Critical infrastructures Protection and Automation

AVIATEK
energy·aviation·engineering

Providing ICT solutions, systems and services to enable the highest levels of efficiency, reliability, safety and security for infrastructures and transportation systems.
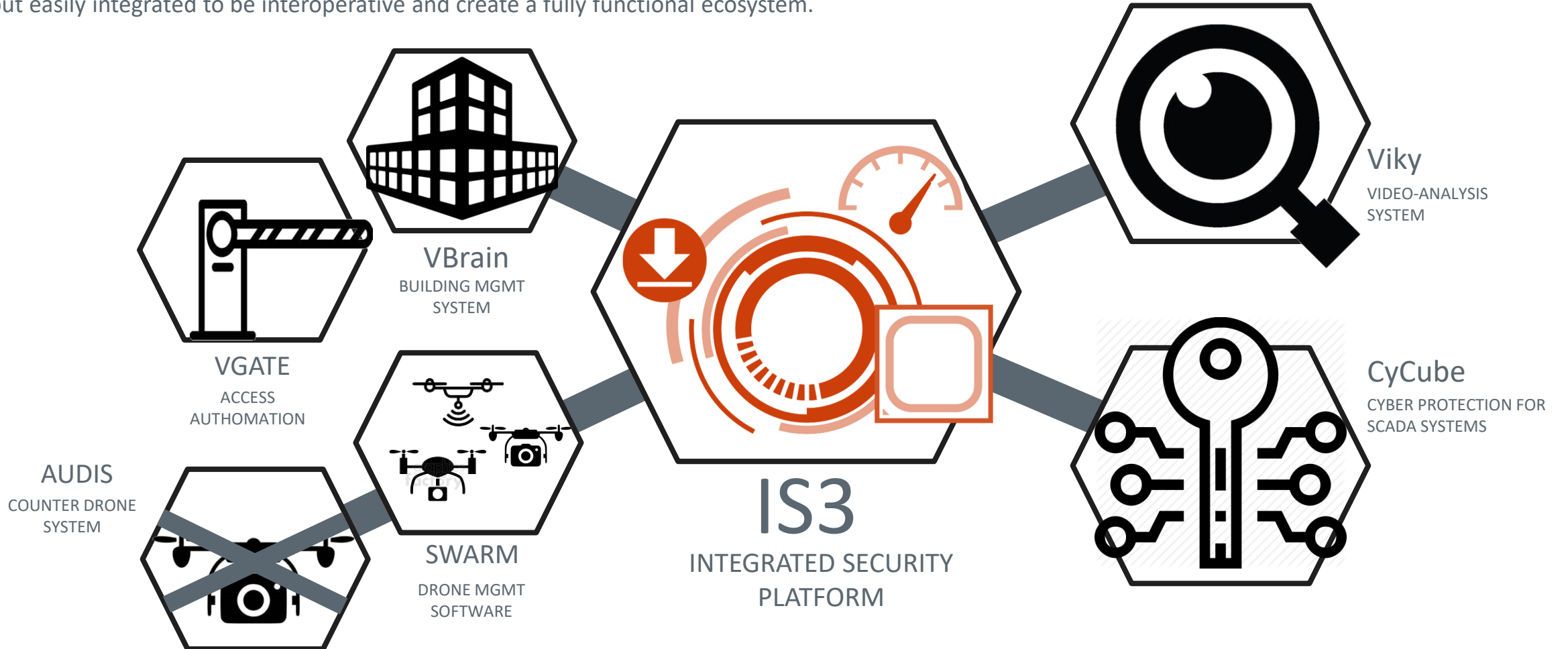
TRANSPORT &
INFRASTRUCTURES

Infrastructure & Automation;

Secure Digital Communication Integrated Systems

New generation multifunctional radar systems

Vessel Traffic Management Systems

Naval and Coastal Sensors & Effectors

Power & Propulsion, Heating, Ventilation, and Air Conditioning (HVAC)
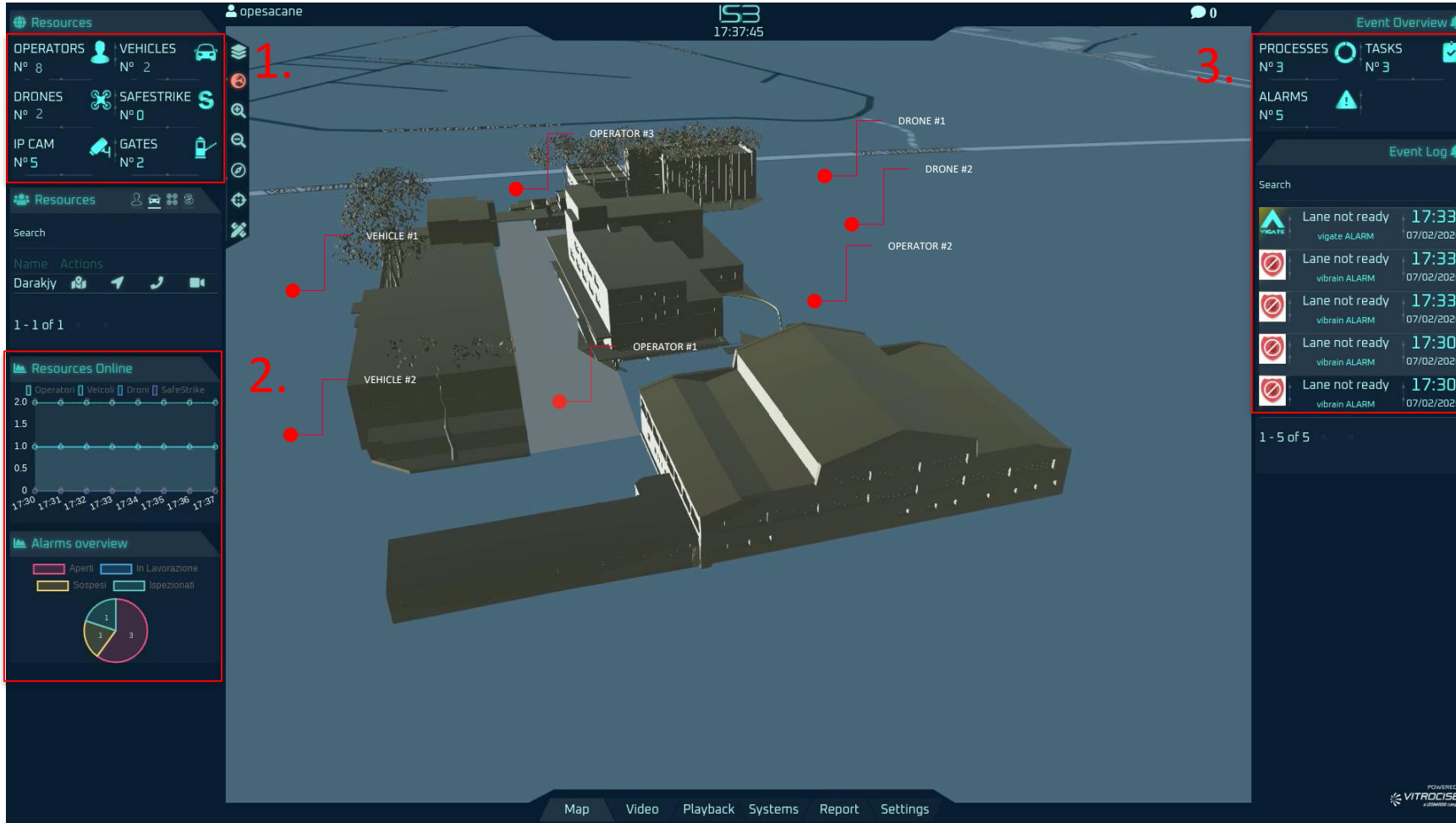
Integrated Security Platform

IS3

Vitrociset solutions for security and MGMT are designed to be fully authonomous and self sufficient, but easily integrated to be interoperative and create a fully functional ecosystem.

VGATE
ACCESS AUTHOMATION

VBrain
BUILDING MGMT SYSTEM

AUDIS
COUNTER DRONE SYSTEM

SWARM
DRONE MGMT SOFTWARE

IS3
INTEGRATED SECURITY PLATFORM

Viky
VIDEO-ANALYSIS SYSTEM

CyCube
CYBER PROTECTION FOR SCADA SYSTEMS

IS3

Integrated Security Platform

1. Active Resources

List of active people/systems and devices available for the activity

2. Resources online

List of people/systems and devices on duty

3. Task MGMT

List of preset tasks the system will perform autmatically with no need for additional intervention.

Solution for Power and Oil&Gas business

POWER

- Data transport/network planning/ migration
- Teleprotection / smart grid applications
- Critical infrastructure protection
- Optical attached cable (OPAC)
- Sub-station design

OIL&GAS

- Onshore and Offshore TLC
- Pipeline monitoring and protection from leackages and sabotage
- Counter UAV
- Oilfield / pipeline communications
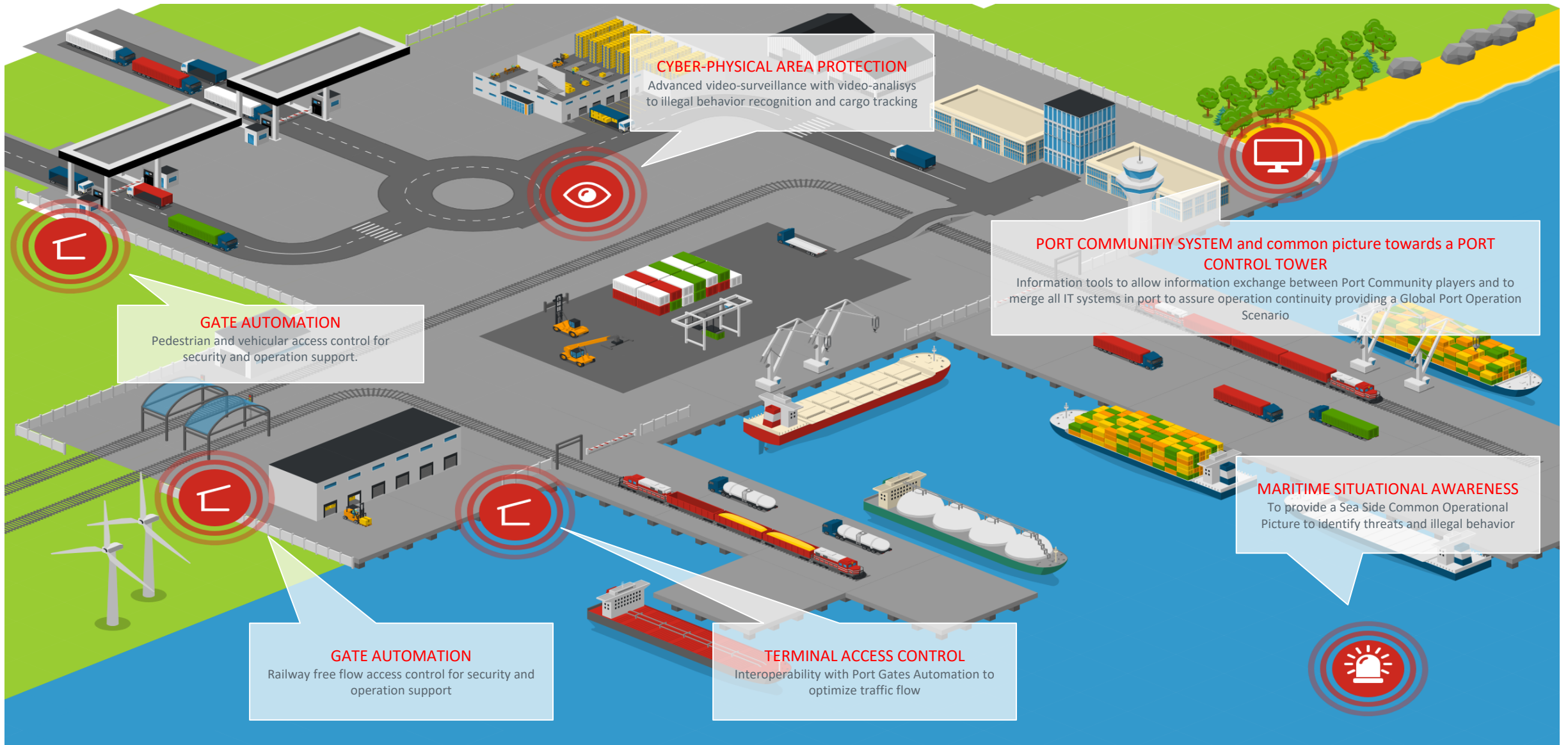- SCADA and telemetry

MINING

- Above and underground TLC
- Personnel and asset tracking
- System telemetry
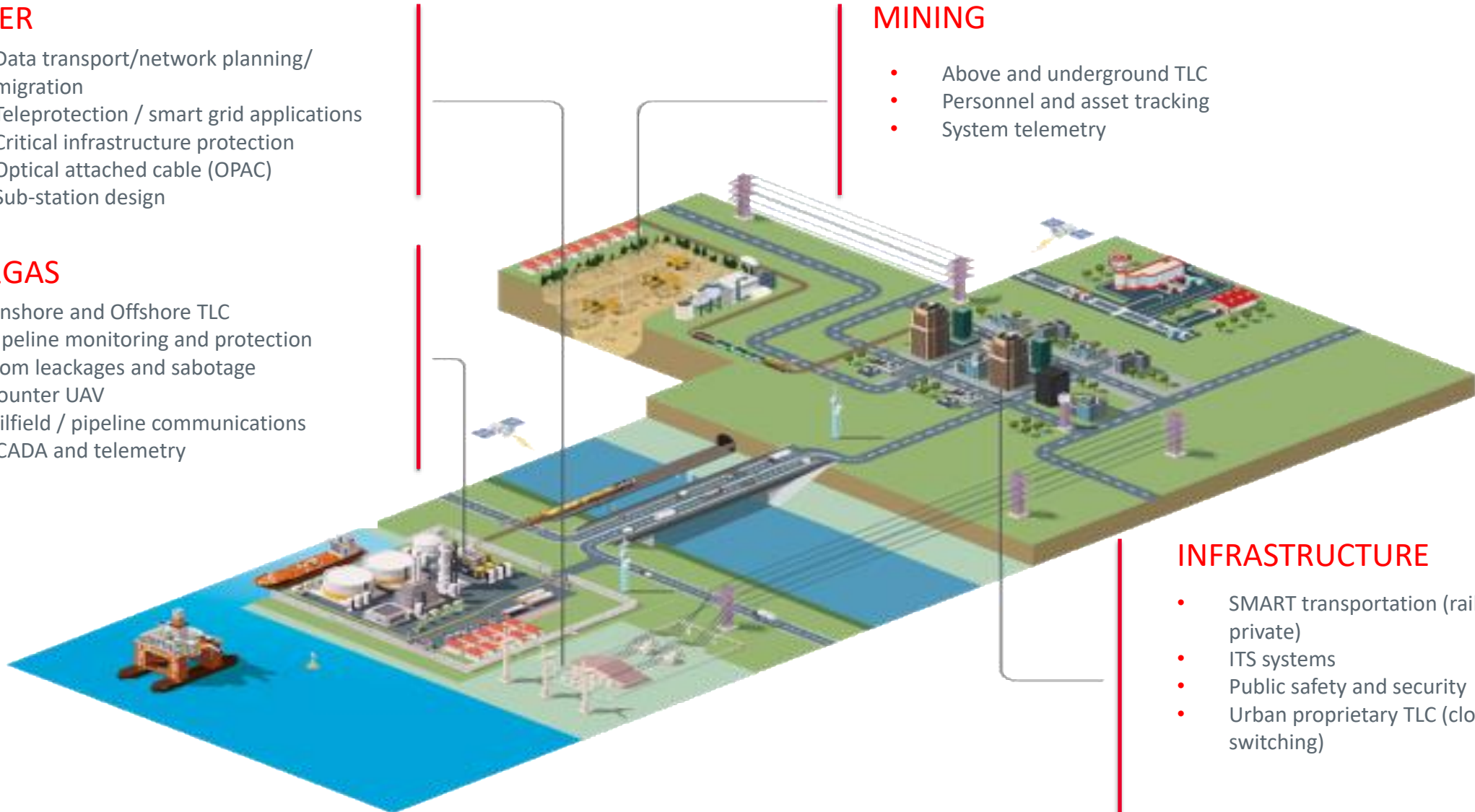
INFRASTRUCTURE

- SMART transportation (rail and road, public and private)
- ITS systems
- Public safety and security
- Urban proprietary TLC (cloud and signal switching)

Solution for Ports

Martime Situational Awareness

Vitrociset maritime surveillance solution is a **flexible and highly reliable** system, providing **real-time surveillance** over the maritime domain. Operationally it provides situational awareness about:

- ABOVE SURFACE SITUATION

- UNDER SURFACE SITUATION

- INFORMATION TRANSMISSION & SECURITY, CYBER DEFENSE

The complete ***Common Operational Picture*** is presented in the Situational Awareness Centre, through an advanced and integrated interface, able to fit into Customer's most specific needs.
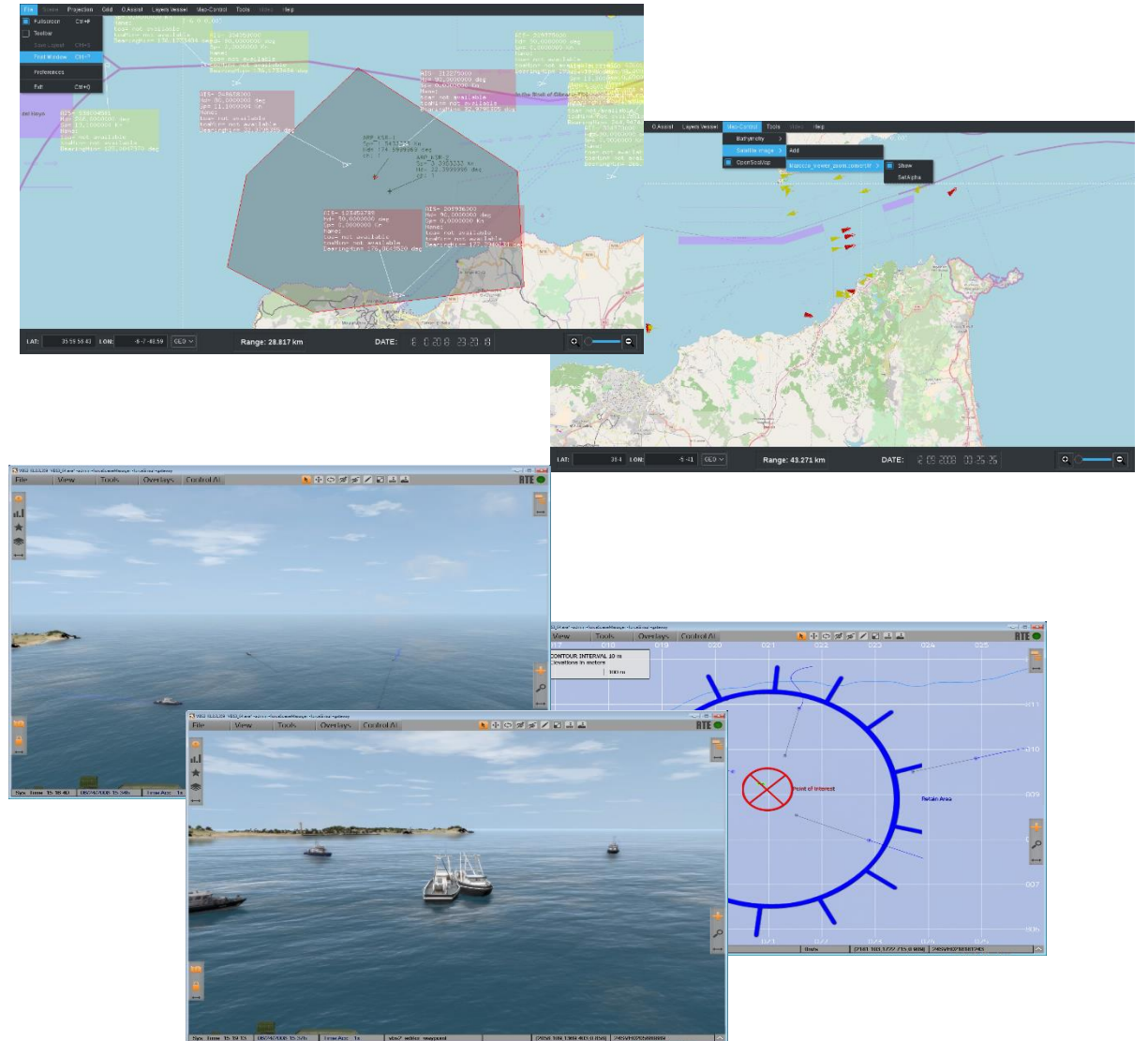
Maritime Situational Awareness
MSA Console

The MSA Console provides to the operators all the tools and functionalities for the real time maritime situational awareness as well as for mission simulation and playback.

The console is able to interface sensors as AIS, radar, sonar, camera, weather stations,… so the operators can send commands and receive data from all connected sensors.

Real-time mode - The operator can visualize real time data coming from all connected sensors and send commands.

Playback mode - The operator can review the selected recorded mission at different speeds (1x,2x,4x,8x), pause/resume the mission, go to a specific mission time. This allows the user to analyze each performed mission.
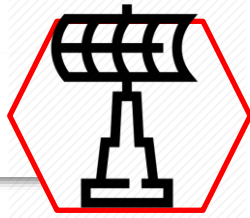
Simulation mode - the operator can visualize prerecorded sensor data streaming to be trained in different situations.

Situational Awareness and maritime SA

System integration for advanced detection

MARITIME SURVEILLANCE RADARS

WAVE HEIGHT AND OIL SPILL DETECTION

ELECTRO-OPTICAL SURVEILLANCE SENSORS

UAV INTEGRATION

AIS
AUTOMATIC IDENTIFICATION SYSTEM

ACCESS CONTROL & INTRUSION DETECTION

DIVER DETECTION SONAR
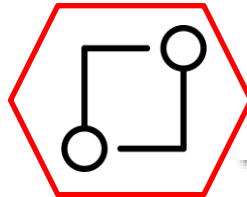
PERIMETER SECURITY & AREA MONITORING

METEOROLOGICAL STATION

LAND SURVEILLANCE

Integrated Security Platform

SUSPECT BEHAVIOUR ANALYSIS

ACCESS CONTROL AND MGMT

OBJECT DETECTION

2D/3D SECURITY MGMT

AC/HEATING SYSTEM MGMT

UAV MONITORING AND SURVEILLANCE

FIRE DETECTION

COUNTER UAV SYSTEMS

ASSET MGMT

SECURED TLC MGMT

FLEET/TASK MGMT
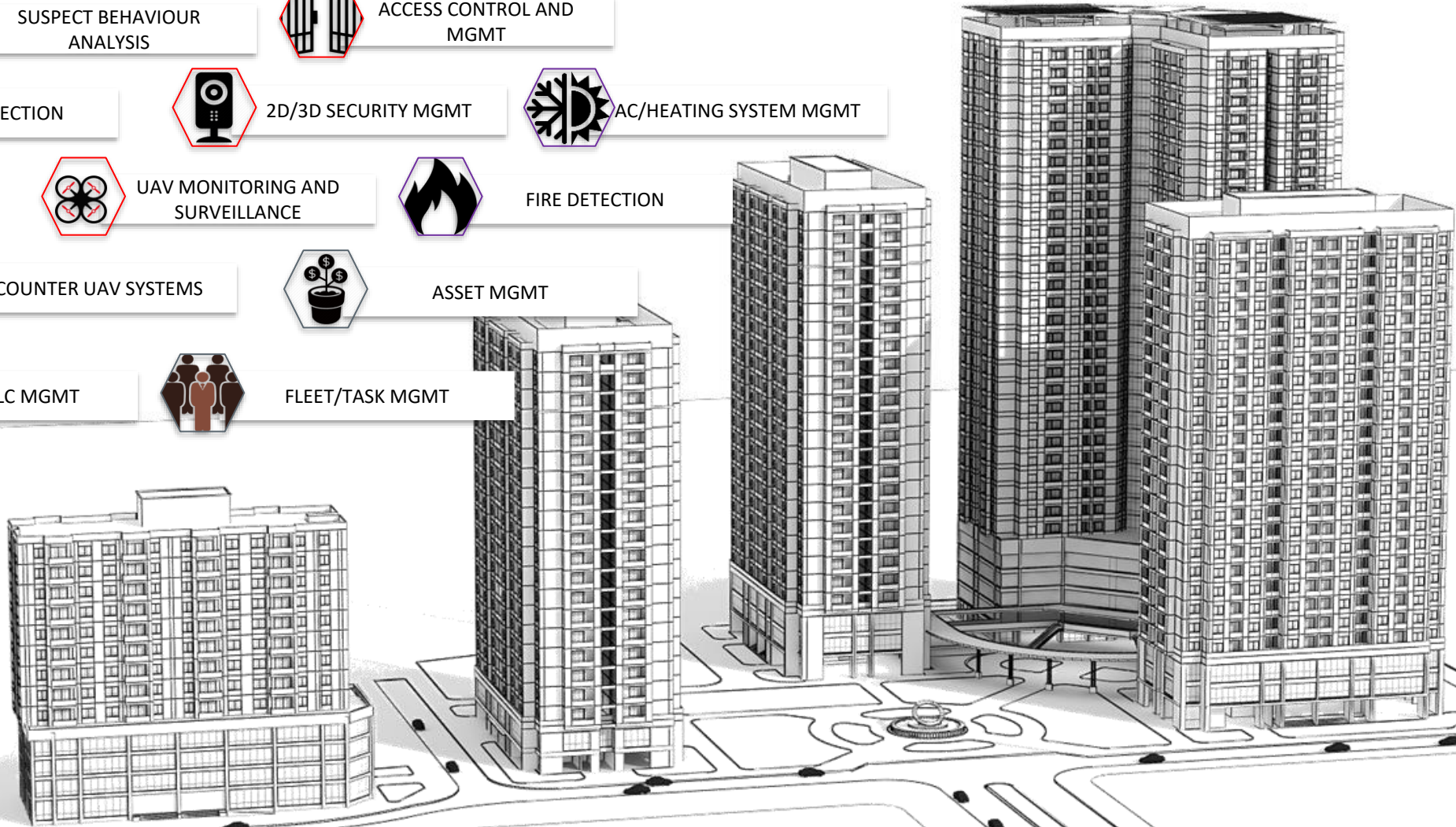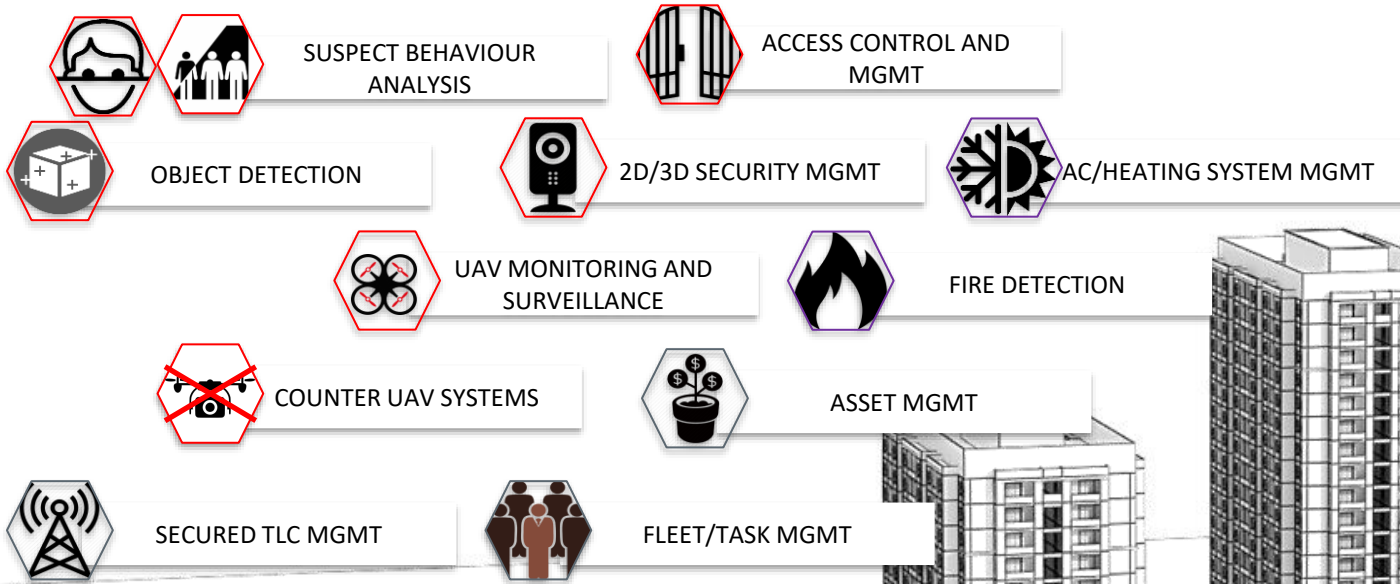
Suite IS3 functional architecture

SUITE IS3

VCS

VMS

HMI

WMS

INTEGRATION LAYER

EXTERNAL DATA SOURCES / THIRD-PART SYSTEMS

| UAVs | WEREABLE DEVICES | THIRD-PART SYSTEMS | ... |

OTHER VTC PRODUCTS

VBRAIN

VIKI

VIGATE

...

Access control system

VIGATE

Access Control System

supports the full operation of gates

Command & control ground station

The Security Access Control System called ViGate Suite, is composed of different types of control and security networks and a dedicated data management software (fully developed by Vitrociset), which allows the scalability of the solution by integrating one or more control ands security network.

Application areas

- *Security and Operation Support in Ports*
- *Security and Operation Support in Construction Site*
- *Security and Operation Support in Airports*
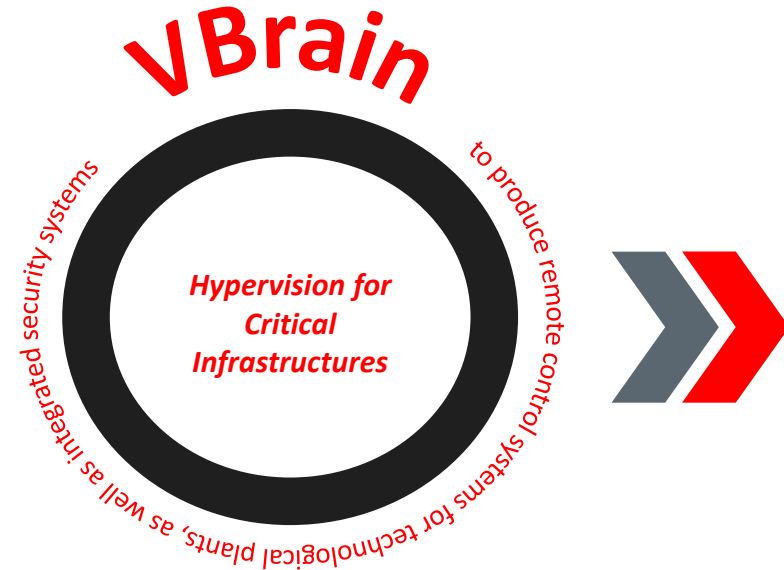- *Security and Operation Support for Major Events*

Key Features

- ❖ Vehicles Access Control
- ❖ People Access Control
- ❖ Railway Access Control
- ❖ Biometric recognition
- ❖ Container Security System
- ❖ Mobile Access Control for temporary gates
- ❖ Integration Networks
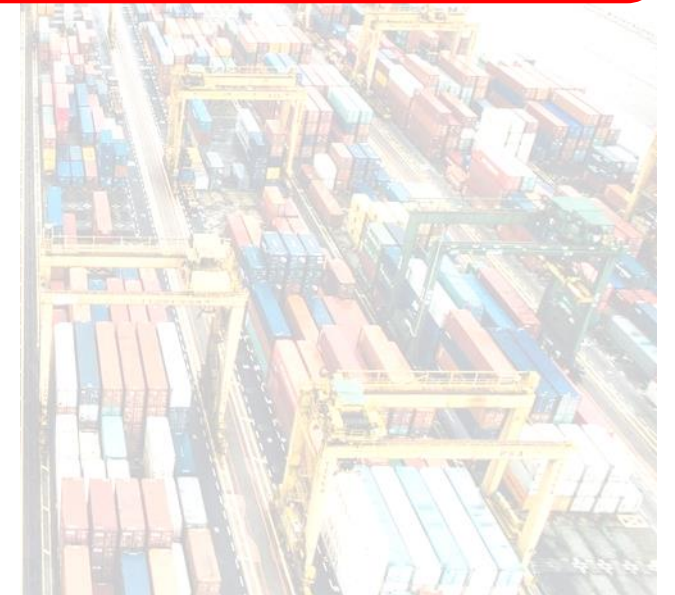
VBrain

Hypervision for Critical Infrastructures

VBrain

to produce remote control systems for technological plants, as well as integrated security systems

Hypervision for Critical Infrastructures

Application

Monitor & control platform for critical infrastructures

Scalable and configurable platform used to produce remote control systems for small, medium-sized and large technological plants, as well as integrated security systems, by implementing standards recognized on an international level both to acquire signals from the plants and for interoperability (given by the specifications of OPC Unified Architecture) with similar systems. Capable of transporting and processing heterogeneous data from third-party sensors, devices, plants and systems, normalizing it so that it can subsequently be viewed on clear, user-friendly interfaces with different levels of detail. In line with the latest developments in software technology and capable of interfacing with a wide range of field objects. It enables users to view values in real time, aggregate information and alarms generated by the system through synoptic charts customized according to the kind of buildings
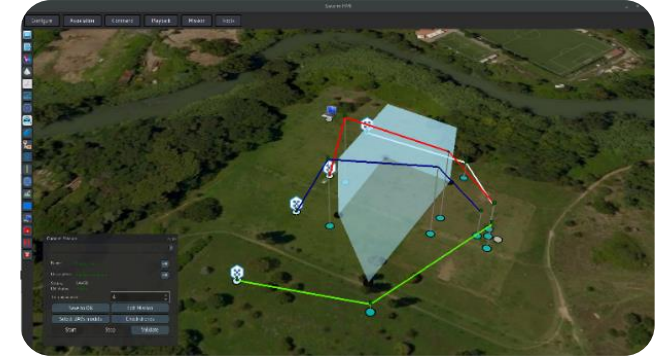
Functions

- *Control of the field equipment with graphical representation of components*

- *Acquisition of data from any kind of equipment*

- *Extremely detailed graphics relating to the switchboards and test instruments*

- *Management of alarms and error signals*

- *Immediate transmission of commands by the supervisor*

- *Integration of the processes and electrical power distribution system*

- *Recording/optimization of power consumption and fault analysis*

SWARM ground station

Command & Control for autonomous UAVs

to manage and plan missions for multi Mini/Micro cheap cooperating autonomous UAVs
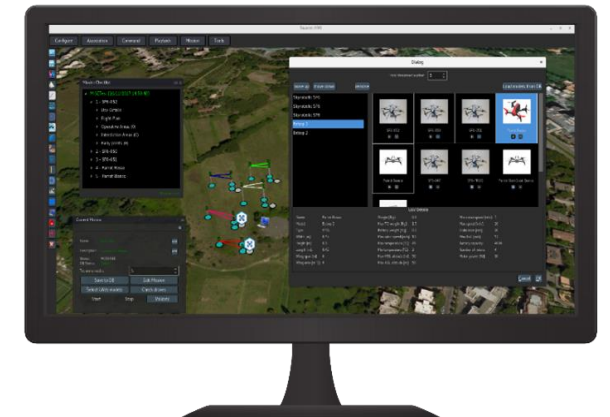
Command & control ground station

Command and Control System (C&C) able to manage and plan missions for multi Mini/Micro cheap cooperating autonomous UAVs[1], minimizing the operational costs and maximizing the probability of success. Based on a core built with a modular architecture, developed with a strong quality process ensuring robustness and reliability. Expandable, scalable, deployable in a fixed multi-console environment or in mobile configuration
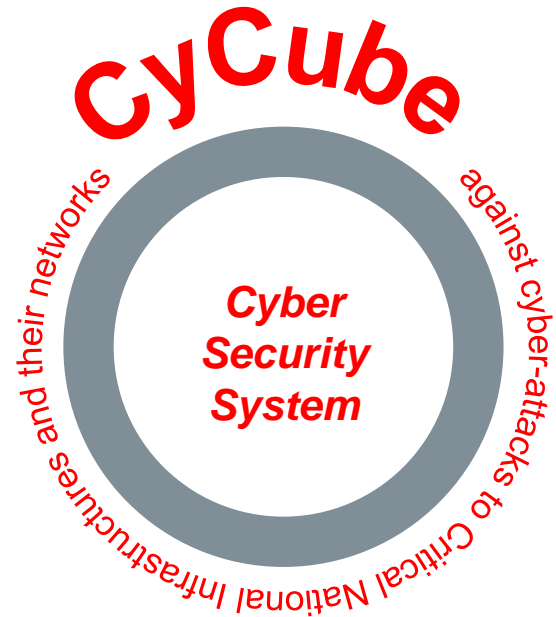
Application areas

- *Aerial Surveillance and Monitoring (Indoor/Outdoor)*

- *Tactical Support for Civil and Military Operations*

- *Search and Rescue Operations*

- *Disaster Response and Relief Operations*

- *Discovery, Identification and Interception of hostile UAVs (Anti-Drone Systems)*

Key Features

- *Low operator workload using Artificial Intelligence (AI)*

- *Air, land and maritime situational awareness*

- *Control of UAVs from different vendors, integration through standard/custom communications protocols*

- *Mission recording and playback*

- *Mission planning, scenario analysis, scenario validation*

- *Human machine interface based on a real-time graphic engine with high performance capabilities and also with heavy pan/zoom operations or huge map loading*

CyCube

Cyber Security System

against cyber-attacks to Critical National Infrastructures and their networks

Users

Companies and Governments

Cyber protection system

Advanced protection system developed by Vitrociset against internal and external cyber-attacks to Critical National Infrastructures and their networks, specifically to counter the attacks from inside the network. Conceived to address the vulnerability affecting Industrial Control Systems (ICS). CyCube microappliance is invisible and transparent to operational networks. All the CyCube micro-appliances deployed within the Organization can be easily controlled, through either an existing or a new management network, without significant changes in the IT infrastructure

Application areas

- *Protection of SCADA (Supervisory Control and Data Acquisition) networks[1], fundamental to preserve critical infrastructures from cyber-attacks*

- *Protection and/or monitoring Servers, LAN and IoT devices*

Common Operating Picture

IS3 provides a complete situational awareness and develop a real-time Common Operating Picture (COP) to avoid human errors by supporting and optimizing decision making with workflows that **dynamically refine processes through machine learning techniques**.

main features

CRITICAL ASSETS REAL TIME POSITIONING (2D/3D geo-localization)

MISSION PLANNING, CONFIGURATION AND PLAYBACK
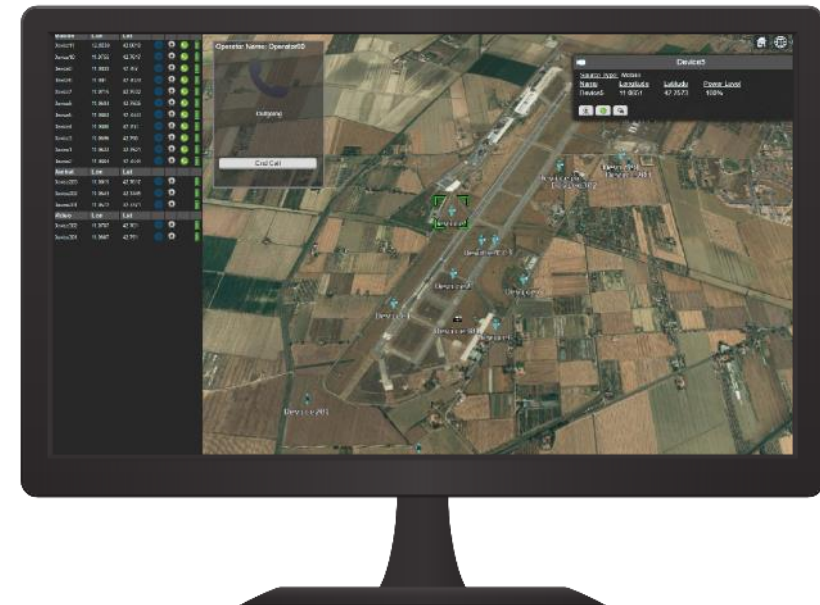
REAL TIME MISSION MONITORING

COMMUNICATION MANAGEMENT (V/UHF, VoIP, LTE, etc.) AND **COLLABORATION**

OPERATOR DEVICES MANAGEMENT (phone, vehicle cam, smart jacket…) AND **OPERATORS TASKS MANAGEMENT**

GEOREFERENCED VIDEO LIVE STREAMING AND **ADVANCED VIDEO-ANALYSIS**

INFORMATION RETRIEVING AND MATCHING

IDENTITY MANAGEMENT AND **MAP MANAGEMENT**

Collaboration and Unified Communication

With an **integrated communications platform and flexible systems framework**, IS3 delivers real time information for effective **operations coordination and support** by using an integration gateway to make interoperable device on LTE (public or private) network, V/UHF Network, Tetra and VoIP.

main features

VOIP CALLS MANAGEMENT
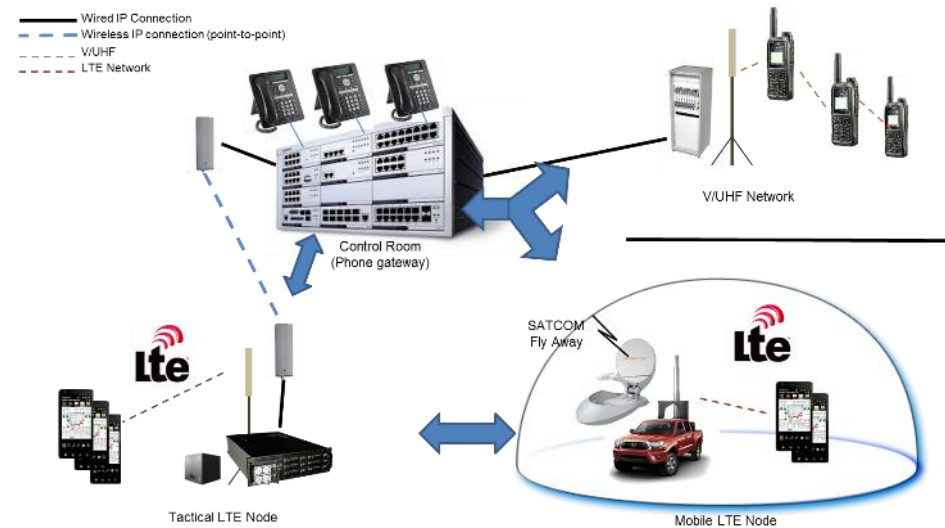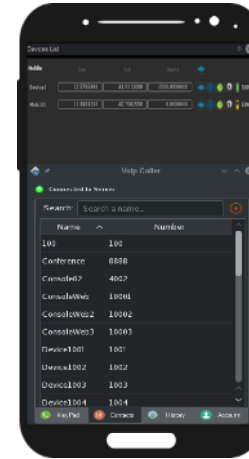
ANALOG RADIO COMMUNICATION

DIGITAL RADIO COMMUNICATION AND MANAGEMENT (DMR)

PRIVATE LTE COMMUNICATION AND INTEGRATION WITH PABX

GROUP CALL AND TEXT MESSAGES MANAGEMENT (INCLUDING ATTACHMENTS)

REAL TIME OPERATOR CONSOLES AND WEB CLIENT AND **MOBILE APP FOR ON-FIELD OPERATORS**

COMMUNICATIONS RECORDING AND PLAYBACK

Integration and interoperability

INTEGRATION VIA WEB SERVICES OF THIRD-PART SYSTEM.

TYPE OF THIRD-PART SYSTEM ENABLED:

- SAP MANAGEMENT SOFTWARE
- TRACKING & TRACING THIRD-PARTIES SOFTWARE
- PORT COMMUNITY SYSTEM (PCS)

LUIS EDGARDO ZAPATA LOPEZ

CEO
+57 300 311 3815
luis.zapata@aviateksas.com

ROBERTO LAMBERTINI

VP | INTERNATIONAL BUSINESS
+507 6850 1162
roberto.lambertini@aviateksas.com

ANTONIO VELASQUEZ

VICE PRESIDENT OF OPERATIONS
+57 314 733 0785
antonio.velasquez@aviateksas.com