DISRUPTIVE SPACE SOLUTIONS FOR A BETTER TOMORROW

TURN-KEY MISSIONS | LAUNCH SERVICES | COMPONENTS

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CORPORATE BROCHURE

ABOUT US

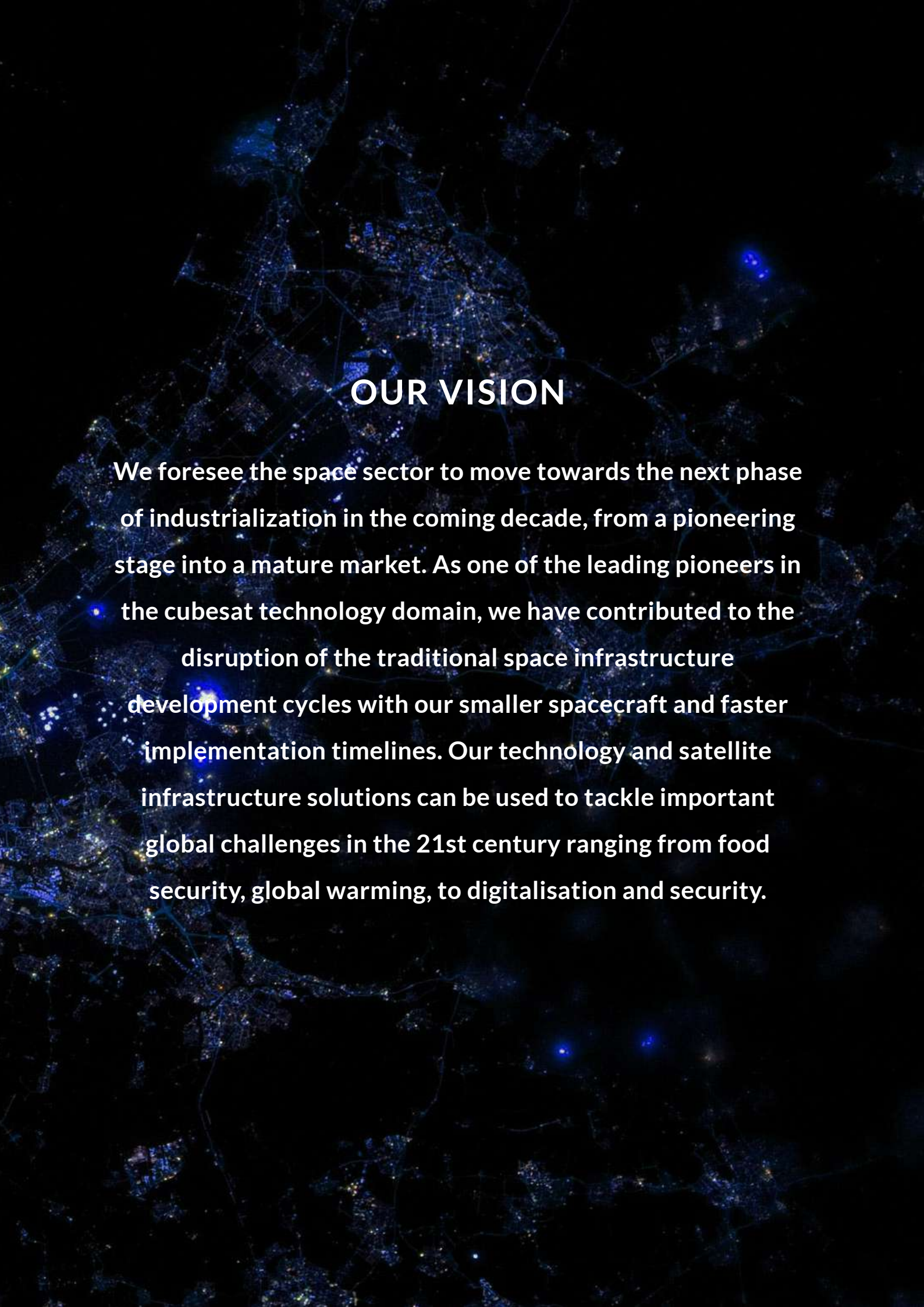
Founded in 2006, ISISPACE Group operates globally and serves customers worldwide in accomplishing their space missions and applications. ISISPACE specializes in realizing innovative turn-key small satellite missions including launch and operations for in-orbit delivery.

We design and deliver small satellite platforms, for single missions and constellations, either standardized or optimized in performance and size tailored to the mission needs. In addition to that, the company supports space capability building through training programs, knowledge transfer as well as CubeSat component sales.

ISISPACE has been set up as a vertically integrated company with a strong focus on systems engineering in order to be able to support our customers during satellite missions throughout the lifecycle. The company is active in research projects and has its own product development activities and product lines across every major space subsystem category.

We can offer the right solution for every customer, from subsystem to full mission and constellation building, through our unique and proven approach of full vertical integration which combines design, development, production, testing, launch services, and satellite operations into a single organization. Our main offices are in The Netherlands, while we also have an office in South Africa.

130+	30+	40+	2000+
employees	nationalities	missions enabled	subsystems delivered



OUR VISION

We foresee the space sector to move towards the next phase of industrialization in the coming decade, from a pioneering stage into a mature market. As one of the leading pioneers in the cubesat technology domain, we have contributed to the disruption of the traditional space infrastructure development cycles with our smaller spacecraft and faster implementation timelines. Our technology and satellite infrastructure solutions can be used to tackle important global challenges in the 21st century ranging from food security, global warming, to digitalisation and security.

Whatever you would like to achieve, if it involves small satellites, we are well-positioned to support you in achieving your objectives. Whether you are working on training the next generation of engineers, performing small scale science missions, or planning novel applications using globe-spanning constellations, we are ready to support you.

CAPABILITIES

ELEMENTS

For satellite integrators or those who prefer to develop their own satellites, we also offer many of the elements that we use on our own missions including satellite subsystems, ground support equipment, launch hardware and ground stations. For payload developers, we can help you speed up your mission realization with our standard CubeSat buses, ranging from 1U to 16U. Complemented by our launch services, engineering services and training, we can support you in every step along the way.

CUSTOMISATION

With our integrated capabilities, we offer fully custom solutions including the manufacturing of customized mechanical parts, electronics assemblies, and more complex, multidisciplinary satellite subsystems such as deployable solar arrays. Our services are available for one-off builds such as scientific instruments and payload interface units or for scale production. This includes spacecraft avionics, launch and ground equipment, as well as payloads for specific missions.

TURN-KEY MISSIONS

ISISPACE provides turn-key space solutions for both governmental and commercial customers around the globe. Our mission designs are relying on standard elements for robust, timely and affordable implementation programs while leaving ample room to tailor the system to the specific customer needs.

By using our experience and modular satellite design and standard mission building blocks, our satellite missions team is able to deliver small satellites **ready for launch in 6 to 15 months.**

SATELLITE-AS-A-SERVICE

Owning and operating space and ground infrastructure requires expert knowledge, dedicated teams and capital expenditures well before the results are tangible. This gap often creates a barrier in the adoption of innovative space systems in day-to-day operations even when small satellite innovations have drastically improved time-to-market and total cost of ownership. Our satellite-as-a-service concept provides all the benefits of a dedicated space infrastructure but without the hassle.

SUBSYSTEMS

ATTITUDE CONTROL

The ISISPACE MagneTorQuer board (iMTQ) provides maximum flexibility in placing actuators and magnetometer in a structure. Provides telemetry over I^2C. Flight heritage since 2013.

ANTENNA SYSTEMS

The ISISPACE Antenna Systems support a wide range of frequencies in VHF, UHF and S-band using either deployable elements or patch antennae. Flight heritage since 2010 with over 500 units delivered.

DATA HANDLING

The ISISPACE onboard computer (iOBC) is a high-performance processing unit based around an ARM9 processor with a clock speed of 400 MHz. Flight heritage since 2014.

COMMUNICATION

The ISISPACE CubeSat Communication systems support a wide range of frequencies in VHF, UHF and S-band. Enables your satellite with both Uplink and Downlink functionality. Flight heritage since 2016.

RIDESHARE LAUNCH

World-leading deployers, developed to accommodate any type of CubeSat, from 1U up to 16U. Fully qualified with flight heritage since 2013 on PSLV, Soyuz, Dnepr, Vega, Atlas V, and Falcon 9.

GROUND STATIONS

Low cost, turnkey solution designed to communicate with satellites in low earth orbit (LEO) that operate in either Amateur frequency bands or commercial bands. The frequency bands covered are VHF, and UHF and S-band.

SUPPORT EQUIPMENT

Off-the-shelf solution for handling CubeSat Flight Hardware. The jigs allow for a stable working environment protecting the satellite sub-systems from Electro-Static Discharges.

POWER

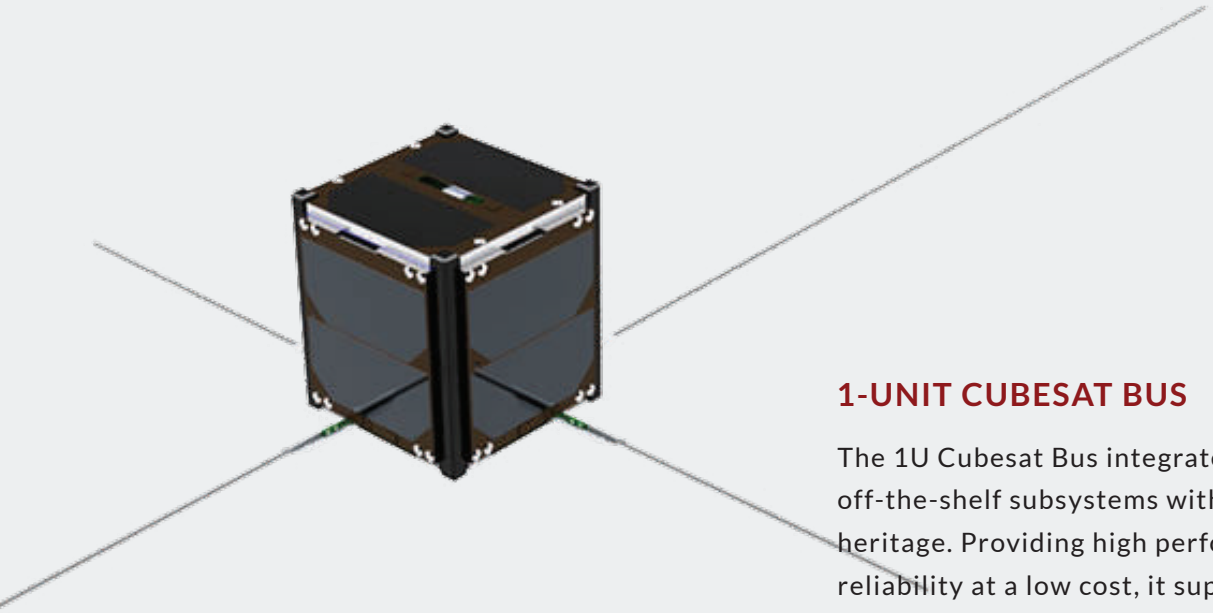
High-performance solar panels and arrays across a wide range of sizes. Our Power Systems have been designed with efficiency and reliability in mind while still remaining flexible for customer needs. Flight heritage since 2013.

STRUCTURES

Generic, modular satellite structures based upon the CubeSat standard. Multiple mounting configurations are possible, giving CubeSat developers maximum flexibility. Flight heritage since 2012.

ISISPACE satellite subsystems are highly standardized and typically available as off-the-shelf at fixed prices and standardized lead times. We have an excellent track record with dozens of units successfully launched into orbit every year.

CUBESAT BUSES

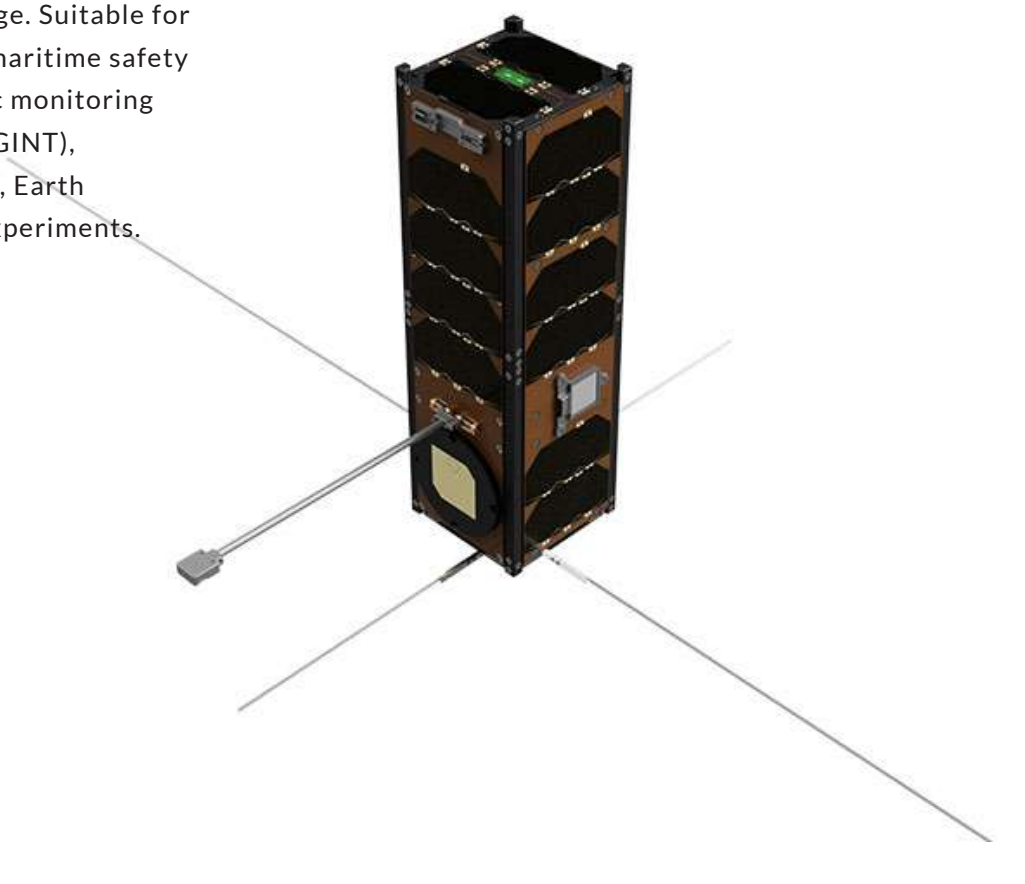


1-UNIT CUBESAT BUS

The 1U Cubesat Bus integrates reliable, off-the-shelf subsystems with successful flight heritage. Providing high performance and reliability at a low cost, it supports academic projects & experiments, in-orbit demonstration missions and radio communications operations.

3-UNIT CUBESAT BUS

The 3U CubeSat Bus contains the core flight-proven subsystems and offers advanced capabilities in a mid-sized package. Suitable for more complex missions such as maritime safety & vessel tracking (AIS), air traffic monitoring (ADS-B), Signals Intelligence (SIGINT), Internet-of-Things services (IoT), Earth Observation (EO) and Science Experiments.

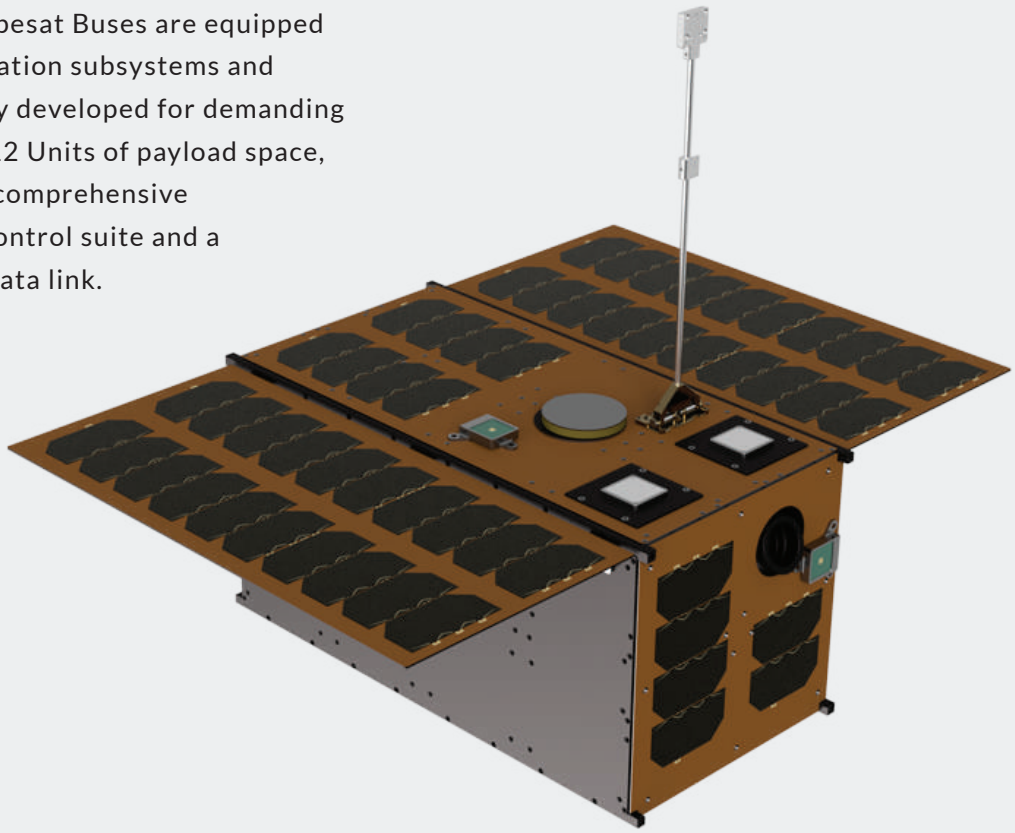


6-UNIT CUBESAT BUS

The 6-Unit Bus is enables ambitious military, commercial and scientific missions in domains such as Signals Intelligence (SIGINT), Geospatial Intelligence (GEOINT), Internet-of-Things services (IoT), air traffic monitoring (ADS-B), Earth Observation (EO) and Space Science.

12-UNIT/16-UNIT CUBESAT BUS

The 12U and 16U Cubesat Buses are equipped with our latest generation subsystems and instruments, specially developed for demanding missions. Provide 8-12 Units of payload space, substantial power, a comprehensive attitude/trajectory control suite and a high-speed payload data link.



SERVICES

MISSION DESIGN

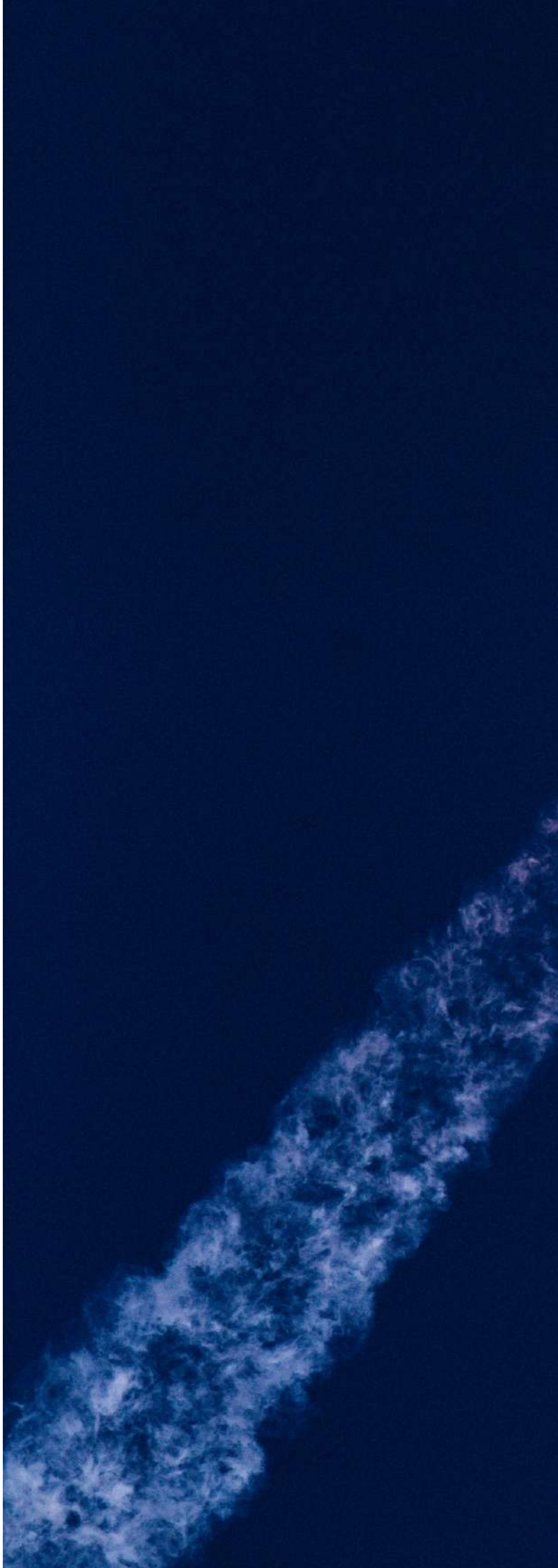
ISISPACE implements small satellite missions for customers for more than a decade and typically supports customer programs across the entire life-cycle, from initial mission concept design to satellite end-of-life and disposal. Our satellite solutions address many different applications domains and our turn-key solutions are tailor-made for the customer and specific end-use of the system.

PAYLOAD DEVELOPMENT

We can develop the intended payload for the spacecraft using our own payload development team or by teaming up with specialized partners. Our team is available to support most payload accommodation requests and we have several agreements with specialized organizations that develop miniaturized optical payloads if required.

ENVIRONMENTAL TESTING

We have many competencies and capabilities available in-house that are also available as stand-alone services. This includes environmental test services such as thermal testing and mechanical shock testing. If required, we are often able to link customers with more specialized organizations from our network.



500+

SATELLITES LAUNCHED

LAUNCH SERVICES

ISILAUNCH was created in 2007 as a subsidiary of ISISPACE, with one clear goal – to make your small satellite or CubeSat launch as simple and easy as possible for you.

We are proud to have provided services on numerous launch vehicles around the world. We are also continuously expanding our portfolio of launch vehicles and are actively working together with small launch vehicle developers to increase access to space for our customers. We can help you get onto any vehicle that you want. Either you are looking for a rideshare opportunity, dedicated launch or special orbit launch, ISILAUNCH can provide the right solution for you.

TRAINING

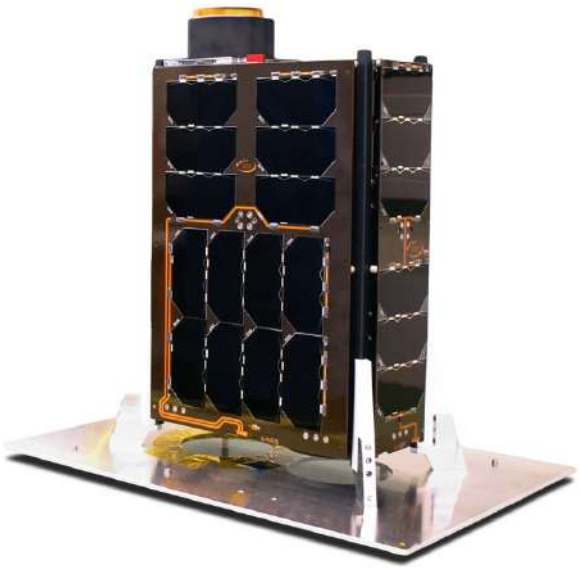
We provide a number of standardized training and support modules that can be specifically tailored to specific needs. We offer standalone courses on topics such as small satellite operations, systems engineering or assembly and integration, as well as hybrid solutions where we combine our training services with a turnkey mission offering. When needed, we have a strong network of specialized partners, to optimally serve our customers. Courses take place both in Delft and at the customers' location.

SATELLITE MISSIONS

ISISPACE has been set up as a vertically integrated company with a strong focus on systems engineering in order to be able to support our customers during satellite missions throughout the lifecycle.

With over 15 years of designing, building, testing, launching and operating multiple satellites, ISISPACE has gained extensive experience in building satellites for a vast variety of missions and customers. We have ample experience with working with a broad range of standardized CubeSat parts and if needed, customized solutions will be implemented.

Our CubeSat solutions have been used from training the next generation of students to testing out new technologies in space, from atmospheric and climate research to ocean traffic monitoring. Customers for satellite missions include government agencies, research institutes, universities and commercial companies.



CUBESAT PLATFORMS

PAYLOAD DEVELOPMENT

PAYLOAD INTEGRATION

LAUNCH SERVICES

GROUND STATIONS

SATELLITE OPERATIONS

NETWORKS OF SMALL SATELLITES FOR EVERY POSSIBLE APPLICATION

- EARTH OBSERVATION
- SIGNAL INTELLIGENCE
- GEOSPATIAL INTELLIGENCE
- SPACE RESEARCH
- CLIMATE MONITORING
- SHIP TRACKING
- AIR QUALITY MONITORING
- AIR TRAFFIC TRACKING
- INTERNET OF THINGS
- AGRICULTURAL MAPPING
- MINING
- PIPELINE MONITORING

SATELLITE-AS-A-SERVICE

All the benefits of a dedicated space infrastructure provided in the form of a service model, where there is no need for large dedicated technical teams, and the service can be used based on a subscription plan, rather than investing in a project.

Satellite enabled services can greatly improve global operations and provide near real-time information to improve decision-making processes. Owning and operating space infrastructure requires expert knowledge, dedicated teams and capital expenditures well before the results are tangible. This gap often creates a barrier in the adoption of innovative space systems in day-to-day operations. Our satellite-as-a-service concept provides all the benefits of a dedicated space infrastructure but without the hassle.

ENVIRONMENTAL MONITORING

ISISPACE is developing smallsat constellations to tackle global climate challenges with the Environment Monitoring service. The EM service collects wide-coverage and fast revisit atmospheric emissions/ earth imaging data from Low Earth Orbit. Its real time monitoring capabilities can be flexibly configured to suit your application. For the detection of urban and industrial CH4, NO2, CO2 emissions – our team has worked with leading instrument developers, regional institutes of excellence and government stakeholders to assemble the TANGO mission concept. The initial constellation of TANGO spacecraft equipped with spectrometers, provides raw emissions event detection and quantification. As data is collected over time and additional earth monitoring instruments are brought into the architecture, the EM service can output actionable metrics and allow first order data correlation. This ambitious ecosystem leans on a decade of experience with smallsat missions at ISISPACE and a sustainable business approach making it suitable for both public and commercial users.

IN-ORBIT DEMONSTRATION AND IN-ORBIT VERIFICATION

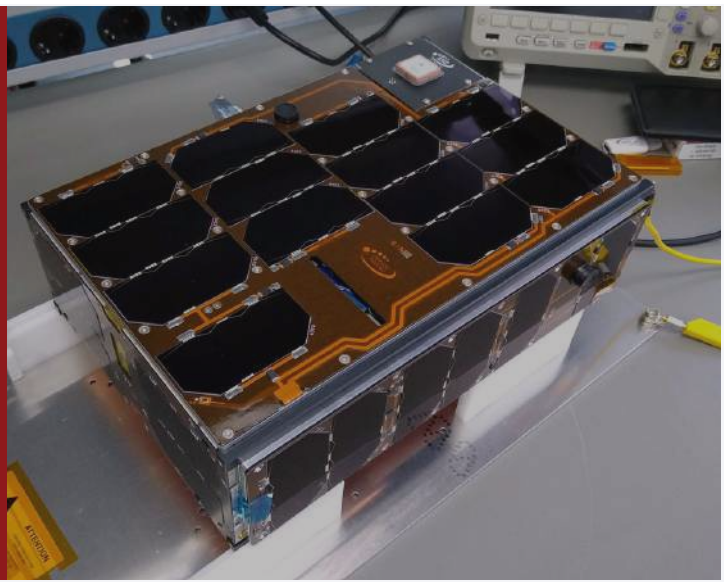
Throughout the NewSpace sector - agile processes, modular systems and short development cycles are commonly applied philosophies. This type of low-cost, fast-tracked space mission is ideal for the demonstration or validation of novel technologies – captured in our shared IOD/IOV service. The IOD/IOV service combines our heritage spacecraft platforms with structured mission planning and advisory. The modularity of the spacecraft design allows us to accommodate multiple users on a single spacecraft in a “plug-and-play” fashion. The ISISPACE shared IOD/IOV framework has been selected by ESA/EC in 2020 for 6U CubeSat scale instruments. For demanding novel technologies and short timeline missions, our team can match you with a dedicated service hosted on ISISPACE smallsat platforms (up to 16U in size). The dedicated IOD/IOV service is ready to de-risk critical technology, validate miniaturized instrument performance and demonstrate commercial feasibility.

SPACE INFRASTRUCTURE

Small satellites are driving a paradigm shift in space-enabled operations in all domains. The shrinking cost, distributed risk and rehearsed technology induction pipeline are an attractive option for institutions looking to engage a Space Infrastructure service. The service is matured for Radio Frequency and Earth Observation payloads, ideal for C4ISR applications. ISISpace Group offers space based signals intelligence, asset tracking, geospatial imaging and climate monitoring programs for defense and institutional users. The service can be tailored to emphasize rapid delivery, high reliability, and security. Additionally, the Space Infrastructure service is suitable for broad capacity building in end-to end space mission design and operations. What can your organization achieve with the support of a Space Infrastructure service?

A SNAPSHOT OF OUR PROJECTS
selected cases: missions

Customer: Royal Netherlands Airforce



BRIK-II
First Dutch military CubeSat

The BRIK-II project aims at assessing the relevance of CubeSats for military operations. The satellite mission is co-developed by ISISPACE, NLR and the Royal Netherlands Air Force. ISISPACE will deliver a turnkey 6-Unit CubeSat platform and the ground segment, capable of carrying and operating the 3 payloads of the mission.

Customer: Kleos Space

Kleos Polar Vigilance Mission (KSF1)
Constellation for detecting radio transmissions

The Kleos Space constellation will detect radio transmissions and pinpoint their origin and timing, enabling governments and organizations to detect activity such as illegal fishing, and piracy, and also identify those in need of search and rescue at sea. ISISPACE designed and built the second cluster of four 6U CubeSats in a timeframe of 4 months and was selected to build the third cluster as well.

Customer:RMIB & ESA

SIMBA
Earth Observation

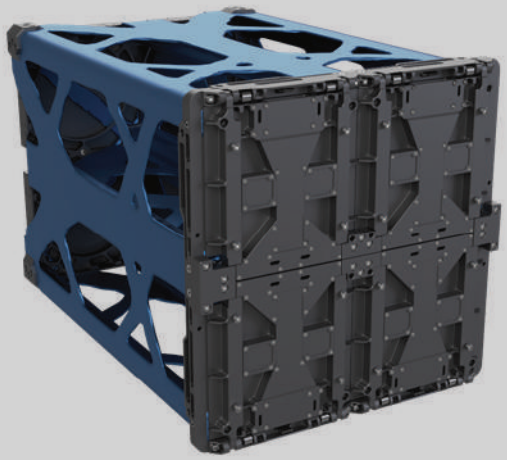
The mission is sponsored by ESA and led by the Royal Meteorological Institute Belgium (RMIB) with ISISPACE as the subcontractor responsible for the design, delivery of the platform, commissioning and operations of the satellite on the consortium behalf. The payload is a miniaturized radiometer instrument built by the Royal Meteorological Institute Belgium.

A SNAPSHOT OF OUR PROJECTS

selected cases: research & development projects

AQUA
CubeSat deployer using 3D-Printing technology

The 2-year project entails the design, prototyping, and qualification of a 3D printed deployer, with the main goal of reducing mass, while increasing design flexibility. The development is done in conjunction with The Netherlands Aerospace Centre (NLR) Additive Manufacturing Knowledge Center and Wilting Components B.V., a specialist in manufacturing of mechanical structures.



Customer: NSO

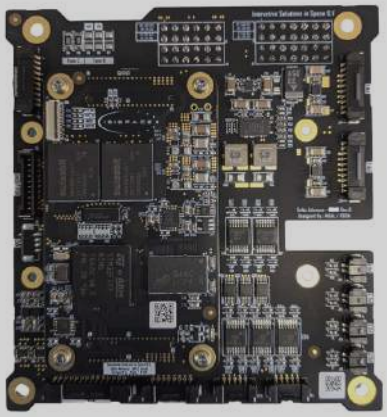
TANGO
Global emission monitoring

The TANGO mission aims to put man-made emissions under a magnifying glass by monitoring CO2, CH4 and NO2 at unprecedented precision and at high resolution. It will show a unique combination of world-class atmospheric science, innovative instrument technology and a New Space development approach and will set a new standard for cost-effective Earth Observation using small satellites.

Customer: ESA

AOCS Computer
Product development

The new ISISPACE AOCS computer is used to for optimal attitude and orbit control.
The software includes a robust 3-axis controllers, facilitating tracking of inertial or rotating target reference frames. Through a CubeSat formfactor motherboard it connects to a range of attitude and orbit control sensors and actuators.



Customer: Internal

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