

The image features a composite background. On the left, a map of the United States is overlaid with white lines, showing a focus on the western coast. The main part of the image is a photograph of a coastal border area. A long, multi-layered border fence runs along a dirt road that follows the coastline. In the sky, a small, white, four-engine aircraft is flying. The sky is blue with some light clouds. The overall aesthetic is modern and technical, with a teal vertical bar on the right side.

BORDER CONTROL

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The protection of homeland territory requires the capability to secure national borders in both the land and maritime domains. Assuring borderline security, denying illegal entry of people and goods as well as countering terrorist activities and movements are the main objectives, usually by Border Police or Border Guard Authorities.

The aim of modern border control is therefore to build a smart protection belt all around the Country, making efficient and flexible use of multi-role resources, and leverages on intelligence and operational experience to adapt to ever-changing situations.

With a consolidated breadth of expertise in the defence and civil domains, we have developed a range of modular solutions to ensure effective and reliable security and border control operations at every stage of the lifecycle.

The company provides multi-functional integrated solutions, based on state-of-the-art technologies, in order to meet the increasingly demanding requirements of border control bodies in terms of reliability, safety and security.

Our solutions include extended sensor coverage and surveillance capability, communications, physical security, command and control and support to border forces.

Our approach spans throughout the whole lifecycle of the border control solution including: assessment, solution design and implementation, risk mitigation, maintenance and evolution management.

SUMMARY

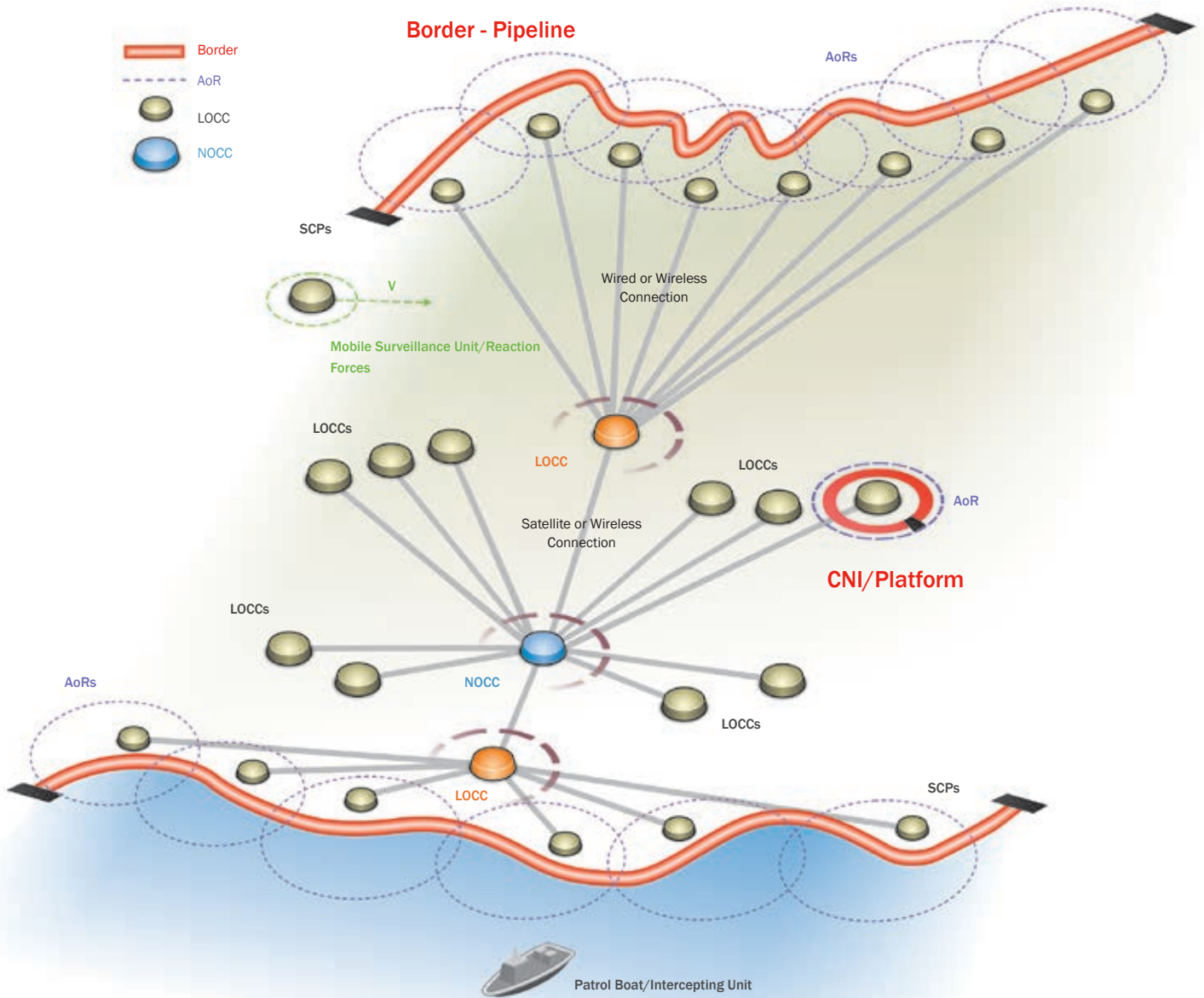
- Long-standing experience in the border control sector
- Strong integration expertise
- Flexible security solutions and operator alert systems
- Deep understanding of C2 and management of border control systems
- Integrated communication solutions employing operation-specific technologies
- In-house development capability for operational communications technologies, leveraging experience in mission-critical networking
- Design and development of state-of-the-art sensors
- Proven process, methodology and advanced technologies mixing proprietary products and best-in-class third parties and components to integrate.



SURVEILLANCE AND PHYSICAL SECURITY

Our solutions address the needs of Border Control Authorities in a scalable and flexible way, adapting to different geographic conditions, size, scale and the diverse requirements of various threats modes.

From long range surveillance to perimeter protection, the company designs, delivers, installs and integrates a complete range of protection and access control systems to guarantee secure and efficient operations. Specialized communications and subsystem integration at command and control level increases situation awareness and solution effectiveness.



NOCC - National Operations C2 Centre

- Global situational awareness
- Recovery management
- Mission planning
- Sectors coordination

LOCC - Local Operations C2 Centre

- Local situational understanding
- Resources management
- Intervention coordination

SCP - Site Control Post

- Surveillance
- Recognition/Identification
- Interdiction

AoR - Area of Responsibility

- Short range sensors
- Medium range sensors
- Long range sensors

CNI - Critical Network Infrastructure

BORDER CONTROL

PHYSICAL SECURITY SOLUTIONS

| BORDER CONTROL SOLUTIONS | | |
|-----------------------------|---|---|
| SHORT RANGE DETECTION | SENSORS | <p>The UGS System is a solution based on a set of unattended ground sensors (UGS) capable of detecting movement and activity. The system dynamically creates and maintains a wireless mesh network able to transfer information and data to remote operation centres.</p> <p>Microphonic Sensors are based on sensors, digital signal processing (DSP) and microphone cables, able to analyse audio signals in the time and frequency domain and distinguish between environmental noises and real sources of alarm on the basis of predefined samples noises stored during the system setup.</p> <p>Buoy systems are mesh solutions for wide area underwater surveillance using different kinds of sensors (acoustic, magnetic and sonar) designed to discover, identify, detect and trace underwater threats. Buoys are also equipped with a localization module and communication link.</p> |
| | FENCES/BARRIERS | <p>Physical security solutions are based on third-party multi technology products (microwave barriers, infrared sensors, fencing, taut wires, micro phonic cables, anti-intrusion) closely integrated with video surveillance. Solutions based on fibre-optic sensing monitoring with different integrated sensors can provide enhanced detection capabilities.</p> |
| LONG/MEDIUM RANGE DETECTION | RADARS | <p>Lyra® 10 is a coherent pulse-doppler solid-state radar operating in the X-Band. It is characterised by compact dimensions, light weight, easy maintenance, low life-cycle costs and fixed tower mobile installations.</p> <p>Lyra® 50 is a radar system specifically designed for marine traffic monitoring and marine environment protection. It is compliant with IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) and IMO (International Maritime Organization) recommendations on VTS sensors.</p> <p>AULOS® is a passive covert radar for aerial and maritime applications. It provides detection and tracking capabilities based on the reflection of commercial broadcast and communication signals.</p> <p>ARGOS-30VS is a fully coherent X-band primary radar for combined long range surface and air surveillance of zones of coastal environment. It is operated from a remote position (unmanned radar site) and can be sheltered for truck transport.</p> <p>Gabbiano radar for coastal applications provides long range detection, automatic tracking and target classification through ISAR imaging (Inverse Synthetic Aperture Radar). The radar can be installed in a surveillance site and controlled from a remote Control Station.</p> |
| | ELECTRO OPTICAL SYSTEMS | <p>The NERIO family of dual use electro-optical systems provides day and night all weather detection, recognition and identification of targets and threats for both land and maritime applications. Through the employment of multiple cameras with varying performance characteristics (field of view etc), it is possible to provide for close, medium and long range coverage.</p> <p>JANUS is an electro-optic panoramic surveillance system for non-stabilised platforms. It provides medium and long range day and night surveillance as well as aiming, designation and tracking of ground, naval and air targets. It is installed on a two axis panoramic gimbal and provided with the control electronics suitable to perform line-of-sight stabilisation. The system incorporates a stabilised platform which makes it suitable for both fixed and mobile observation sites.</p> <p>OBSERVER is a quickly-redeployable and multi-role elevated situational awareness system with the ability to integrate a range of sensor equipment and technologies. Mounted on its integral mast systems, the system offers elevated surveillance of either 10m (OBSERVER 100) or 25m (OBSERVER 250).</p> |
| | UAV | <p>Advanced Unmanned Aerial Systems (UAS) are provided to enhance situational awareness of customers worldwide. The SPYBALL-B and CREX-B Micro UAV's, the ASIO-B Mini UAS, together with the Falco UAS family are systems designed for short to long distance surveillance of critical sites and borders, acting as real-time information nodes. We also offer a full UAS service, including hiring and training as appropriate.</p> |
| ACCESS CONTROL | PEOPLE SCREENING, BIOMETRIC AUTHENTICATION AND GOOD DETECTORS | <p>Flexibility systems combine multiple sources of control to perform multi-level identification. People screening, biometric authentication and good detectors systems are able to handle differentiated access procedures (i.e. VIP, personnel, visitors) with different levels of control and automation and can easily be integrated with perimeter protection and CCTV components.</p> |
| | AUTO-DETECTOR | <p>With specialised hardware and smart algorithms, Auto-Detector is a robust and highly reliable, smart IP Fixed ANPR (Automatic Number Plate Recognition) system that uses advanced technologies to perform embedded OCR processing. It can read vehicle license plates at access gates or during patrolling without any additional (or external) hardware or software.</p> |
| VIDEO ANALYSIS | VIDEO SURVEILLANCE AND VIDEO ANALYSIS SYSTEMS | <p>The company provides systems able to manage and control multiple real-time video technologies including ONVIF compliant cameras and equipment, legacy cameras via digital converters and thermal cameras. Each video stream can instantly replayed and recorded for later investigation purposes.</p> <p>The Video Surveillance System is integrated into the Physical Security Management System capable of analysing video feeds to discover temporal, spatial or more complex events (i.e. virtual fences, objects tracking, people counting, etc.).</p> |



BORDER CONTROL

COMMUNICATIONS - WHERE RELIABILITY MATTERS

Border control requires fully integrated information and communications solutions that are both reliable and robust, in order to enforce coordination for security operators patrolling and reacting to intrusions.

The company can design, build and deploy state-of-the-art mobile military and professional communications, as well as the communications infrastructures which support officers in border control activities.

Specifically, the radios and network infrastructures are designed for network implementation at regional and national levels, providing voice, data and video services to support communications among headquarters, exchange information between security forces and other agencies, as well as interoperability with traffic control systems and deployed units in remote locations.

Thanks to PERSEUS-CSP, our turnkey multi-technology network solutions integrate a range of wired and wireless communication technologies including HF Radios, TETRA, DMR, satellite, wired and wireless wideband systems, links and transport networks. The systems guarantee transparent user connectivity in all circumstances for safe and efficient operations.

As systems integrator, we offer a complete communication package including:

- Secure backbone, infrastructures, terminals and control room
- Diverse Communication System
- To interoperate and integrate with other systems and technologies
- Application portfolio support
- Location based services and data management
- Service to secure existing backbone and infrastructure, for a smooth migration towards new efficiency

| COMMUNICATIONS SOLUTIONS | |
|--------------------------|---|
| TETRA | <p>TETRA is a reference technology designed to provide real-time communications services to professional users. Our modular, scalable and flexible solution includes:</p> <ul style="list-style-type: none"> ▪ Full range of TETRA/TEDS network provision based on own IP products family including infrastructure and terminals ▪ A wide range of services including network design, coverage analysis, ad-hoc features development, integration with existing TLC networks, installation and commissioning and configuration and maintenance. <p>TETRA advantages for border control are:</p> <ul style="list-style-type: none"> ▪ Independent group communications (management of different simultaneous operation without interference) ▪ Individual communications ▪ Voice and data applications <ul style="list-style-type: none"> – Messaging services – Silent operations ▪ Location based services (full situational awareness at command post) ▪ As a possible extension target position, geo-referenced on a suitable map, to share with intercepting vehicles ▪ Enhanced security in respect of HF radios ▪ Interoperation capability with other fixed and radio networks. |
| NETWORK INTEGRATION | <p>The PERSEUS CSP network infrastructure allows the realisation of multi technology networks with unified users and applications management allowing progressive evolution from HF/VHF Radios to Digital professional world.</p> |
| DMR | <p>The DMR system is a professional mobile radio system designed to supply additional improved features compared to an analogue network. Based on a ETSI defined narrow band digital standard, it allows a controlled migration to a digital standard while continuing to use a limited number of frequencies over a wide area. In addition, it gives border control organisations the opportunity to have an easy to set up and use digital network with a wide range of services (voice/data communications, localisation of users, secure access regulations, voice scrambling, network management systems and network flexibility).</p> |
| MILITARY COMMS | <p>Military radios enable net-centric operations for border guards. Our radios operate in H,V and UHF in addition to the SATCOM bands. The communications architecture may also integrate tactical radio relays, SATCOM-on-the-MOVE solutions and different type of software-defined radios for the mobile segment.</p> |



INTEGRATED C2 CENTRE - WHERE CONTROL MATTERS

Within the Integrated Control Centre, threats are identified and the optimal counter-measure established. C2 modules perform analysis, data fusion and event/incident correlation in order to develop and maintain complete situational awareness. This, in turn, helps to support the appropriate reaction to potential or arising threats on the basis of chain of command procedures.

Physical Security Management System (PSMS)

The Physical Security Management System (PSMS) system for Civil applications has been designed to provide global situational awareness to NOCC/LOCC for alarm management reaction based on our state-of-the-art event correlation engine.

It is able to integrate all BC systems (i.e. short to long perimeter protection, access control and video surveillance systems) and includes a correlation engine, video content analysis and event and workflow management to provide end-users with full situational awareness and enhanced capabilities for in-the-field coordination and reaction.

ANTEO C2

The ANTEO Command and Control system is designed for use by both local surveillance operators and national/regional headquarters. It has dedicated functionalities for the generation of the tactical picture, real-time identification and classification of targets and continuous monitoring of all threats within the border area. In addition, it can be used for mission planning and intervention management.

| OPERATIVE FUNCTIONALITIES | MAIN TASKS |
|---|--|
| <ul style="list-style-type: none"> ▪ Common Operative Picture (COP) (supervisor) ▪ Real-time situation awareness (surveillance) ▪ Mission management and monitoring (reaction) ▪ Resources' localisation ▪ Communication with resources ▪ Resource management (configuration) | <p>Supervisor tasks</p> <ul style="list-style-type: none"> ▪ Check the whole COP ▪ Authenticate alarms ▪ Coordinate logistic and mission activities <p>Surveillance operator tasks</p> <ul style="list-style-type: none"> ▪ Check all sensor alarms in the COP ▪ Check Radar and E/O tracks in the COP ▪ Monitor and control alarm zone with E/O ▪ Monitor and control CCTV video <p>Reaction operator tasks</p> <ul style="list-style-type: none"> ▪ Check the COP ▪ Sensors and vehicles management (UGV/UAS/UAV) ▪ Resources management (communications) <p>Configuration (unmanned) console</p> <ul style="list-style-type: none"> ▪ Check the communications network status ▪ Check the operative status of all sub-systems ▪ Check the health status of all sub-systems |



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