



IAC 2024 October 14th – 18th 2024, Milan (Italy) MiCo Milano Congressi – Stand MN-B06

Spain Space

Stand MN-B06 (North Wing Level 0)

Exhibiting companies

ACORDE		www.next.acorde.com
ALÉN SPACE	MN-A32B	www.alen.space
ARKADIA SPACE		www.arkadiaspace.com
ARQUIMEA		www.arquimea.com
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www.radian.systems

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www.satlantis.com

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www.startical.com

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www.uarx.com

MICO MILANO CONGRESSI - LEVEL 0











David Presmanes Production & Supply Manager

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ACORDE, founded in 1999 and NATO AQAP-2110 certified, designs, develops and manufactures in-house high-performance RF subsystems for satellite communications, datalinks and electronic warfare, from S band up to Q band, being a world reference in X and Ka bands. The company provides robust, reliable and field proven solutions to customers worldwide in Defense, Space, Telecom and Professional Broadcast markets.

ACORDE manufactures compact and lightweight high power BUCs, SSPAs, LNBs, LNAs, TLTs and frequency converters, in stand-alone or redundancy configurations, and versatile approaches such as dual and quad sub-bands integrations, both in standard and built-to-spec products.

Equipment is also certified, at customers' request, in accordance with U.S. military standards MIL-STD-810H (environmental testing) and MIL-STD-461G (electromagnetic compatibility), DO-160, DO-178, etc.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

ACORDE RF equipment features the latest control technology, from simple manual systems to remote control systems via IP and cybersecurity protection. Alarm monitoring and intelligent control of unit operations are performed through proprietary software.

The use of advanced thermal and circuit simulators, combined with the experience of ACORDE's designers in circuit modeling, allows the design phase to be controlled from simulations, which increases the reliability and accuracy of the products under development.

ACORDE additionally provides its expertise in the design, integration and customization of embedded secure devices with custom FW (both bare metal or over a RTOS); HW/SW for M&C applications; SW developing following modern methodologies and DevOps practices; and integration of wireless communications and positioning capabilities in embedded devices or other subsystems.

The company dedicates almost 1,000 sq.m. for ESD Protected laboratories and design areas.

The Manufacturing Division has the capability to mount and assemble PCB boards using semi-automatic remelting processes.

CNC machining is another asset of the Manufacturing Division. Mechanical parts for the design and development stages are manufactured in-house with the available CNC machine. This option is very useful in the early stages of the project for prototyping purposes.

In order to pass all production tests, seven climatic chambers are available to validate the environmental specifications and ESS tests for each unit. A vibration table for ESS testing is also available.

MAIN PROJECTS

ACORDE has participated in several multi-year programs for development of sophisticated radiofrequency subsystem for Aero, Defense or Scientific purposes, mainly as subcontractor of the Prime or the next level system Integrator. Active NDAs do not permit further details, but involve, among others, governmental satellite programs of several EU countries, both on the ground segment (land, marine and air platforms) and the satellites.

Among the disclosable programs, the following ones could be highlighted:

PAZ GALILEO ALPHASAT SPAINSAT NG SKAO





Isolina Pérez Donnelly

Sales Director isolina.perez@alen.space





ALÉN SPACE is a Spanish company dedicated to the design, manufacture and operation of small satellites. Its main objective is to help space agencies, companies, institutions and high-tech centres through its state-of-the-art space/ground segment products and turnkey solutions for the development of end-to-end nanosatellite missions. The company' services cover all essential aspects of any type of space project: platform and mission design; payload development and manufacturing; assembly, integration and verification (AIV) phase and support of specific satellite operations through its mission control software. Thanks to a highly qualified team of more than 70 engineers/technicians and 15 years of experience, ALÉN SPACE has been able to implement cutting-edge software and hardware for its own small satellites with a 100% success rate. In addition, its products and processes are endorsed by ESA standards (ECSS) and several recognised industry certifications, such as ISO 9001.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

The ALÉN SPACE's portfolio includes advanced space products and communication subsystems divided into:

- Small satellite platforms (1U-16U)
- Communication payloads
- On-board computers (OBC)
- TTC solutions
- Mission Control Software solutions
- Software Defined Radios (SDRs) designed for communication applications
- Ground stations prepared to operate in different radio frequency bands (UHF, VHF & S-band)

MAIN PROJECTS

XATCOBEO (2012), HUMSAT-D (2014) and SERPENS (2015) and LUME-I (2018)

Satellites developed, launched and operated by the core of the ALÉN SPACE team within the strategic group of the University of Vigo. In 2012, Xatcobeo became the first Spanish nanosatellite in Space. All of them included communication payloads developed by the team for M2M/IoT and spectrum monitoring. In the case of LUME-I it was the TOTEM SDR.

DUSTCUBE (2016)

Project with ESA and NASA.

Asteroid Impact Mission Study Phase (AIM). Class 3U

The European Space Agency invited the ALÉN SPACE team to be part of the DustCube project, a nanosatellite created to study the result of an impact on an asteroid to divert its trajectory (Asteroid Impact Mission - AIM). DustCube had to be able to withstand impacts, radiation and extreme temperatures. Our team was responsible for preparing the feasibility study of the mission.

ALFA CRUX (2022)

1U for Universidade de Brasilia

Launched on SpaceX's Falcon 9 rocket from Cape Canaveral (USA). Class 1U

Our team has provided the necessary technology for this mission, including a 1U platform with all the essential systems for a small satellite mission, TOTEM SDR and a ground station kit for tracking and control. Besides design and manufacturing, ALÉN SPACE team has also delivered an intensive Hands-on Training Programme to the team of Brazilian Students, for them to be able to carry out the operational test of the CubeSat.

SHIPMATE (2020 - 2022)

SHIPMATE (Satellite Hybrid Information Protocol for Maritime Telecommunications), is a project funded by the Spanish Ministry of Science and Innovation. ALÉN SPACE is part of a consortium together with Egatel and Gradiant, created to design and develop a network based on VDES & 5G, which will allow the bidirectional communications between vessels ,buoys and ground equipment, providing a complete solution for the maritime monitorization. The communication will take place through VDES (ground and satellite) and 5G Network through the services mMTC and eMBB. The role of ALÉN SPACE in this project is:

- Development of an advanced SDR platform which will allow the implementation of de VDE-SAT, inter-satellite link (ISL) and high data rates (HDR) in the same single unit.

- Creation of a development framework which will allow the implementation of the VDE-SAT modules as well as other communication applications.

INTER-SATELLITE LINK FOR ANSER MISSION OF INTA (2019-2020)

ANSER project is a set of four nanosatellites, which will fly in close formation (about 10 kilometers apart) and they are ready to work together, as a single satellite, with fragmented payloads on the different CubeSats. They will be managed by a distributed attitude control to avoid disorientation and the loss of any of them.

ALÉN SPACE's Inter-satellite Link (ISL) system enables in orbit communications among satellites.

IoT PAYLOAD FOR SOSAT-3B5GSAT (2020 - 2021)

SOSAT-3B5GSAT is the first nanosatellite of Sateliot's future constellation to provide IoT

communications services with worldwide 5G coverage. The role of ALÉN SPACE in this project is:

- Design, development of IoT payload.
- Support for the integration of the payload in the satellite.
- Operations of the payload
- Design, development and provision of IoT ground terminals.

HALT (2021-2022)

ESA Joint contract of Alter technology with ALÉN SPACE and FADA-CATEC. The goal is to carry out a testing campaign to verify if the accelerated use testing method HALT (Highly Accelerated Life Test) is an ideal trial procedure to validate systems, products, or commercial electronics production processes COTS (Commercial Off-The-Shelf) in the aerospace engineering field. ALÉN SPACE, as a subcontractor, will be in charge of manufacturing the units under test (TOTEM) and adapt the board software to allow the agile HALT testing and perform the failure analysis & root cause investigation.

SATMAR

A 6U Cubesat mission (still in process) including a VDES payload developed by ALÉN SPACE, together with the Spanish company Egatel, for the digitization of maritime communications. It's supported by the Ports 4.0 capital fund of Puertos del Estado and the Spanish Port Authorities. Previously, ALÉN SPACE and Egatel had already collaborated in the development of a VDES solution in the SHIPMATE project, together with the Calician Talegammunications. Technology Contro (Cradiant)

of a VDES solution in the SHIPMATE project, together with the Galician Telecommunications Technology Centre (Gradiant).

Sateliot's 5G constellation

ALÉN SPACE has executed the design and manufacturing of four 6U satellites, which will be part of the first phase of what will be the first commercial Low Earth Orbit (LEO) satellite constellation based on 5G technology for the Internet of Things (IoT).







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ARKADIA SPACE is a pioneering company specializing in the development and commercialization of advanced propulsion systems for satellites and space platforms. Founded in late 2020 by a team of experienced engineers, ARKADIA aims to provide sustainable and cost-effective propulsion solutions using green propellants, specifically high-concentration hydrogen peroxide. Our mission is to revolutionize space mobility, making it safer and more accessible while reducing the environmental impact of traditional propulsion methods.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

ARKADIA SPACE specializes in hydrogen peroxide-based propulsion systems, offering both monopropellant and bipropellant thrusters. Our technological capabilities include the design, testing, and manufacturing of high-performance thrusters that are both cost-effective and environmentally friendly. Our Test Center at Castellón Airport is equipped with two test benches, a mission control room, a chemical lab, and a workshop. This facility supports rapid prototyping and rigorous testing, ensuring our products meet the highest standards of performance and safety.

MAIN PROJECTS

We are currently working on several projects with the ESA, but our main focuses are the ARIEL and GHOST projects. In the ARIEL (Attitude for Reusable and Innovative European Launchers) project, we are developing a monopropellant engine along with a tank. The other project, GHOST (Green Hypergolic Thruster), is centered on the development of a green hypergolic fuel and a bipropellant engine.



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ARQUIMEA is a tech company that operates globally, providing innovative solutions and products in high demanding sectors including Aerospace, Defense, Big science, Biotechnology and Fintech.

ARQUIMEA was founded in 2005 by Diego Fernández PhD, with the aim of developing technologies, products and services that contribute to solving the challenges of our society. At ARQUIMEA we all share a strong passion for technology.

ARQUIMEA invests most of its profits in R&D, as well as in the acquisition of other technology companies around the world. The company has its own research center with more than 65 researchers working on the technologies of the future.

In the space sector, ARQUIMEA collaborates with major agencies such as NASA and ESA, leading companies in traditional and new space, international consortium and research centers.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

1. Design and integration of small satellites

2. Design and production of structures and thermal systems for satellites, such as subassemblies, thermos structural panels, loop heat pipes, heat pipes, deployable radiators, and thermal blankets.

3. Optical systems and avionics for earth observation satellites, monitoring, space exploration and surveillance.

4. Design and manufacture of deployment mechanisms and actuators (HDRM) to hold and release elements such as solar panels and antennas on satellites.

- 5. Engineering and production of high-performance electromechanical components.
- 6. Design of analog, digital and mixed-signal integrated circuits, resistant to radiation.

To carry out this and other projects of the company, ARQUIMEA has production centers with the latest technology and machinery for design, integration, manufacturing and testing, including ISO-5, 7 and 8 clean rooms.

MAIN PROJECTS

ARQUIMEA and its acquired companies have successfully participated in more than 180 space programs including Coperni

from the Shuttle, the International Space Station, Copernicus, Mars 2020, to Artemis.





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ASE OPTICS EUROPE designs and manufactures customized systems with optics and photonics technologies for New Space, industrial inspection, defense, aeronautics, and science. The company handles everything under one roof, from the initial idea to the final solution. The optical design capabilities encompass UV, visible, NIR, MWIR, and LWIR, along with optomechanical solutions. ASE OPTICS EUROPE is equipped to produce the initial prototypes and series production. Additionally, ASE OPTICS EUROPE has the capability to integrate electrical and electronic modules into the system, as well as image processing.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

The technological capabilities offered by ASE OPTICS are:

Optomechanical systems design:

- Custom lenses and zoom design.
- UV, VIS, NIR-SWIR, MWIR & LWIR systems.
- Reflective & catadioptric imaging systems.
- High NA. microscope objectives.

Systems integration:

- Precision optical assemblies.
- Laser systems integration.
- Ruggedized optomechanical systems.
- Optoelectronics assembly and integration.
- Prototypes, series production.

Production:

- High-end low volume series production.
- Supply-chain management.
- Reception, assembly, test, and delivery.
- After-sales technical and admin support.

Optical characterization:

- Automatic bench for EFL & distortion.
- OPD, PSF & MTF (UV to LWIR).
- MRC and resolution.

Algorithms / Software:

- Image processing.
- Process automated and systems for integrated control.
- Analytical measurements.

Research and development:

- Collaborative EU and National funded research.
- Private R&D applied to new product development.

MAIN PROJECTS

ASE OPTICS has designed and developed different types of instrumentation for New Space depending on the requirements of each project.

SWIR objective lens integrated into payloads for Earth Observation applications. Currently in orbit integrated into the DRAGO - 2 camera (Instituto de Astrofísca de Canarias - IAC). It has certified vacuum compatibility, with an optically athermal system, stable polychromatic MTF over the entire operating temperature range, and common focusing for two separate subwavebands.

The **MORERA** project consists of a system for monitoring of efficient irrigation and agricultural yield. ASE OPTICS has performed the optical design and LWIR lens development. Applying free-form geometries in spatial optical systems reduces the system's size and cost. This R&D project is funded by the Spanish Government.

Photsat project consists of the development of a very compact non-typical spectral waveband payload (4U) to be included in a new application in future missions of IEEC (Institut Estudis Espacials Catalunya) - Institute for Space Research of Catalonia, for the next space mission (nanosatellite) to be launched in 2025.



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AVS, ADDED VALUE SOLUTIONS is a global SME established in 2006. Today we are proud of being one of the world's leading companies specialized in the development of complex equipment for industries such as fusion, particle accelerators, and space.

With a remarkable track record and a strong focus on technological advancements, AVS has established itself in the Big Science and Space markets as a trusted provider of high-value, critical equipment worldwide.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

OVS

AVS has experienced continuous growth, earning global recognition for its design and development of cutting-edge, high-value equipment. Through 17 years of bootstrapping, AVS has nurtured a team of over 150 stargazers and innovators, whose tireless dedication spans across locations in Spain, the USA, the UK, and France.

This diverse team serves as the rocket fuel propelling AVS's success in delivering innovative solutions to complex challenges in the space industry.

With a remarkable history of achievements, AVS has earned global recognition for its high-value, critical equipment and its role in groundbreaking projects with esteemed organizations like NASA and ESA. As AVS continues to push the boundaries of technology, it remains a trusted partner and a force to be reckoned with in the fields of mechatronics, robotics, and space exploration.

In AVS we are experts in design, manufacturing, assembly, tests and supply under ISO9001 and EN9100 certificates, with the advantage of the on-site manufacturing workshop and assembly and integration facilities, more than 10,000 m2 of facilities distributed across six locations in Europe, as well as the UK and the USA, including clean rooms, providing our customers from the conceptual design to the turnkey.

MAIN PROJECTS

AVS embarked on its journey into the space sector by first gaining experience in fusion and particle acceleration

technologies. Leveraging this expertise, the company expanded into the space industry, designing equipment with cross-applications. Over the years, AVS has achieved notable successes in space, including securing contracts with renowned organizations such as the European Space Agency (ESA), NASA, and ISRO, while also forming strategic partnerships with major European primes like Airbus, Thales, and OHB.

AVS's impressive achievements in the space domain encompass a wide range of projects. Notably, the company has contributed significantly to NASA's exploration efforts, including the development of two instruments for the Perseverance rover and the creation of three subsystems for the NASA-ESA Mars Sample Return Mission.

These collaborations with esteemed organizations and missions demonstrate AVS's growing presence as an advanced mechatronics and robotics provider for Moon, Mars, Earth Observation, Telecommunications and in-orbit servicing missions.

AVS has also been instrumental in the development of a disruptive water-based propulsion system in conjunction with URA Thrusters. Additionally, AVS is eagerly preparing for the launch of its own small satellite missions in 2024, representing a significant milestone as the first satellite of its class to be designed and manufactured by a private Spanish company.

The LUR-1 mission space segment includes one 50kg microsatellite, which is designed to perform the IOD of several advanced subsystems developed by AVS and URA thrusters, including Active Thermal Control, Electrospray Propulsion, Electrolyzed Water Propulsion and Mechanisms.





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CTA is an aerospace technology center specializing in development and validation technologies for aerospace structures and systems located in the Basque Country region, in the north of Spain.

Since 1996, CTA has specialized in the field of space validation by means of structural, vibration, pyroshock, vacuum and developing specific and complex test benches to simulate extreme environments.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

Bespoke test benches combining structural, pressure, temperature, vacuum, vibration, shock, aggressive environments and so on, to check space components behavior under extreme conditions.

Vibration systems, pyroshock test benches, TVAC and DTVAC.

Monitoring and automated systems for manufacturing and assembly processes based on machine learning, TI, AR, VR and AI.

MAIN PROJECTS

GAIA SENTINEL MTG EXOMARS SOLAR ORBITER JUICE BepiColombo

Берісоютьо	
Spainsat	
GALILEO	
ARIANE 6	
ARROW	



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DHV TECHNOLOGY is a Spain based international company that designs and manufactures solar panels for space applications and other power subsystems for different platforms.

DHV TECHNOLOGY has been providing tailor-made solar arrays systems to different international companies at the same time the company has been developing different power subsystems implementing the most advanced technologies.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

- 3700 m² of facilities (1200 m² clean room; 1000 m² offices; 1500 m² warehouse and others)
- Design, manufacturing and testing of Solar Arrays and Electrical Power Subsystems for space applications

MAIN PROJECTS

- Standard (COTS) and customized products
- Constellation projects manufacturing
- LEO, MEO, GTO, GEO, lunar and deep space missions' solutions
- Complete Power Supply Systems for SmallSats and CubeSats

- CubeSats and NanoSats Power Solutions:

- Solar Panels for CubeSats: Standard and custom solar array solutions for any kind of CubeSat platform as 1U, 2U, 3U, 6U, 12U and 16U. Deployables, cut-out areas and other customizations are also available under request.

- Electrical Power Systems (EPS): Electrical Power Systems (EPS) designed to be integrated into different CubeSat platforms from 1U to quad deployable 16U. Deployment control, maximum power point tracking and other features available.

- MicroSADA: Solar Array Drive Assembly (SADA) in charge of rotating the solar arrays to keep them optimally oriented with respect to the sun and providing a path for power transfer from the arrays to the CubeSat bus.

- SmallSats and MicroSats Power Solutions:



- Solar Panels for SmallSats: Deployable and body mounted tailor-made solar array solutions for small satellites. Our solar arrays are manufactured on PCBs or honeycomb aluminum substrates covered with carbon fiber reinforced polymer (CFRP) layers, integrated sensors, etc.

- PCDU: The Power Conditioning and Distribution System PCDU has been designed to be integrated into different SmallSats systems. This PCDU is developed to provide an efficient power supply and control for any type of mission and it is composed by a power management module and a battery module.

- SADA-M: Solar Array Drive Assembly (SADA) in charge of rotating the solar arrays to keep them optimally oriented with respect to the sun and providing a path for power transfer from the arrays to the satellite bus.

- Multi-Layer Insulation Blankets: Thermal insulators conformed by multiple layers of optical and electrically conductive materials separated by thin netting spacers. MLI Blankets are fundamentals pieces in the spacecraft thermal control and critical in preserving the spacecraft from the space extreme temperatures.



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ELECNOR DEIMOS is a European technology group founded in 2001, with about 500 staff, headquartered in Spain with subsidiaries in five countries. The group operates in space, transports, aeronautics and maritime sectors, and also designs and implements digital transformation processes.

The company DEIMOS offers a wide range of services for space systems, including the design, integration and operation of small satellites, data processing for Earth observation satellites, development and operations of micro-launcher subsystems and end-user applications and services.

Beyond its engineering expertise, DEIMOS offers operational space and ground infrastructure services for monitoring and receiving satellite data from its Antenna Park, located in Puertollano. Additionally, the company delivers space surveillance services through the DEIMOS Sky Survey, a state-of-the-art center equipped with the latest technology for observing, monitoring, tracking, and cataloging near-Earth objects (NEOs).

With over 500 contracts with ESA, NASA, and other agencies, ELECNOR DEIMOS has an extensive experience underpinning its comprehensive service offerings, making it a key player in the space industry.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

ELECNOR DEIMOS provides systems engineering, mission analysis and design, onboard software, ground segment and satellite integration for Science and Exploration, Satellite Navigation, Earth Observation and Space Safety missions and Launchers. The capabilities include the development of turnkey operational systems for aeronautical and maritime applications, both civil and military. The company also provides services for the transport sector, digital transformation solutions and location-based services.

MAIN PROJECTS

ELECNOR DEIMOS has participated in many ESA and European Space Programme missions, in satellite navigation (Galileo programme, EGNOS v3 and G2G), space science and exploration (CHEOPS, JUICE, Space Raider, PROBA 3), Earth observation (METOP, FLEX, SAT4EO, CHIME, NGGM, WIVERN, Sentinel-3 NGT), knowledge of the space environment (DEIMOS Sky Survey, Clearspace-1), Space Transportation (NAVIGA, CSTS) and other technological activities.



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GMV is a private engineering and technology group, being one of the strongest players in the Space domain worldwide. It is a premier provider for space organizations and agencies, and the major satellite manufacturers and operators, including solutions for mission analysis, simulation, GNC, robotics, OBSW, control systems, orbital dynamics, space-mission planning, data processing, operations and applications.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

With 40 years of experience behind it and nearly 900 satellites carrying its technology, GMV can safely claim to be a technological partner of cast-iron dependability, capable of meeting the most stringent needs under the strictest quality standards. It had achieved CMMI Level 5 certification, covering the whole range of activities and services within the Space sector.

MAIN PROJECTS

Looking to our projects we can highlight our major responsibilities on the European satellite navigation programs Galileo, EGNOS and the leadership of one of the LEO-PNT missions, our presence in the commercial satellite telecommunications market (EUTELSAT, HISPASAT, SES, Arabsat, Inmarsat, etc.), where we are recognized as the first worldwide ground segment provider, our strong commitment in Earth Observation and Meteorlogical programs for ESA (ESA Earth Explorers), EU (Copernicus), EUMETSAT (MTG and EPS SG), Spanish government (Ingenio/Paz), our major challenges on ISOS missions (EROSS, CAT-IOD) and mechanisms (MICE, CAT, MIRROR, ASSIST) or Robotics and Space Exploration (Exomars, MSR, EMRS), our products and services around space safety and planetary defence (HERA, RAMSES, SSA, SST), our capabilities to provide operations support (DLR, ESA, CNES, Telecom operators) and finally our capabilities to develop useful space applications (agriculture, security, forestry, maritime).





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HISPASAT is the Spanish satellite operator and the main driver of innovation its national aerospace sector. It is committed to helping citizens bridge the digital divide and promote sustainable development in society. It is the main communications bridge between Europe and America as a broadband and connectivity services provider through its companies in Spain and Latin America. It is also a leader in the broadcasting and distribution of audiovisual content in Spanish and Portuguese, including the transmission of Direct-to-Home (DTH) and High Definition Television (HDTV) digital platforms. These activities make it one of the world's leading companies by revenue in its sector.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

HISPASAT operates 10 geostationary communication satellites, located on different orbital positions that provide coverage in the Americas, Europe and North Africa. These satellites are monitorized through its control centers in Spain and Brazil. The Group also has a relevant ground segment with teleports distributed in the Americas, Europe and Asia. HISPASAT participates in different innovative projects, focused on leading the transition to 5G NTN, secure communications and strategic autonomy and leveraging technological disruptions to bring new services.

MAIN PROJECTS

MOONLIGHT: an ESA initiative that will define the economically viable satellite architecture and models to provide services on diverse platforms that orbit the Moon, as well as to the settlements on lunar bases and vehicles that astronauts use (rovers, landing modules, and more). Furthermore, in its final stage the study expects to select an operator to manage the LCNS, as well as to supply services. Lastly, the consortium will also analyse if it is possible for the LCNS system to work together with LunaNet, the infrastructure that NASA is currently developing to support the missions of its Artemis programme.

GEO-QKD: HISPASAT leaded the feasibility study of the world's first geostationary satellite mission aimed at quantum key distribution, that neludes an on-board quantum payload hosted in a geostationary satellite, as well as its associated ground segment. While the payload features a high-precision telescope, a source of photons capable of sending photon-to-photon deliveries to Earth in order to preserve their quantum properties and all the associated electronics, the ground segment features a control center and the user's optical stations.



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The Instituto de Astrofísica de Canarias (IAC), recognized by the Spanish government as a "Severo Ochoa Centre of Excellence", is a nationally funded research centre that runs two of the best international observatories in the world. In administrative terms, it is a Public Consortium constituted by the General Administration of the Spanish State, the Public Administration of the Autonomous Community of the Canary Islands, the University of La Laguna (ULL), and Spain's Science Research Council (CSIC).

The IAC is also a centre for advanced technology, designing optical and infrared cameras, low and high-resolution optical spectrographs,, cryogenic instrumentation, multiobject infrared spectroscopy, fibre-optics systems etc. As well as its prime objective of producing astronomical instruments, the Institute carries out technological projects with develop capabilities applicable to other scientific-technical fields, and of more general utility.

Mission: to perform excellent research and technological developments in astrophysics, securing the appropriate training of graduate students, young researchers and engineers, promoting outreach and technology transfer in many different areas and fostering a fruitful and stable environment of international collaboration.

Vision: International leadership in Astrophysics and Space Sciences, by delivering excellent scientific and technological outcomes, strengthening the "astronomical reserve" of the Observatorios de Canarias (OOCC), and promoting the transfer of knowledge between scientific communities and society.

Objectives: The IAC's main objective, according to its statutes, are:

- to conduct and promote astrophysical research as well as to develop and transfer technology.

- to disseminate astronomical knowledge, collaborating in university teaching in the area of astronomy and training researchers and engineers in scientific and technical fields related to Astrophysics.

- to manage the centres, observatories and astronomical facilities already existing, as well as those to be built or assigned, and others related facilities.

- to promote relations with the national and international scientific communities.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

The IAC has the most advanced infrastructure, worldwide connectivity and technology equipment available for its technical support activities and for its own astrophysics projects and those of other external organizations.

Capabilities: the IAC develops a large part of the avant-garde instruments required by its astrophysics research activities. In this way, it has acquired over time a prominent level in the most relevant technologies and knowledge areas in the development of scientific instrumentation. These technical capacities, in an interdisciplinary environment, are coordinated and optimized thanks to project management practices. The IAC's most important technological challenge has been its involvement in the construction of the Gran Telescopio CANARIAS (GTC), currently the largest optical-infrared telescope in the world, with a which has a diameter of more than 10.4 m.

Technical facilities: the IAC has the infrastructures and the scientific and technical equipment necessary to carry out its technological support activities, both for the own projects of astrophysical instrumentation, as well as for external collaborations in R&D

- ALISIO-1 Earth Observation SWIR satellite with Optical Communications module
- 4 x Cleanrooms for Assembly, Integration and Verification of large instruments
- Telescopes at the Canary Observatories for instrumentation tests
- Supercomputer of La Palma
- Spanish RedIRIS-NOVA network
- Electronic design laboratory
- Electromagnetic Compatibility Laboratory
- Astronomy Image and Sensors Laboratory
- Optics Laboratory
- Mechanical Integration and Verification Laboratory
- Dimensional Metrology Laboratory
- Electronics Workshop
- Mechanical workshop
- Advanced Optical Systems Center
- New fully equipped offices

MAIN PROJECTS

IACTEC-Space is the project within IAC that is driving the innovation, development and operation of payloads for small satellites, including optics, mechanics, electronics and software, as well as image processing for remote sensing analysis and research in the field of quantum optical communications.

(https://www.iac.es/en/science-and-technology/technology-transfer-iactec)

CSOA: The Advanced Optical Systems Center (CSOA) is an unique infrastructure in Spain for the manufacture of high quality optical elements. This cutting-edge technology is a rising value and, with the necessary requirements in Astrophysics, it is available to very few centers in the world.

GTC: Gran Telescopio de Canarias (http://www.gtc.iac.es)

CTA: Cherenkov Telescope Array (https://www.iac.es/en/projects/iactec-large-telescopes-cherenkov-telescope-ar-ray-cta), http://observatorio-cta.es

EST: European Solar Telescope (https://est-east.eu)

NRT: New Robotic Telescope (https://www.iac.es/en/projects/iactec-large-telescopes-new-robotic-telescope-nrt), (https://www.robotictelescope.org)

ELF: Exo Life Finder Telescope (https://www.iac.es/en/projects/elf-exo-life-finder)

www.lightbridges.es

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LIGHT BRIDGES, SL is a Spanish company specializing in the engineering, procurement, construction, operations, and maintenance (EPC & O&M) of astronomical projects. We are responsible for the installation and operation of the Two-meter Twin Telescope (TTT) and the Transient Survey Telescope (TST) at the Teide Observatory, Canary Islands, as well as the commercialization and global distribution of Derechos de Tiempo de Observación (DTO) generated by the telescopes. LIGHT BRIDGES collaborates with various institutions to advance scientific research, technological innovation, and economic development in the field of astronomy and space.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

- Design, construction and commissioning of scientific infrastructures in record time: robotic telescopes and ultra-low latency computation clusters.

- Operation of robotic telescopes and Nasmyth availability for advanced instruments.
- Al and machine-learning solutions in the field of astronomy and satellite operations.
- Advanced processing algorithms for reduction, calibration and data-extraction of images and signals.
- Research on new strategies of public-private partnerships to produce pioneering, sustainable scientific research.

MAIN PROJECTS

TWO-METER TWIN TELESCOPE (TTT) PROJECT: The Two-meter Twin Telescope (TTT) is an advanced astronomical project located at the Teide Observatory in Tenerife, Spain. This project features a doble pair of high-precision 80cm and 2-meter telescopes designed for deep-sky observations and the study of celestial phenomena. The TTT provides high-resolution data for various scientific research areas, including planetary defense, asteroid composition, exoplanet studies and satellite astrometry and photometry. The project supports international collaborations and contributes significantly to the field of astronomy through cutting-edge technology and research capabilities.

TRANSIENT SURVEY TELESCOPE (TST) PROJECT: The Transient Survey Telescope (TST) is a state-of-the-art

1 meter f1.3 robotic telescope at the Teide Observatory. This project is a collaborative effort between The Restless Few, SL and LIGHT BRIDGES, SL, in partnership with the Instituto de Astrofísica de Canarias (IAC). The TST focuses on transient astronomical events and is designed to capture high-precision data for real-time analysis. It generates Observation Time Rights (DTO), which are commercialized and distributed globally, providing significant economic and scientific benefits. The TST enhances international research collaborations and positions the Canary Islands as a leading hub for astronomical innovation.





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LOGO2 provides design, análisis, manufacturing and metrology services for the aerospace industry.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

LOGO2

MANUFACTURING

Currently the production center located in Elche can Support precision machining of parts up to Ø700 x 400 mm in 5th axis and 700 x 400 x 300 mm in 3th axis, turning parts up to Ø250x1000 mm and the production of sándwich structures up to 1.2 m by 2 m in composite materials.

MAIN PROJECTS

The main projects that we have supported has been the production of 3U & 6U cubesats for the OTTER mision among others. The impactor for the ESA mission HERA. In larger platforms we are supporting the development of an OTV vehicle demostrator and Supply one of the largest micro-satellite SAR constellations in the world. On the composite side we have launched differrent solar array and deployable structures to orbit based in monolithic FRP as well as sándwich. Currently, we are working on the development of a modular scalable micro-satellite platform to cope with up to 125 Kg.



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madridspace



MADRID SPACE is your prime choice for expert support in Thermal, Structural and CFD services in the Space Industry.

We are the right technological partner of those companies who face technical challenges, providing them with powerful solutions to surpass their limits, from the early stages of the project until the in-orbit operations.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

- Thermal modelling & analysis of any kind of equipment/subsystem: electronic components, mechanisms & complete platforms, using ESA standard tools and powerful in-house software.

- Mechanical design and analysis, including typical launch environment (QSL, sine, random, shock), acoustic analysis, and topological optimization for traditional and additive manufacturing methods.

- CFD simulations, including atmospheric re-entry, modelling of propulsion systems and heat transfer conjugate models.

- Development and delivery of multifunctional structures, optimized from the thermal and mechanical perspective.

MAIN PROJECTS

MADRID SPACE has collaborated in more than 100 projects since 2016, including:

G2G (Galileo 2nd Generation) LISA **NGGM (New Generation Gravity Mission)** Beresheet2 **PLATO** JUICE Europa Clipper

Space Rider

Solar Orbiter

Several experiments on board the ISS



www.occamspace.com

G OCCAM S P A C E

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OCCAM SPACE is a Spanish company located in Madrid with 100% independent capital.

The company is focused on space mechanisms and separation systems for Smallsats and the NewSpace market to provide reliable and competitive products.

OCCAM SPACE designs, manufactures and tests all their products.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

OCCAM SPACE provides the following services:

- Structures & Mechanisms
- Separation Systems & Adapters
- Design, Manufacturing & Testing
- Engineering
- Consulting
- Ground Support Equipment

The company has started its activity with the development of a Separation System for Small satellites, named KISS "Keep Simple Separation-system" and now is immersed in the development of additional family of mechanisms.

MAIN PROJECTS

The personnel and shareholders of OCCAM SPACE have more than 80 years of experience in the Space sector, having worked in some of the most relevant companies in Spain and worldwide, Participating in missions such as Sentinel 4, Sentinel (1B, 1C, 1D, 2A, ...), EDRS-C, Euclid, SARah, ELECTRA, Beresheet Lunar Lander, Brisat, Bsat 4A, Bsat 4B, Intelsat 38, Amazonas 5, Hispasat 1F, Eutelsat 7C, Intelsat 39, Ovzon, Galileo Dispenser, Eurostar 3000, Exomars-Rover, Space Rider, between many other missions.

As OCCAM SPACE in less than 2 years of existence, 12 commercial projects have been finished or are currently on-going. Those projects represent activities for 6 different private customers. Along with the commercial activity, OCCAM SPACE has its self-funded development programs and ESA funded development programs.



ORBITAL PARADIGM

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Francesco Cacciatore

CEO & CTO

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ORBITAL PARADIGM (OP) is a startup developing systems and services to provide high-cadence transportation from orbit to Earth, with the aim of solving the bottleneck in frequent, streamlined, and accessible space return opportunities and thus unlock the industrial use of space for production and logistics.

OP vision is to normalize space reentry to seamlessly integrate it in the fabric of global transport and industrial operations.

The company was incorporated in July 2023, and has since collected pre-seed funding, has been accelerated by Starburst Aerospace, and selected by ESA BIC in Madrid. ORBITAL PARADIGM has raised so far 500KEUR in funding from two venture capital funds.

OP completed the first engineering contract for a client in December 2023. Further funding is being raised by the company in view of a small ballistic demonstration in 2025, and of a guided subscale test foreseen for 2026 for which it has signed a MoU with a European small-launcher, and for which two customers have already signed pre-contracts to secure payload slots.

OP has been selected among the 100 most promising European deep tech startups by Deep Tech Momentum 2024, and has been awarded as the Best Deep Tech startup at the EU Cassini Showcase at EBAN Congress 2024.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

ORBITAL PARADIGM's technological capability is focused on the following domains:

- Autonomous guidance and control systems for spacecraft and hypersonic entry vehicles
- Ceramic thermal protection materials for hypersonic flight and space reentry
- Hypersonic and space navigation systems
- Space systems engineering, design and simulation
- Modelling and simulation of dynamic systems
- New space avionics systems design and development

MAIN PROJECTS

ORBITAL PARADIGM is currently developing Kestrel spacecraft family as its first product, to provide agile microgravity and return services, with small payload size and frequent flight opportunities.

The roadmap for development is based on the following steps:

2025 – Kestrel Initial Demonstrator (KID), the first very small-scale demonstrator, with ballistic reentry and not designed for recovery. The mission is conceived as an internal test, with potentially 2kg payload capacity, but not having customers transportation in its main objectives. Conversations with potential customers are ongoing nonetheless.

2026 – Learn to Fly (L2F), the demonstration mission proposed for the current CfP. L2F is the first guided reentry demonstrator, designed to first enter the market carrying customers and recovering their payload. This mission foresees 20kg of payload capacity, of which 50% have been already pre-booked.

2027 – Kestrel100 maiden flight. First flight of the first full scale operational vehicle, designed for up to 4 flights per year with 120kg maximum payload capacity, and comprising Reentry Module and Service Module.

2030 - Kestrel300 maiden flight. First flight of the large OP reentry vehicle, designed to carry up to 350kg, with mission cadence scalable up to monthly flight in the mid 2030s. While not its main purpose, this vehicle could be evolved to serve in-space production uncrewed and automated outposts.

Kestrel100 is a 350 kg spacecraft composed of a reusable re-entry capsule and an orbital service module. Kestrel100 has a re-entry payload capability of 100-120kg, and is designed for rideshare launch, to be reusable up to 12 times, with quick refurbishment and turnaround time, aiming at monthly launches in mid 2030s. The vehicle is built around a highly autonomous SW architecture, with onboard real-time optimized guidance at its core to enable low-acceleration during entry, high accuracy at landing/splashdown, and minimization of operational cost. In addition, Kestrel will be making use of an in-house developed reusable heatshield manufactured with ceramic nanocomposites, mounted mechanically to the S/C, to minimize refurbishment among missions and reduce further the price to the customer.

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Xavier Llairó CCO & Co-founder

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PANGEA AEROSPACE is dedicated to providing advanced propulsion systems for the space industry, from the Newton to the Mega Newton, based on three key principles: high efficiency, sustainability, and reusability. Our disruptive propulsion technology is aimed at increasing competitiveness and profitability for our clients, including launch service providers, launcher manufacturers or satellite operators.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

Our competitive advantage lies in the development and mastery of critical technologies such as cooling systems, additive manufacturing, advanced materials, and green chemical propellants. These technologies enable us to push the boundaries of what is possible in space propulsion and provide solutions that address key industry needs, including reusability, high efficiency, and sustainability. Additionally, they bring about drastic cost reductions and enhance competitiveness in the space industry.

MAIN PROJECTS

Propulsion systems:

ARCOS Aerospike engine: 300kN-750kN thrust. For any launcher stage and spaceplanes.

U-Nyx In-Space propulsion system: 1N-200N. For satellites, OTVs and landers.

Kronos: +2MN thrust. For heavy lift launchers.



>PLDSPACE

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We are an engineering, manufacturing and service-driven company, with deep expertise in space launch technologies - we recently became the first company to launch a private rocket in Europe.

Our mission is to become a global leading player in the orbital launch market through an affordable, first-class and highly-flexible small satellite launch service experience.

We are united by a shared passion: lowering barriers by making space more accesible and supporting missions that will make us smarter, safer and wealthier.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

PLD SPACE technologies are based on maturity, simplicity, cost-effectiveness, and performance.

PLD SPACE is a systems-oriented company and applies a quick design-build-test cycle philosophy, allowing for rapid detection of possible system interactions.

PLD SPACE Headquarters are located in Spain. PLD SPACE owns the largest private testing facilities in Europe, facilitating swift design, manufacturing, and testing cycles that align seamlessly with PLD SPACE's philosophy.

95% of our rockets will be manufactured in-house using traditional technologies.

MAIN PROJECTS

MIURA 5 is engineered to offer reliable, customised and high-frequency launch services.

MIURA 5 launch vehicle is the two-stage orbital launcher of the MIURA family designed, built and operated by PLD SPACE. Dedicated to small payloads, it can provide dedicated missions and rideshare options while minimizing the usual complexities and schedule risks linked to launches using medium or heavy-lift launch vehicles.

PLD SPACE offers hands-on support throughout the customer journey, from contract signature to launch.

MIURA 5 is scheduled to offer a highly-flexible service launching 30 missions per year from multiple space ports, including the historic Guiana Space Centre.

MIURA 5 provides direct-injection and multi-burn launch services to all commercially relevant orbits including LEO, equatorial, mid-inclinations, polar and SSO.

MIURA 5 is capable of carrying out dedicated launches, as well as rideshare and piggyback missions.

MIURA 5 contributes to ultra-green and clean technology practices with measures such as the recovery of the first stage, which splashes down in the ocean and is recovered to be reused for subsequent flights.

In addition, PLD SPACE uses bio-kerosene (bio RP-1) and liquid oxygen (LOX) in its in-house designed TEPREL-C engines, which contributes to reducing the carbon footprint.



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RADIAN SYSTEMS is dedicated to revolutionizing space engineering by simplifying thermal analysis with the world's first cloud-based space thermal analysis software. Designed to provide agility in both modelling and computing processes, Radian's software is accessible through any web browser and leverages a scalable network of cloud-based computing resources. The powerful simulation engine replicates the orbital environment and thermal solutions, complete with ready-to-use parts, materials, surface treatments, and CAD import capabilities.

We offer solutions to satellite developers and integrators - with a more intuitive tool, simple workflow and faster modelling - and to universities - as a tool to learn about thermal analysis complementing theory lessons and for cubesat projects. Since 2019, more than 30 satellites have been launched to space with Radian's thermal analysis, validating the software in-orbit.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

The underlying simulation engine reproduces the orbital environment and the thermal solution. Detection of penumbra, multibody eclipse, or telescope pointing are some of the featured aspects of the simulated conditions, all validated against GMAT. Thermal models are based on lumped-parameter networks, linked by conductive couplings (supported by contact detection), and radiative couplings (computed by Monte Carlo ray-tracing). Dissipative loads may also be thermostatic, recreating the behaviour of heaters.

Thermal analyses are supported by the Databank, a catalogue of satellite components, modelled materials and surface treatments, orbits, and attitude configurations. The Databank enables rapid importing and reusing of modelled components, and access to COTS parts from manufacturers. Importing and exporting thermal models compatible with other tools is also possible, thanks to the support of the Thermal Analysis & Software group at ESA/ESTEC.



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SATLANTIS is a Space technology company for Earth observation and Universe exploration providing end-to-end personalized satellite missions, addressing challenges in sectors such as environment, security, infrastructure, and energy. The optical payloads iSIM, developed by SATLANTIS, are high and very high-resolution miniaturized cameras operating aboard small satellites, offering multispectral simultaneous coverage across visible (PAN, RGB) and infrared (NIR, SWIR) spectral ranges, alongside video and polarimetry. In addition, the company can offer TIR capabilities thanks to its subsidiary SuperSharp.

SATLANTIS' comprehensive solutions integrate both the flight and ground segments (Mission Control Center & Software, Data Hub). With strategic partners, SATLANTIS provides Full Solutions for Small Satellites by controlling its own optical channels embarked in agile small sensor buses, operated in intelligent missions that generate unique customer proprietary data, capturing critical spectral information through software, hardware, and services for remote sensing applications.

SATLANTIS' technology has been successfully demonstrated in space across six missions, with two more planned before 2025.

The Company headquarters are in Bilbao, Spain, within the University of the Basque Country Science Park. Within the Group there are: SATLANTIS US based in the Innovation Hub, University of Florida (Gainesville); SuperSharp, a Company based in Cambridge (UK); and SATLANTIS Frances in Bidart.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

S A T L 🔥 N T I S

SATLANTIS offers a high-performance set of innovative Earth and Universe Observation technologies to answer the growing demand of geo-requirements such as following irregular geometry on Earth and spectral needs at international level, providing integrated satellite solutions built around its customizable High and Very High-Resolution optical payloads.

The core technology, developed by the Company, is the optical payload iSIM (integrated Standard Imager for Microsatellites), a family of HR and VHR miniaturized cameras for Earth Observation operating onboard Small Satellites, with proven flight heritage.

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SATLANTIS expertise is complemented by SuperSharp, an Earth-imaging company developing unfolding space telescopes to capture high-resolution thermal infrared (TIR) images of the Earth, by fitting a large telescope in a small satellite, making low-cost, high-resolution, and frequent Earth-imaging possible.

SATLANTIS, together with SuperSharp, cover the whole range of the light spectrum from visible (VIS) and short-wave infrared (SWIR) to long-wave infrared (LWIR).

Through the innovative upstream microsatellite technologies for EO vertical services, SATLANTIS' High- and Very High-Resolution optical payload can be used for different applications, such as detection and quantification of methane emissions, defence and intelligence and monitoring of critical infrastructure.

The core competencies involve:

EO instrumentation:

- Hardware (optomechanics and electronics)
- Software (world-leading image processing techniques developed in-house)

Agile acquisitions:

- Agile observation strategies using forward motion compensation techniques to follow non-linear targets on the ground.

E2E solutions:

- Development of turnkey satellite solutions (16U and Microsats) for various applications, including methane leak detection and quantification for the O&G industry.

MAIN PROJECTS

SATLANTIS' has designed, developed and proven several Space cameras and provided end-to-end Full Missions for EO, so far:

- In-orbit demonstration of iSIM-170 launched to the ISS within a JAXA mission (Q2 2020).

- In-orbit demonstration of iSIM-90 launched to the ISS within CASPR mission for NASA / DoD in collaboration with SHREC (Q4 2021).

- URDANETA-ARMSAT1, launch of 16U CubeSat End-to-End solution mission with an iSIM-90 VNIR (Q2 2022).

- GEISAT Precursor, launch of 16U CubeSat with and iSIM-90 VNIR-SWIR, for methane measurements with satellite data, selected as a Copernicus Contributing Mission (CCM) (Q3 2023).

- iSIM-90 VNIR for Mantis ESA mission for Oil&Gas, onboard a 12U CubeSat (Q4 2023).

- HORACIO: launch of a16U CubeSat with an iSIM-90 VNIR-SWIR (Q1 2024).

- GARAI: launch of two twin iSIM-SAT MicroSats with one iSIM-170 PAN-VNIR and one iSIM-90 Polarimetric VNIR-SWIR each (Q4 2024 and Q1 2025).

- Participation in ARRAKIHS ESA Scientific Mission with an adapted iSIM for Universe exploration (2030).

We focus on innovation, with a dedication to research and development (R&D) endeavors.

SuperSharp developed a space rated version (TRL 6) of their unfolding telescope, which was delivered in March 2024 under a UK Defence and Security Accelerator (DASA) contract. They are planning an In-Orbit demonstration of the telescope in 2026.

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SENER is a Spanish engineering and technology group that develops the most advanced and innovative solutions in different markets. In Aerospace & Defence, SENER is pioneer in the design of satellite technology and equipment for space exploration and the defence industry. We have worked for over five decades with the main space agencies in the world –ESA, NASA, JAXA– and major companies in these sectors, always with the highest level of reliability. We are proud of our experience and excited about what's to come.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

In the Aerospace industry, SENER develops high added-value products and technology for satellites and launchers in institutional, telecommunications, and scientific programmes, with capability for recurring series production across all its product lines. Four major lines of activity:

- **Electromechanical systems:** We've supplied NASA, ESA or JAXA since 1956, and we are key supplier in ESA's science programmes (references: JUICE, Solar Orbiter, Perseverance).

- **Communications systems:** We provide high-gain antennas and TTC, as well as a wide range of passive and active RF across the entire microwave range. Additionally, SENER supplies end-to-end Data Down Link equipment for the most demanding missions (references: Spainsat NG, Onesat, OneWeb).

- **Navigation and control systems:** Navigation units for launchers and GNC and AOCS systems (references: Naviga/ VEGA-C, PROBA-3, Euclid, Herschel & Planck, IXV and Space Rider).

- In science: SENER provides optomechanical systems for large telescopes in astronomy (references: M2, M3 or M5 cells of ELT).

MAIN PROJECTS

- SCIENCE: Rosetta, Planck, Solar Orbiter, JUICE, BepiColombo, Euclid, Gaia
- **SPACE EXPLORATION:** Space Station, Exomars, Curiosity, Pathfinder, Lunar Gateway
- EARTH OBSERVATION: MTG, SMOS, Sentinel 1, 2, 3; Flex, CHIME, LSTM, CIMR
- TELECOMS: Globalstar, O3B, Iridium Next, OneWeb, Onesat, Spainsat NG
- OTHERS: ATV, IXV, Space Rider, Vega-C, Proba-3





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startical

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TECHNOLOGICAL CAPABILITIES / PRODUCTS

STARTICAL will launch a constellation of Low Earth Orbit satellites which will provide satellite-based services giving access to the existing ground technologies from space in order to provide air traffic services anywhere in the world. STARTICAL will not require any changes to avionics. Pilots and air traffic controllers will not need additional training and both VHF and ADS-B data will be processed by current air traffic control systems without modification.

MAIN PROJECTS

ECHOES project:

ECHOES Digital Sky Demonstrator will investigate some key functionalities, such as inter-satellite links, on-board processing of data in the satellite or simultaneous transmission and reception of VHF communications. In addition, the Demonstrator will focus on operational aspects of the technologies will also comprise operational topics, involve more stakeholders (airlines and ANSPs) and contribute to the regulatory and standardisation of the space-based VHF technology based on the analysis of end-to-end system performances.

This project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No [101079448]





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TELSTAR expertise in high vacuum and temperature control allows us to deliver complete Thermal Vacuum Chambers, especially designed to test any kind of device, covering the range from full-size spacecrafts to cubesats and small flight hardware. Using our own thermal control systems, TELSTAR TVAC chambers cover the most demanding temperature ranges and heating / cooling speeds. We provide highly standardized systems for NewSpace applications like our TVAC3.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

- High Vacuum Technology
- Thermal Control System (mechanical cooling)
- Thermal Control System (cryogenic GN2)
- Customized TVAC systems

MAIN PROJECTS

Development of Standard Thermal Vacuum Chamber TVAC3 (2022) ISRO COMNAVAC (6.5-meter diameter) (2019)



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OSSIE OTV Services Orbit Solutions to Simplify Injection and Exploration



We provide reliable in-space logistics, rideshare and dedicated launch services for Small Satellites, from LEO to the Moon and beyond.

UARX SPACE provides in-space transportation and launch services for CubeSats and the Small Satellite industry. Founded by Yanina Hallak and Andrés Villa, both CalPoly alumni, the University known worldwide for being the home of the CubeSats. The UARX SPACE Team is formed by an interdisciplinary team of professionals with different backgrounds and experienced aerospace, electronics, and mechanical engineers with experience designing Earth observation and Geostationary satellites, scientific Earth observation missions, and payload instruments for deep space. The team expertise includes developing satellites from 1 Kg to 3500 Kg and the areas of expertise include critical onboard software, structural analysis, CDH, mass memory, thermal analysis, project management, systems engineering, assembly, integration, and testing, and operations. The company headquarters is located in Nigrán, Galicia, Spain.

TECHNOLOGICAL CAPABILITIES / PRODUCTS

Launch Service

- We offer world-class services to help your spacecraft reach traditional and non-traditional orbits, from Low Earth Orbit, to the Moon and beyond. In addition, we work with industry leaders launch vehicle providers that can accommodate different payloads, either a CubeSat, a PocketQube, a Small Satellite, or just an experiment that needs to reach orbit as a demonstrator.

Engineering Services

- Mission Analysis
- Formal Peer Reviews
- Space System Engineering
- Thermal Analysis
- Power Analysis



- Structural and Stress Analysis

MAIN PROJECTS

OSSIE (Orbit Solutions to Simplify Injection and Exploration) orbital transfer vehicle (OTV). OSSIE is capable to transport up to 400kg of CubeSats and other small satellites and utilizes green propellant thrusters to transfer its payload to the target orbits. After launch into a traditional LEO orbit, OSSIE's customers can be injected into a variety of orbits including GTO and Lunar transfers.

The Reliable and Advanced Mission Injector (RAMI) is designed to support long duration missions and therefore incorporates communication and power supply ports for the CubeSats. In order to support the most advanced CubeSat systems RAMI can accommodate protrusions between 15mm and 20mm beyond the CubeSat walls.

SAURON. Separation Adapter Unit & Ride On.SAU&RON is a family of separation rings built for those small satellites that require a standard and reliable 8" or 15" interface to a launch vehicle.

Lunar Cargo Services (LUCAS) vehicle to deploy spacecraft in orbits around the Moon and it is designing OTV concepts for interplanetary missions.

LOLA (Landing Opportunities for Lunar Activities) intends to generate opportunities for the future of lunar exploration. It will allow the delivery of payloads and instruments developed to perform "in-situ resources utilization" on the Moon.





Organizer









In collaboration with



Two-meter Twin Telescope (Observatorio Internacional del Teide, Canarias)