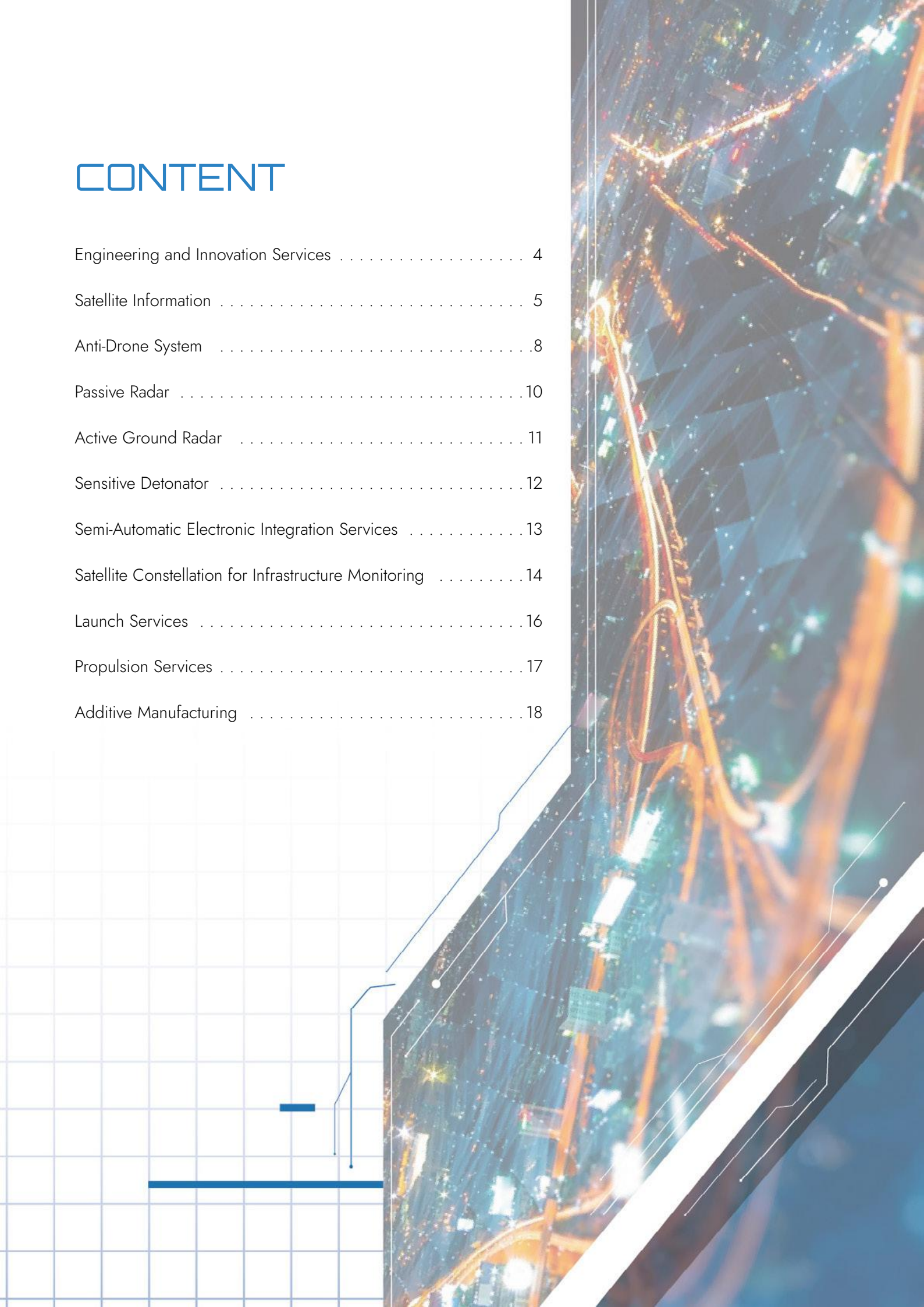

VENG
DEFENSE & SECURITY

CONTENT



TECHNOLOGICAL INNOVATION WITH A SPACE FOCUS

We are a high value-added technology services and development company specializing in space activities. We have a team of highly qualified professionals and technicians in the main branches of engineering, with extensive experience in R&D&I projects and in solving complex technological challenges.

We offer the defense, security, space industry, and high-tech sectors a comprehensive set of solutions that include engineering, manufacturing, and production services. Our capabilities include satellite constellations for infrastructure monitoring, active and passive ground radars, anti-drone systems, satellite information provision, propulsion technologies, and space launch services.

At VENG, we transform space knowledge and technology into concrete, strategic, and high-impact solutions for the defense and security industry.

+17 years of experience

+380 employees, including professionals and technicians

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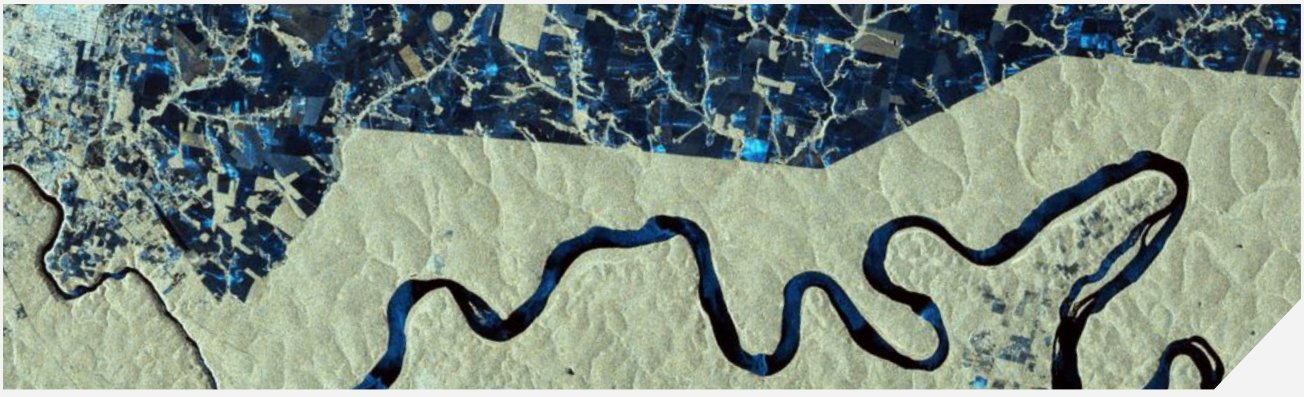
ENGINEERING AND INNOVATION SERVICES

At VENG, we provide highly complex engineering services, combining the technical rigor of the space sector with an innovative approach geared toward industry in general.

Our Aeronautical Mechanical Engineering team has extensive experience in MAIT (Manufacturing, Assembly, Integration, and Testing) processes, following the guidelines of agencies such as NASA and ESA. We successfully transfer this knowledge, forged in the most demanding engineering environment, to sectors such as energy, nuclear, and oil & gas, contributing capabilities in the design, integration, and testing of complex systems. At the same time, our Electronic Engineering team develops satellite instrumentation systems and subsystems, excelling in SAR missions such as SAOCOM and Sabia-Mar, and extending that expertise to automation, defense, and industrial process control projects.

In addition to these technical skills, we have our Innovation Laboratory, a space designed to promote creativity, experimentation, and continuous learning. Applying agile methodologies such as Lean Scrum, we develop incremental MVPs and disruptive ideas, generating functional prototypes that allow solutions to be validated before their final implementation. This approach reduces risks and costs, accelerates development times, and encourages early adoption of new technologies by our customers.

At VENG, we view innovation as a daily practice that cuts across all areas of work and enhances knowledge transfer between sectors. This combination of precision engineering, applied innovation, and collaborative culture positions us as a strategic partner for projects that demand technical excellence, creativity, and long-term vision.



SATELLITE INFORMATION

At VENG, we develop high value-added satellite solutions that strengthen management, security, and operational efficiency in the sector. We provide products and services based on cutting-edge technology, using information from the SAOCOM® constellation and other complementary Earth observation satellite systems. This integration allows us to offer comprehensive coverage and solutions tailored to the specific requirements of each mission.

The SAOCOM® constellation, equipped with a quad-polarization synthetic aperture radar (SAR) in L-band, is a unique technology worldwide. Its ability to continuously observe the Earth's surface — without restrictions due to weather or lighting conditions— enables reliable and permanent monitoring.

As the official operator of the SAOCOM mission, VENG has exclusive access to its data and operational capabilities. This advantage, combined with the use of information from multiple sensors, allows us to provide broad coverage over large territorial areas and remote zones, facilitating the continuous monitoring of critical infrastructure, energy corridors, borders, maritime spaces, and natural environments of strategic interest.

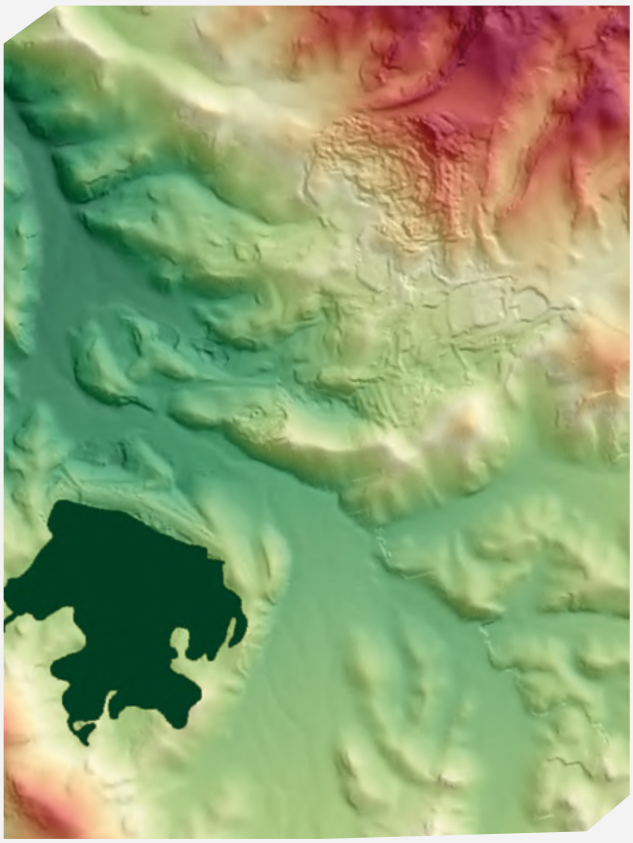
Our solutions strengthen decision-making based on risk analysis and early detection of changes, providing concrete tools for incident prevention and operational planning. The services are highly available and fully tailored to each client's needs, facilitating the effective adoption of satellite technology in their operational models.

With a highly qualified technical team in SAR data processing and interpretation, and our own operational capacity covering the entire management cycle, we guarantee confidentiality, continuity, and availability of information. This combination of experience, infrastructure, and commitment consolidates us as a strategic ally for security, sustainable development, and technological transformation in the sector.

Digital Elevation Models (DEM)

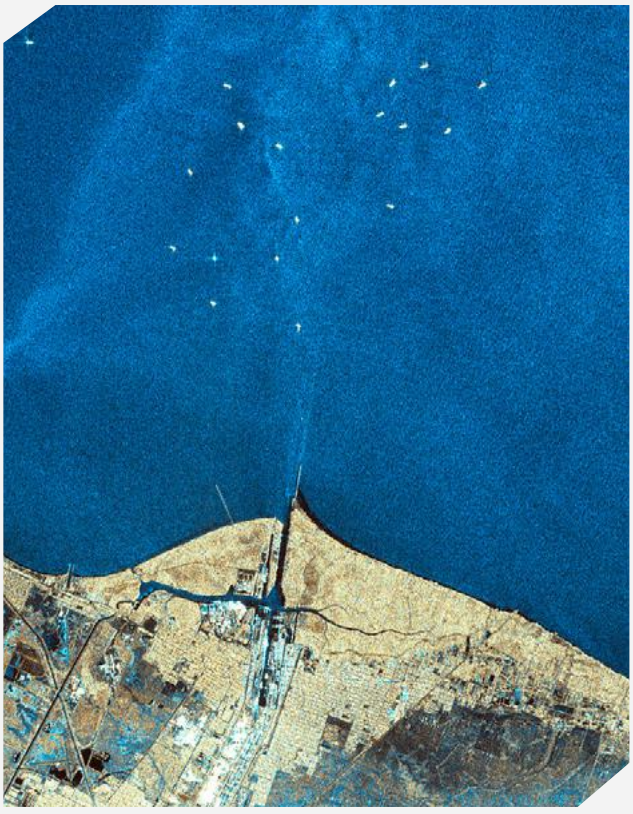
The digital elevation models of the SAOCOM Constellation provide high-quality and highly representative terrain elevation data due to their ability to penetrate clouds and vegetation.

DEMs are obtained from archived SAOCOM® images, as well as future ones, thus ensuring past and current models.



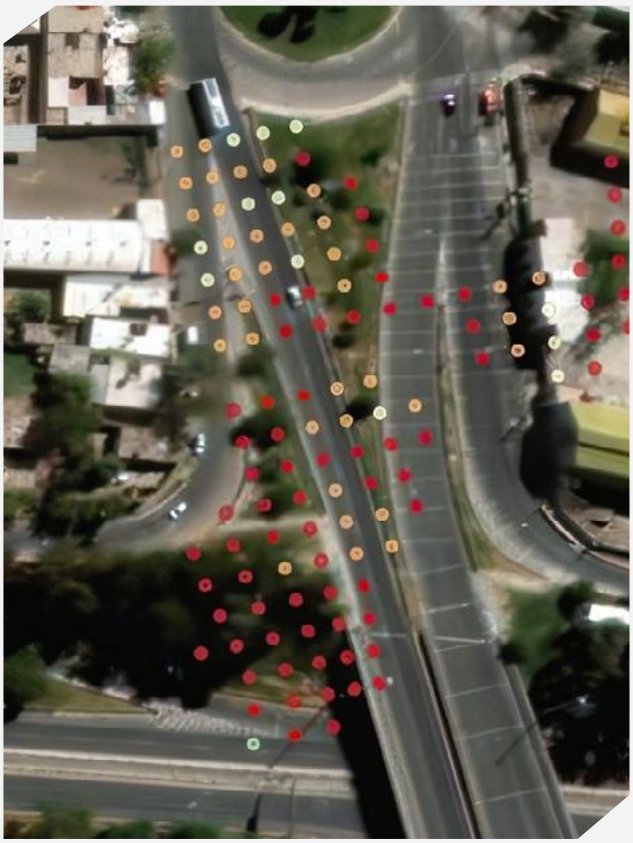
Coastal monitoring and vessel detection

SAOCOM's L-band SAR images enable continuous monitoring of coastal areas, both day and night, regardless of weather conditions. This service allows vessels to be identified both along the coastline and at sea, as well as recording changes in their position between different satellite scenes. It is especially useful for maritime control, port security, resource management, and early detection of irregular activities.



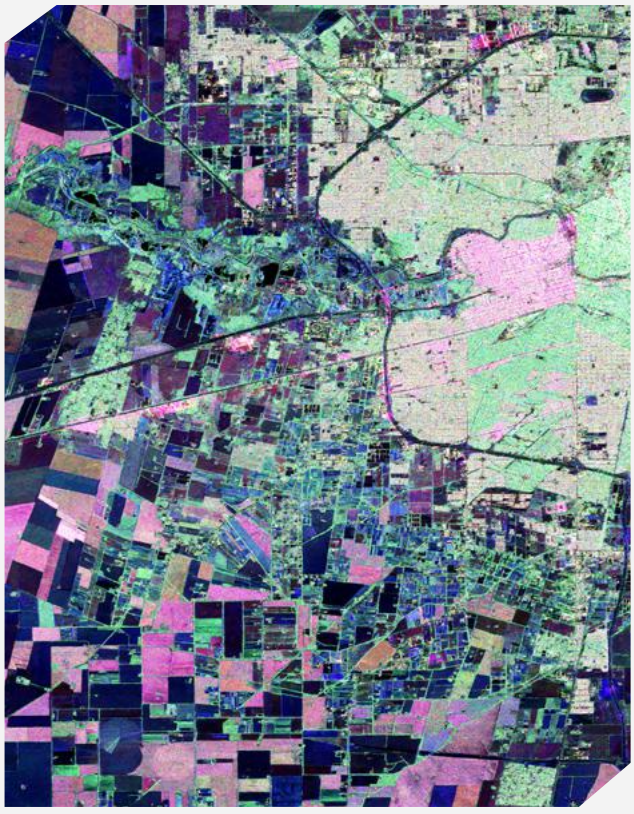
Infrastructure monitoring

Debido a la alta frecuencia de revisita de la constelación SAOCOM, junto con la resolución de su radar, es posible detectar deformaciones sub-centimétricas en infraestructura crítica mediante técnicas de Interferometría SAR. Esto posibilita el seguimiento del estado estructural de rutas, puentes, oleoductos, represas y vías férreas, anticipando fallas, optimizando tareas de mantenimiento y respaldando la toma de decisiones con información objetiva y periódica.



Border monitoring

The use of SAOCOM images allows for the monitoring of large expanses and remote areas in border zones, both day and night and regardless of weather conditions. The combination of SAR scenes and the repeatability of the constellation facilitates the recognition of movements, the monitoring of infrastructure, and the detection of changes in the territory. This service significantly improves surveillance, security, and territorial control capabilities.



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ANTI-DRONE SYSTEM

Detection, tracking, and neutralization

In a context where drones are increasingly accessible and their misuse can pose security risks, VENG has developed a comprehensive solution, which can be integrated into existing airport infrastructure, for protecting airspace in critical areas. The system combines detection, location, and neutralization technologies, offering constant and adaptable surveillance. Its scalable design allows it to be adjusted to different risk levels and environments, ensuring an effective response to unauthorized threats.

Advantages

- Constant aerial surveillance without the need for direct visibility of the drone.
- Non-invasive neutralization, without physical contact with the aircraft.
- Immediate flight interruption or automatic removal of the drone.
- Accurate geolocation to optimize response.
- Comprehensive protection of critical facilities, mass events, borders, and airports.
- Scalable solution adaptable to each customer.

General features

- Receiver antenna array for passive drone detection
- Identification of operating frequency and signal source direction
- Active defense module using jamming signals
- Advanced triangulation system for precise geolocation
- Configuration adaptable to regulations and risk levels
- Domestic development with technology scalable to different scenarios

Drone detection equipment

A passive system that detects unmanned aircraft omnidirectionally or directionally without emitting signals. It identifies UAVs and locates their operator through flight path.

It operates between 300MHz and 6000MHz, capturing radio signals to alert to intrusions.

It reports detection with visible and audible alarms. It neutralizes UAVs by forcing them to land or move away from the risk area.

Key tool for protecting sensitive areas against drone threats.

Directional suppression equipment with/without gimbal

Features

Hard landing/return | Long-range counterattack | Multiple frequency interference | Band indicator | Smart functionality | Automatic mode

Operating frequency bands	400MHz, 800MHz, 900MHz,1,2GHz, 1,4GHz, 1,5GHz, 2,4GHz,5,1GHz, 5,4GHz, 5,8GHz
Interference modes	Disconnection mode and forced landing mode
Interference range	1-5km (depends on the environment and the UAV model)
Interference response time	<5s
Gimbal rotation angle	Horizontal 360° vertical 0 - 60°
Operating temperature	-40c to +60c
Protection level	Ip6
Power supply	AC220V+44V

Omnidirectional waterproof suppression equipment

Features

Omnidirectional | Effective suppression | Resistance to adverse weather

Power consumption	≤600W
Operating distance	≥2 Km.
Dimensions	489mm*461mm*233mm
Operating frequencies	400MHz/800MHz/900MHzy 1,2 Ghz y 1,4 Ghz y 1,5 Ghz/2,4o 5,8 Ghz/5.1~5.9GHZ
Operating temperature	-40℃ a +60℃
Rj45 control interface	RJ45

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PASSIVE RADAR

VENG's Passive Radar offers a new dimension in aerial, naval, and land surveillance. Unlike conventional radars, it does not emit signals, but rather uses existing electromagnetic energy in the environment to silently detect and track objects. This technology allows for discreet and secure operations, ideal for scenarios where invisibility and stealth are essential.

Advantages

- Invisible and undetectable by enemy radars.
- Long-range coverage for borders and coastlines.
- Accuracy in tracking slow, low-mobility, or highly agile targets such as missiles.
- Operation in urban and hostile environments without adding electromagnetic pollution (no legal permits required for use).
- Totally independent of weather conditions.
- Rapid and flexible deployment in any environment.

General Features

- Passive detection system that does not require signal emission
- Use of environmental electromagnetic sources
- Antennas designed with a range of over 700 km and up to 12,000 m altitude
- Capable of tracking aircraft, naval and land targets

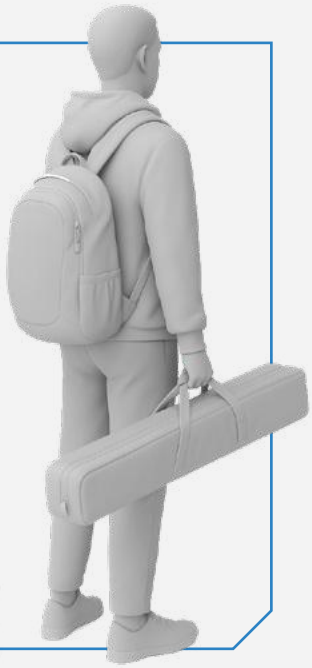
- High mobility and ease of transport
- Adaptable installation in buildings, fields, rooftops, or confined spaces
- Remote operation with connectivity to artificial intelligence systems

ACTIVE GROUND RADAR

VENG's Active Ground Radar is a portable surveillance system designed for quick and easy installation. Its intuitive and user-friendly terminal software enables real-time mapping and accurate target detection on screen, offering an effective and accessible solution for ground control and security missions.

Applications

- Borders
- Checkpoints
- Prisons
- Depots
- Perimeter security
- Fields



General Features

- Portable backpack design
- Detection range (5km)
- High data speed and high positioning accuracy
- Adaptable to all weather conditions
- Directional antenna
- Windows 10 tablet
- Rechargeable battery

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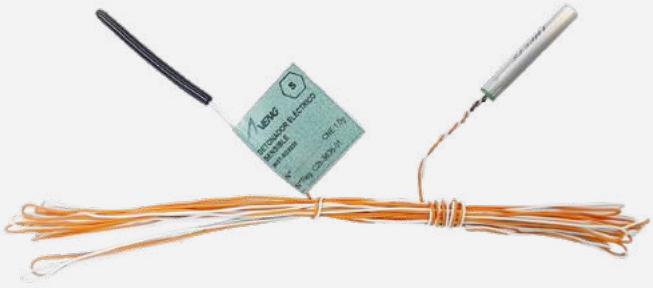
SENSITIVE DETONATOR



The VENG Sensitive Electric Detonator is a standard product for the industry in general, mainly geared toward the needs of Defense and Security personnel in tasks involving the destruction of suspicious items and other specific demands. Its sensitive and instantaneous characteristics provide versatility so that professionals may deal with a variety of situations in the field. It has the ability to initiate an RDX detonating cord laterally and frontally. The 4-meter cables provide a safety margin for its handling.

Features

Sheath	Aluminum, 45 mm long
Connection cables	2 x 4 meters; AWS 22 monofilament; PVC insulation; orange-white
Igniter resistors electrical	1.4 – 1.6 Ohms
Closing plug	Antistatic plastic material with sparkgap holes
Base load	850mg rdx
Full fire current	1.0 A (Electric igniter Hi fire type 1 A)
Non-fire current	0.18 A (Electric igniter Hi fire type 1 A)
Esd resistant	+/-25kv ; 150pf ; Pin-pin and air (HBM model)
Temperature resistance	105°C@1hr
Pull on cables	31n traction between the detonator body and the cables (handling).
Immersion	2hr@1bar

Storage

Storage	-20 °C to +70 °C and RH ≤ 65%. Use is recommended within 2 years from the date of manufacture.

Packaging information

	Presentation 1.4S	Presentation 1.4B	ANMAC Registration No.
Gross weight	8,5 kg	9,2 kg	C2B-9836-01 / Pending
Net weight	625 +/- 60 g	2500 +/- 250 g	NOTE: Final disposition in accordance with the regulations of the local authorities.
Net explosive per box	25 +/- 2,5 g	100 +/- 10 g	
Box dimensions	30 x 30 x 18 (cm)	30 x 30 x 18 (CM)	
Un no.	0456	0255	
Hazard classification	1.4S	1.4B	

SEMI-AUTOMATIC ELECTRONIC INTEGRATION SERVICES

We offer a high-quality electronic board assembly service, suitable for both industrial and space applications. We are guided by IPC standards, from IPC-A-610 and IPC-J-STD-001 industrial standards to the most rigorous space requirements.

We have automated SMT technology and manual soldering technology for both surface mounting and insertion, allowing us to adapt to a variety of assembly needs. Each board is inspected and validated to ensure durability and reliability, meeting the most demanding customer and regulatory requirements.

With high-quality automated SMT (Surface-Mount Technology), we have the capacity to assemble electronic boards, adapted to each customer's specifications, and ensuring maximum durability and reliability. We use advanced machinery to achieve maximum precision and reliability in every project.

Manual soldering and aerospace quality inspections

Capabilities

- Electronic Manufacturing Engineering
- PCB design review for implementation of inspections and workmanship requirements
- Manual SMD Soldering and Insertion

Inspecciones

- Visual Inspection
- RX Inspection
- Solderability Test

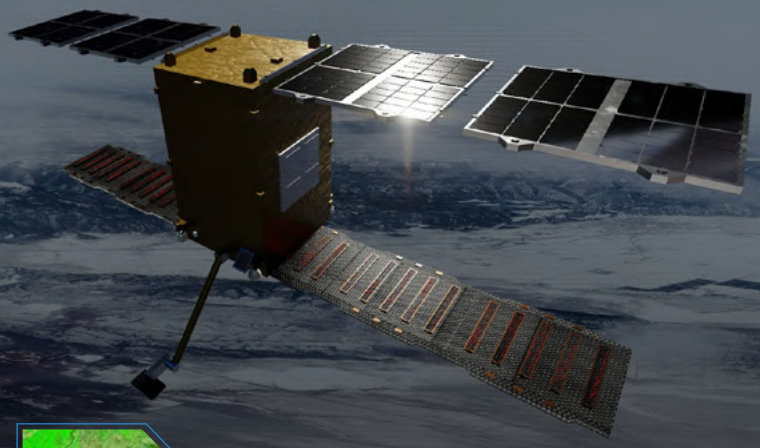
Reference standards

- IPC 610, J-STD- 001, IPC 620, IPC 7721/11, IPC A 600
- J-STD-001 Space Appendix
- IPC 620 Space Appendix
- ECSS-Q-ST-70-08, ECSS-Q-ST-38, ECSS-Q-ST-70-61

SATELLITE CONSTELLATION FOR INFRASTRUCTURE MONITORING

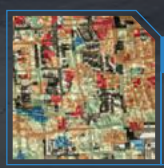
We have developed an advanced constellation of X-band SAR satellites. It redefines infrastructure monitoring with a scalable satellite system that offers centimeter-level resolution, ensuring image capture for greater target identification accuracy and proactive decision-making at a disruptive price.

The system concentrates all available resources on offering an effective and specific solution. This strategy allows the constellation to reduce costs and operate at disruptive market values, ensuring accurate and accessible surveillance of critical infrastructure around the world.

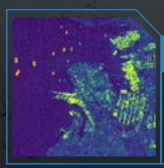


Satellite Information Strategic Uses

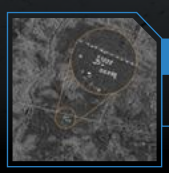
1 Target detection and operational intelligence



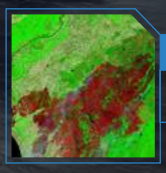
2 Infrastructure monitoring



3 Support for land and maritime operations



4 Border control



5 Emergency management

6 Sea, forests, extensive activities: Mining & Oil & Gas

Management and protection of natural assets

7 Illegal fishing

Control and management of waterways and

Technical Characteristics

Constellation of microsatellites for Earth Observation
Objective > 3 satellites
Global Coverage

X-band SAR Technology
Cloudy / Day / Night
World-class State-of-the-Art

Optimized Design
"New Space" Cost Solution

High revisit frequency
Sub-daily

Rapid response
Delivery time < 1 hour

High resolution
Sub-meter / High definition demand

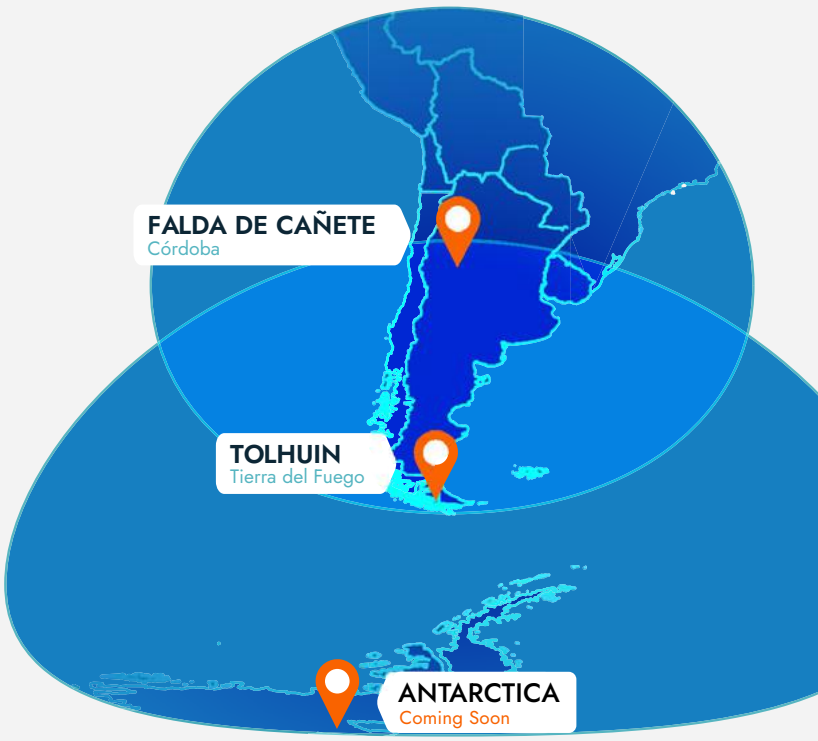
Operational capacity
Operational training and acquisition of space engineering capabilities for the aerospace force. Deployment possible using existing ground stations of the National Space Agency and the Armed Forces, with minimal intervention

Technological control of the system
Rapid response in the short term, technological sovereignty in the long term

Data Analytics Platform
Control and flexibility
Access to other satellites

Operational Capability

- Coverage Area: Complete coverage of the Southern Cone.
- Ground Segment: A backbone of ground stations, integrable with new capabilities to be developed.
- Command, Control, and Analysis Center: On-Premise infrastructure.
- Product Delivery Time: L1 < 1 hour.
- Constellation Revisit Time: Sub-daily.



LAUNCH SERVICES

High availability and strategically located launch sites for efficient operations

We have the Manuel Belgrano Space Center, strategically located to ensure safe and efficient launch operations. Our infrastructure allows direct access to SSO orbits, optimized ground tracking, and a low-risk launch environment. We provide comprehensive solutions for space missions with high standards of reliability and performance.

Efficient, low-risk operations

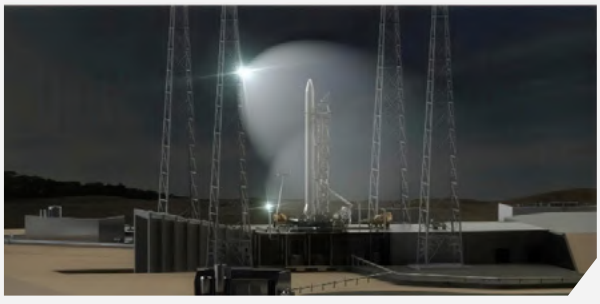
- Direct launch to SSO
- No dogleg
- Suborbital flight over the Argentine sea
- Polygonal safety

High availability

- Launch platform and support facilities of our own

Launch operations with few entry barriers

Manuel Belgrano Space Port
Bahía Blanca, Buenos Aires, Argentina



PROPULSION SERVICES

Since our inception, one of our main areas of technological development has been liquid propulsion, focused primarily on the development of propulsion systems for launch vehicles and small thrusters for launch vehicle attitude control and potential use in the satellite industry.

RS2 First Stage Engine

The RS-2 is a bipropellant liquid rocket engine with a single regenerative cooled thrust chamber, fed in pressurized form. It was used as a test platform for swirl injectors, ignition characterization, and evaluation of thermal loads in cooled thrust chambers. The thrust chamber was manufactured using a combination of additive technology and electroforming.

Thrust ar SL	420 Kgf
Propellants	LOX/RP1
Specific impulse at SL	350 S
Injection type	Bipropellant Swirl

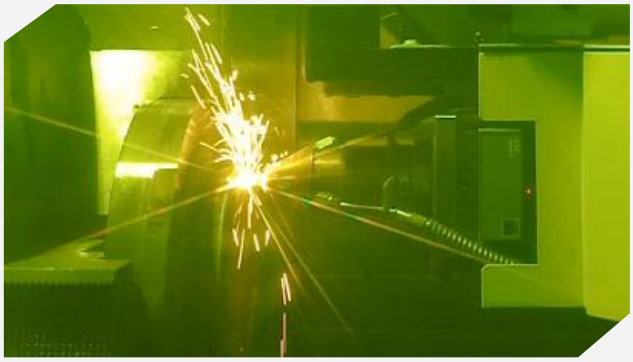
MT-B Second Stage Engine (under development)

The RS-2 is a bipropellant liquid rocket engine with a single regenerative cooled thrust chamber, fed in pressurized form. It was used as a test platform for swirl injectors, ignition characterization, and evaluation of thermal loads on cooled thrust chambers. The thrust chamber was manufactured using a combination of additive technology and electroforming.

Thrust to adapted nozzle	4280 Kgf
Propellents	LOX/RP1
Specific vacuum thrust	366 S
Feed system	Gas generator cycle

ADDITIVE MANUFACTURING

Additive manufacturing service: metal 3D printing (DMD) and electrodeposition facilities. Our foray into cutting-edge metal additive manufacturing technologies allows us to develop complex parts using simpler and more efficient processes.



- Unique and complex parts for critical processes.
- High value-added ad hoc manufacturing.
- Innovative solutions for strategic maintenance.

3D Metal Printer

Manufacturer	Okuma Multus U4000
Maximum diameter	650 mm
Maximum length	1.500 mm
Spindle speed	4.200 [3.000] rpm

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Institutional Relations Management

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