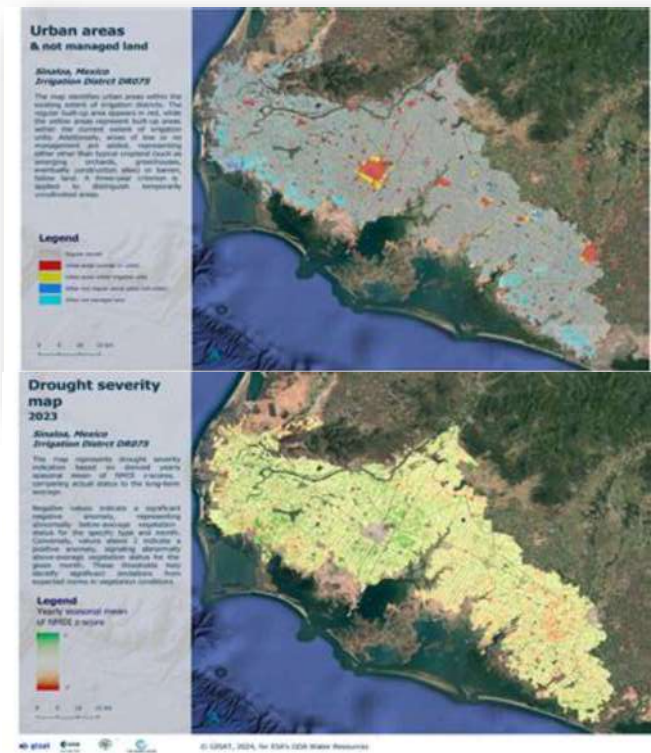
Agriculture & Forestry



Development
impact
assessment
Environment
degradation
Deforestation
rate

Examples: Amazonia (ESA S1AMA). More services in GDA precursors.

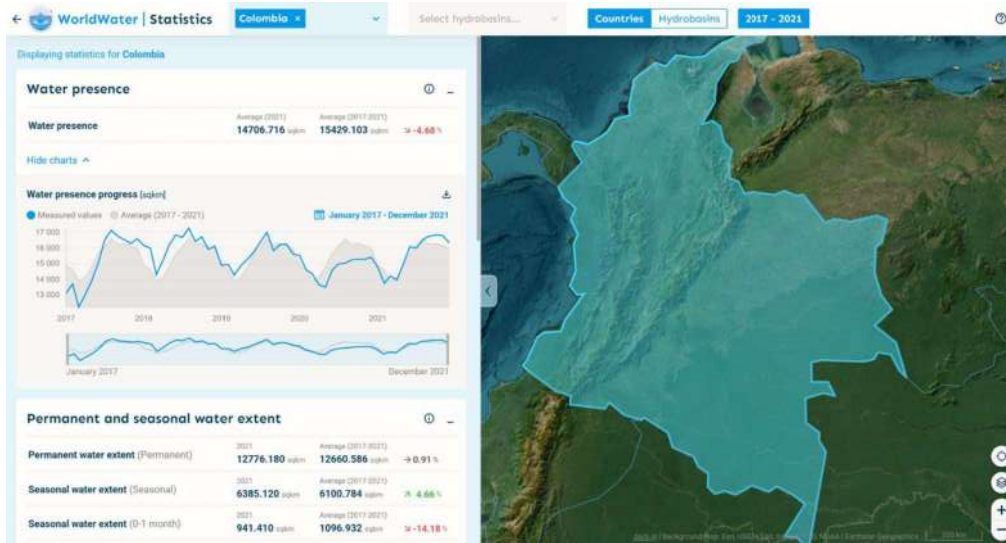
Land Use Changes - Water Demand



Land Use Change
Irrigation needs
Conflicting water
demands

Examples: Water credits management in Mexico (P164389). More services in GDA Water, GDA FFF etc.

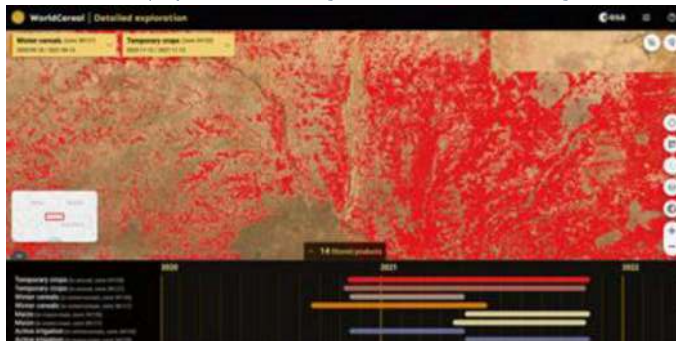
Data Exploration Platforms / Capacity Building



WorldWater project – Monitoring world inland water using Sentinel data



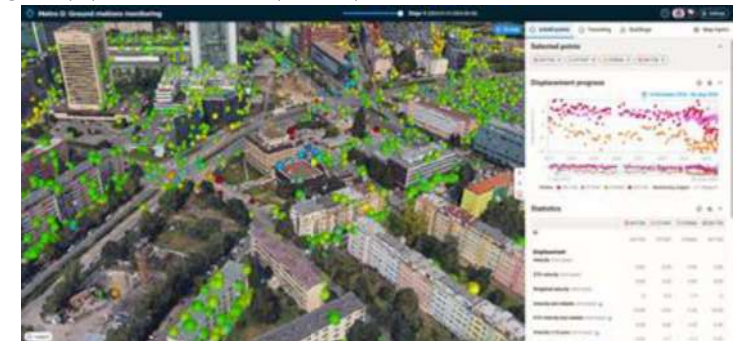
UN-Habitat – Urban Insights, global population and built-up development



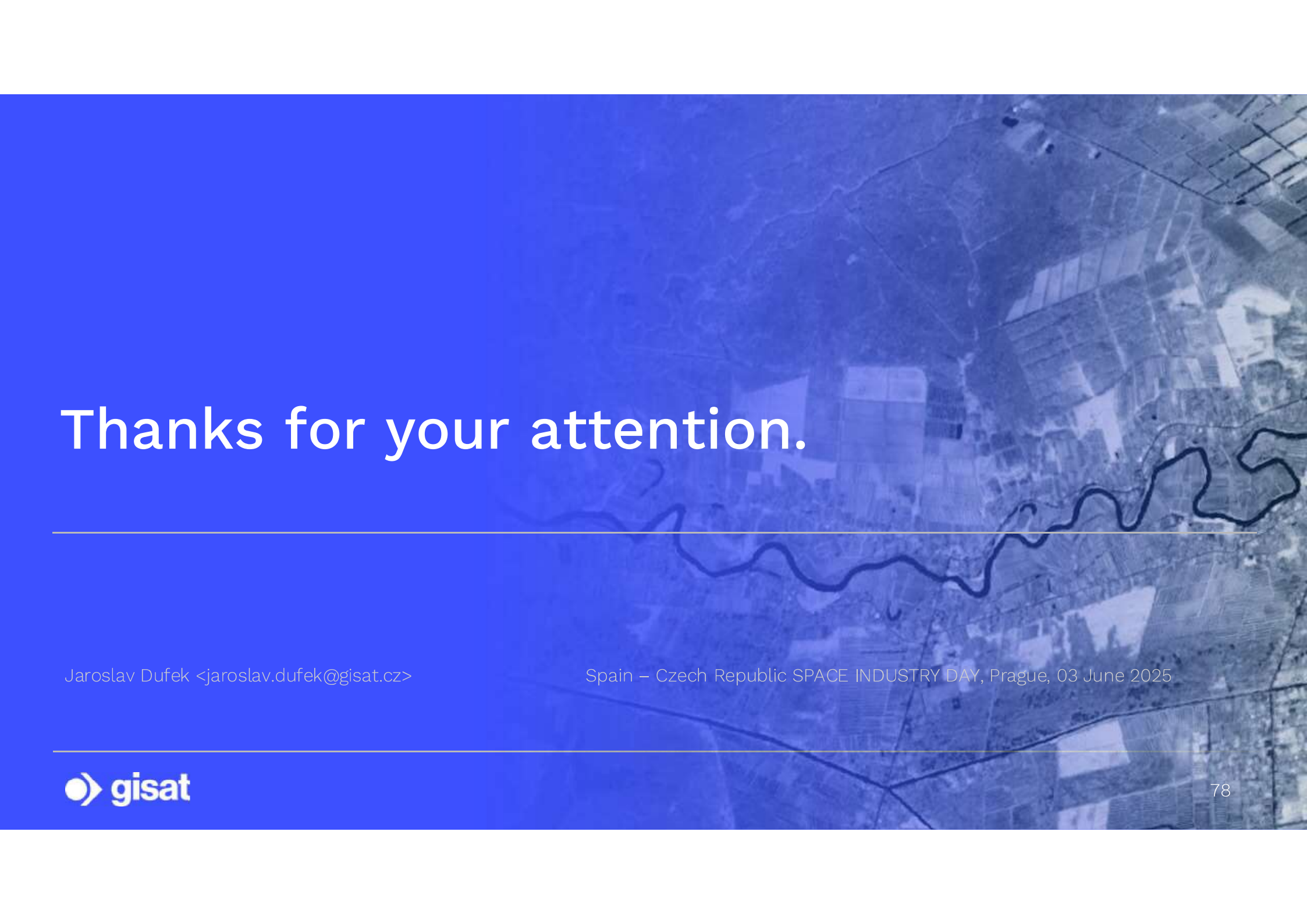
WorldCereal – Analysing and downloading various agri data



Copernicus EMS – e.g., EMSN091: Manila, EMSN060: Andalusia, ...



MetroD1



Thanks for your attention.

Jaroslav Dufek <jaroslav.dufek@gisat.cz>

Spain – Czech Republic SPACE INDUSTRY DAY, Prague, 03 June 2025