

ELECTRO OPTIC COMPONENTS



BEYOND THE SENSES

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EOC PROFILE

Location

Măgurele is a town situated in the south part of Romania, about 15 km southwest of Bucharest, the capital of Romania. Its population is 9,200. The town hosts a nuclear research lab, the Institute of Atomic Physics and its National Institute for Physics and Nuclear Engineering. Between 1957 and 1998, it hosted a nuclear research reactor, now closed down. The Faculty of Physics of the University of Bucharest is also located in Măgurele.



EOC Headquarter

EOC established its headquarter in Magurele since 2008, and is extending its capabilities by almost doubling spaces for research and production starting 2014.

EOC PROFILE

EOC is a part of a group of companies, known generically in ROMANIA as ELECTRO OPTIC, all have the same shareholders, group also includes the following companies:

- Electro Optic Systems Ltd - EOS
- **Electro Optic Systems Management Consulting Ltd - EOSMC**
- Electro Optic (EL-OP) Ltd - ELOP

Team

The shareholders are Romanian citizens, they had worked as researches in Romanian military research institutes, and founded the first business in 1997. The four companies have about 40 employees, mostly engineers and technicians, and up to 15 employees, specialists in science and engineering highly skilled or specialized workers in the field of optoelectronic, collaborating on projects.

Research neighborhood

On February 21, 2008, a new RO-EU research project has started namely "Extreme Light Infrastructure – Nuclear Physics" and its goal is to build and operate the largest laser in the world today. EOC is a member of the scientific cluster for laser development and also customer of research results.

Details on: <http://www.eli-np.ro/#2>

EOC PROFILE

The ELECTRO OPTIC COMPONENTS is specialized in the design, development, manufacturing and testing of optoelectronic systems for various applications :

A. RESEARCH AND DESIGN

- Mechanical, electric, electronic and optic components, parts and assemblies for civil and / or military applications;
- Complex systems for defense and security;
- Complex cable systems for civil and / or military applications.

B. MANUFACTURING

- All mechanical components and parts for internal needs in its own facilities;
- Mechanical and optoelectronic assemblies for civil applications and / or military;
- Complex systems for defense and security;
- Various types of microcontroller boards for automation;
- Complex cable systems for civil and / or military applications;

C. SOFTWARE DEVELOPMENT

- PC and microcontroller software development;
- Software development for complex systems, and also for the integration of complex systems for defense and security;
- Complex software for target tracking and image fusion;

D. PROVIDING SERVICES

- Provision of design, manufacture and testing of components and assemblies to third parties

ELECTRO OPTIC COMPETENCES

RANGE OF PRODUCTS ADDRESSED

R1 Vehicles and containers with complex surveillance and information gathering systems, equipped with optical equipment, radars, anti-drone systems, data processing and storage equipment, communication equipment, energy generating equipment

R2 Equipment for military combat and logistics vehicles:

- remote controlled weapon stations
- laser and radar illumination warning and protection systems
- fire management systems

R3 Containers equipped for interventions in emergency situations and disasters:

- Electricity production and delivery;
- Transport and operation of systems and equipment for extinguishing fires, for interventions in floods or other calamities, communication equipment;
- Transport and operation of systems and equipment with special/military purpose: communications, CBRN, decontamination, EOD, command points, accommodation, meal preparation and serving.

MANUFACTURING and TESTING CAPACITIES

Main **manufacturing** capacities are:

- 5 axis CNC;
- Lathe CNC;
- High capacity air compressor;
- Sandblasting machine;
- Digital Ultrasonic Cleaner;
- Drying and Heating Chamber;
- Various machines for metalworking;
- Various instruments for electrical and electronical manufacturing.

Main **testing** capacities are:

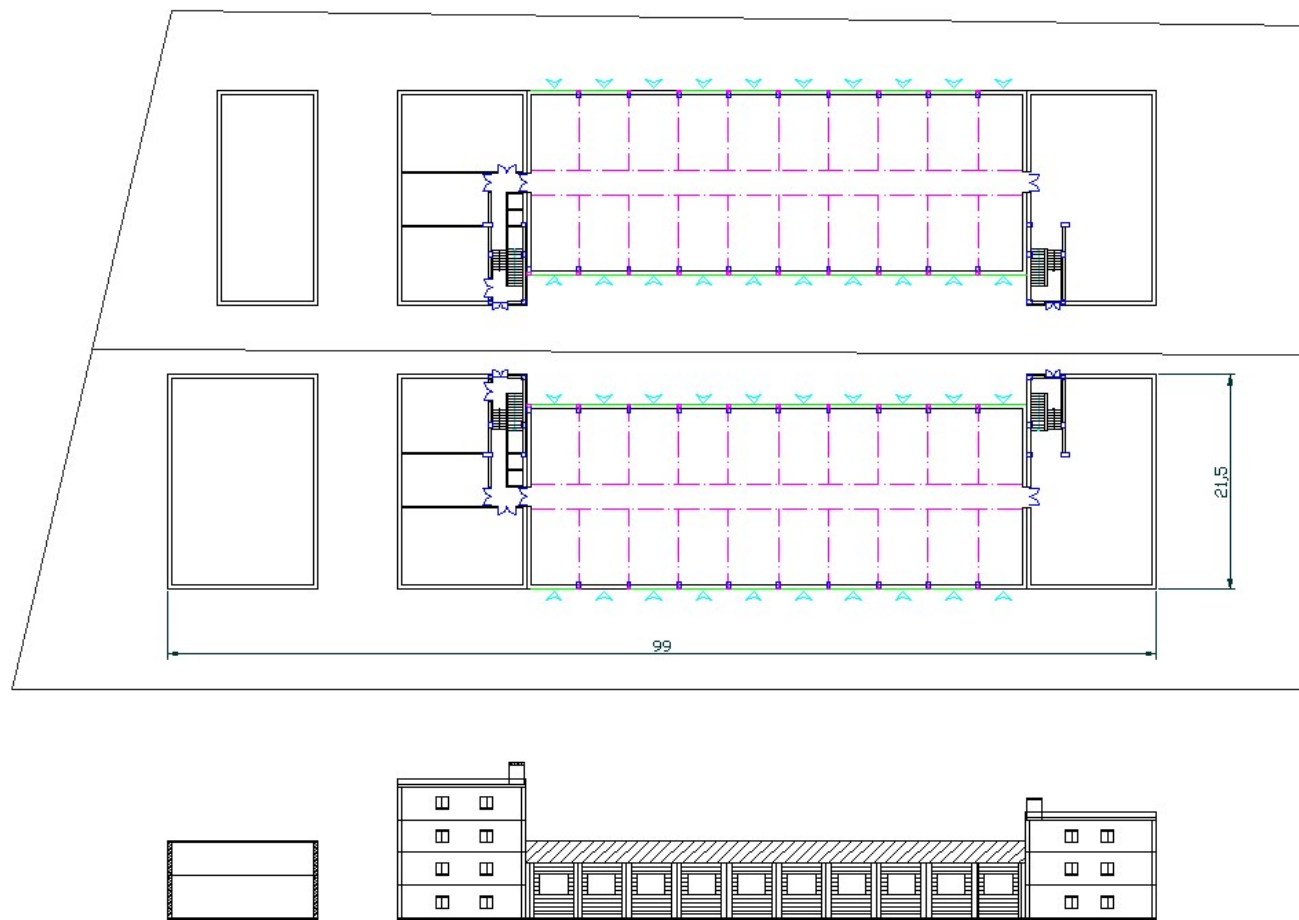
- Optical laboratory;
- Climatic chambers;
- High performance mechanical shocks and vibrations testing machine;
- Hexapod for stabilized system testing;
- Self testing instruments;
- Various testers built to check our own products

QUALITY MANAGEMENT

QUALITY IMPLEMENTED STANDARDS:

- ISO 9001:2008 – Quality Management System;
- ISO 14001-2005 Environment Quality Management System;
- OHSAS 189001:2008 Labor Security Management System
- IPC-A-610 Electronic Assembly Acceptability;
- IPC-A-600 Electronic Boards Acceptability;
- AQAP 2110 NATO Quality Assurance Requirements for Design, Development and Production.

Development Project – NEW PRODUCTION AREA : **MAGURELE II**



Electro Optic Components The Products

PRODUCTS

12.7* and 7.62 REMOTE CONTROLLED WEAPON STATIONS - RCWS AND COMMAND AND CONTROL UNITS FOR RCWS



Integrated sensors:

- Pan & tilt mobile platform (stabilized or non-stabilized);
- Sensors block - contains the day/night cameras, video tracking and image fusion;
 - Cooled Thermal Camera;
 - Day / Night Low Light Level (3L) Camera;
 - Laser Rangefinder.

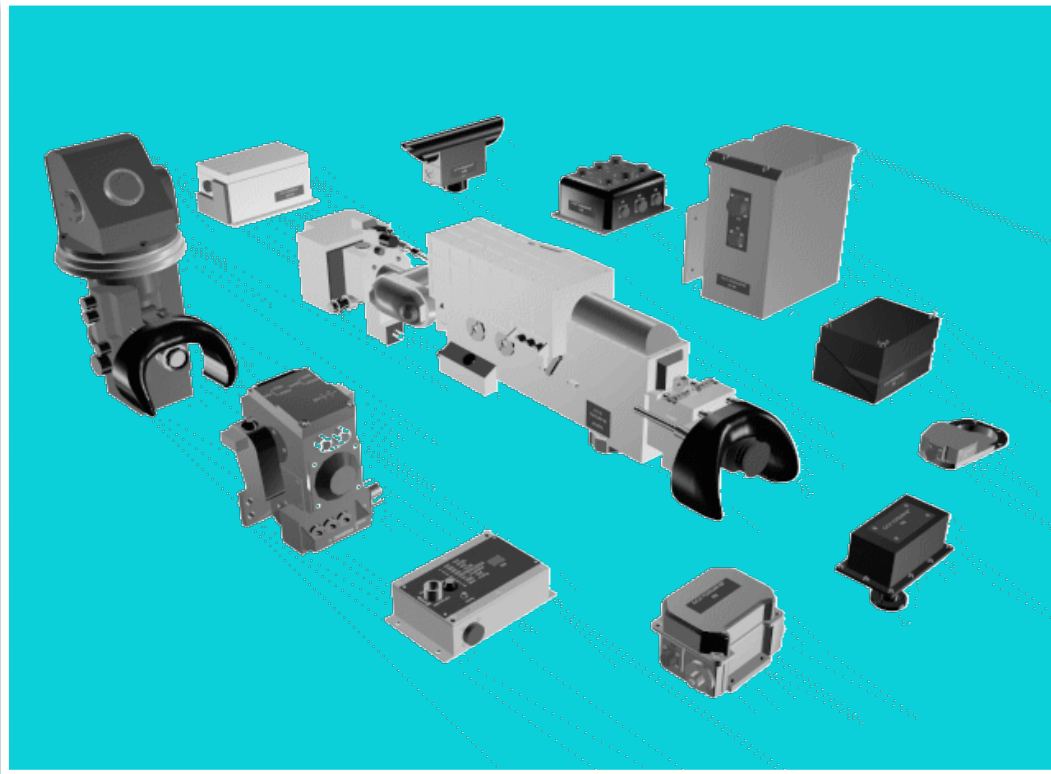
12.7* and 7.62 REMOTE CONTROLLED WEAPON STATIONS - RCWS AND COMMAND AND CONTROL UNITS FOR RCWS



- ❑ Command and control system for the 7.62mm weapon station, delivered and installed on Panhard military vehicles (over 250 systems)
- ❑ 12.7mm remote-controlled weapon station (prototype) in the version equipped with a 12.7mm x 99 machine gun manufactured by U.M. Cugir, installed and tested on the SAUR II amphibious armored personnel carrier, manufactured by U.A. Moreni

PRODUCTS

FIRE CONTROL SYSTEM FOR ROMANIAN MAIN BATTLE TANK TR-85M1 WITH 100MM GUN

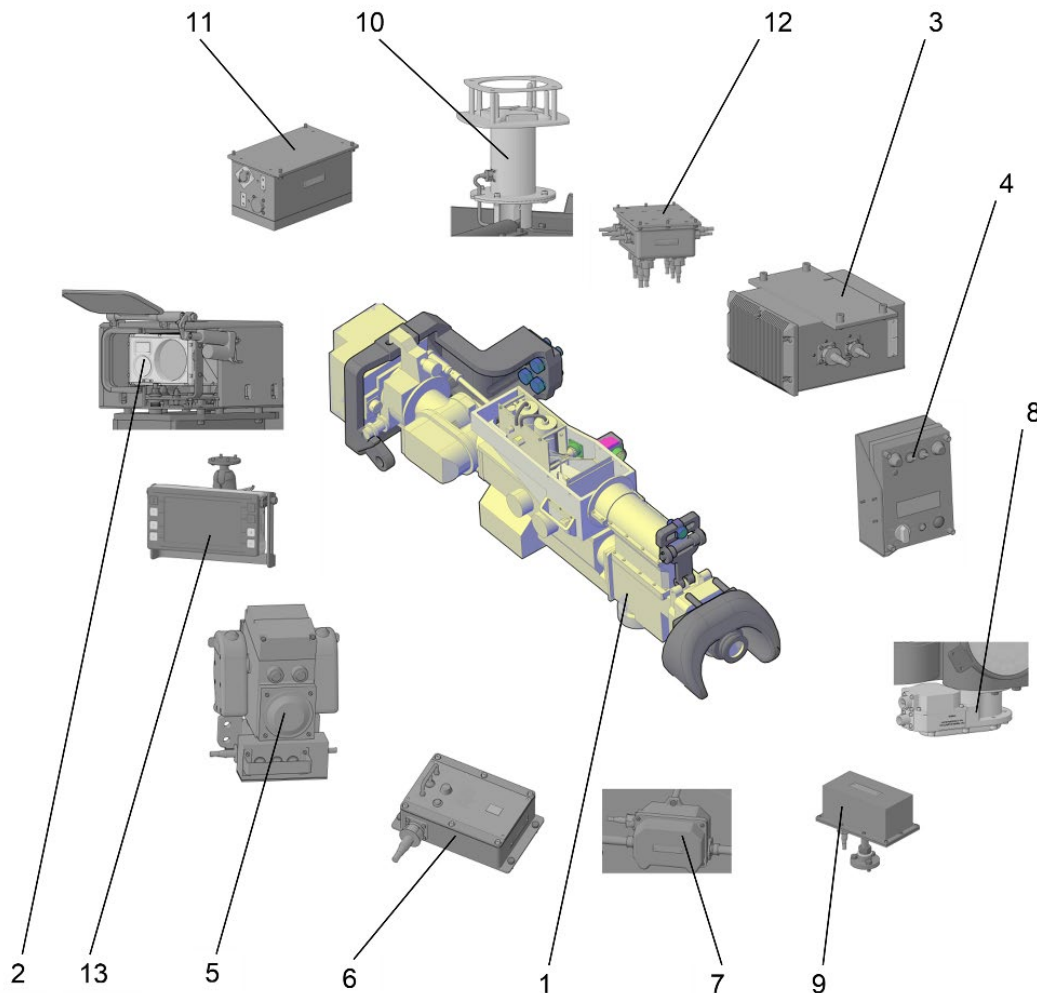


- ❑ A number of 54 Systems were manufactured and installed on Romanian Main Battle Tank

SCF CICLOP-MR(upgrade) FIRE CONTROL SYSTEM FOR ROMANIAN MAIN BATTLE TANK TR-85M1R WITH 100MM GUN

COMPONENTS :

1. Day Optical Sight with Integrated Laser Rangefinder - AOZTL;
2. Thermal camera optical block
3. Ballistic computer
4. System Command and Control Unit – PC
5. Gunner Command Unit – PO
6. Loading Control Unit – PI
7. Speed Sensor – TV
8. Angular Sensor – TU
9. Rolling Sensor –PR
10. Weather Station Sensors Head – CTM
11. Electronic Block of Weather Station - BESM;
12. Distribution Box - CD;
13. Gunner monitor



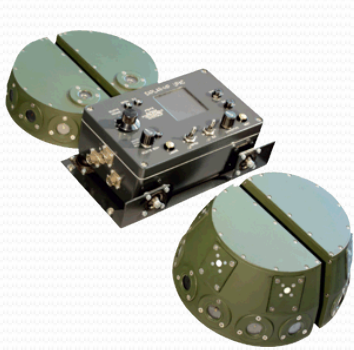
☐ Prototype installed on the Upgraded Main Battle Tank is under testing by the Army

PRODUCTS

LASER AND RADAR WARNING AND PROTECTION SYSTEM

SAPLAR or LASER WARNING AND PROTECTION SYSTEM

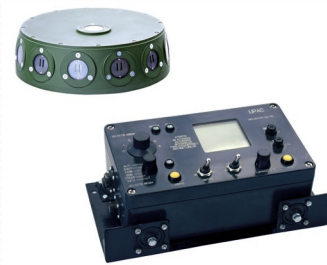
SAPLAS



SAPLAR 4C-22L-6R-12G



SAPLAR 1C-13L-6G



Remote Controlled
Countermeasure
Grenade Launcher

The family of SAPLAR/SAPLAS systems are designed for individual protection of armored vehicles (ICVs, APCs) against armament systems that use laser and radar/or only laser illumination. The systems are designed for 4-8 meters length vehicles

PRODUCTS

LASER AND RADAR WARNING AND PROTECTION SYSTEM SAPLAR or LASER WARNING AND PROTECTION SYSTEM SAPLAS

- ❑ The system, in different variants, is installed on different types of combat vehicles in the Romanian Army: TR 85M1 Bizonul Tank, MLI 84 Jderul Infantry Fighting Vehicle, Piranha III Armored Personnel Carrier
- ❑ The SAPLAR system is in production for installation on the Piranha V Armored Personnel Carrier – ongoing program
- ❑ The SAPLAS VW variant is mounted on the LIPAN BARA 4x4 combat vehicle in the Malaysian Armed Forces

INTEGRATED MOBILE SURVEILLANCE SYSTEM - SIMS -2



SIMS - 2 is designed for:

- Gathering information from different type of sensors: optical, distance measurement, positioning, recognition;
- Processing and integrating obtained information into the GIS application running on a ruggedized PC;
- Transmitting and receiving information to / from other structures;
- Monitoring the response activities and their results.
- Storing the data and images needed to prove the identified activities

INTEGRATED MOBILE SURVEILLANCE SYSTEM



- ❑ The SIMS I prototype was developed under a European-funded project (850,000 euros). The project was completed in very good conditions. The product was later offered to the Romanian Border Police for extensive operational testing.
- ❑ Based on a contract won through an open tender, organized by the Romanian Border Police, 7 SIMS II systems were developed. The contract is in dispute due to the delivery deadlines.

INTEGRATED MOBILE SURVEILLANCE SYSTEM - SIMS



INTEGRATED SENSORS:

- Sensors block - contains the day/night cameras, video tracking and image fusion;
- GPS positioning system and digital compass;
- Laser scanner for close protection;
- Wireless geophone sensors;
- System of recognition of own personnel that operates in the surveillance zone;
- Aerial integrated monitoring system (UAV) – optional

STABILIZED SYSTEM FOR TARGETS ACQUISITION AND RECOGNITION

Integrated sensors:

- Stabilized pan & tilt mobile platform;
- Sensors block - contains the day/night cameras, video tracking and image fusion;
 - Cooled Thermal Camera;
 - Day / Night Low Light Level (3L) Camera;
 - Laser Rangefinder.

COBRA



- ❑ 20 systems were developed, installed and put into operation on the warships of the Danube Flotilla of the Romanian Naval Forces

STABILIZED SYSTEM FOR TARGETS ACQUISITION AND RECOGNITION



- ❑ Product made within a project financed by European funds. The product is delivered and put into operation for the Greek Border Police



STABILIZED SYSTEM FOR TARGETS ACQUISITION AND RECOGNITION

- ❑ Prototype made with European funds and made available to the General Inspectorate for Emergency Situations for testing



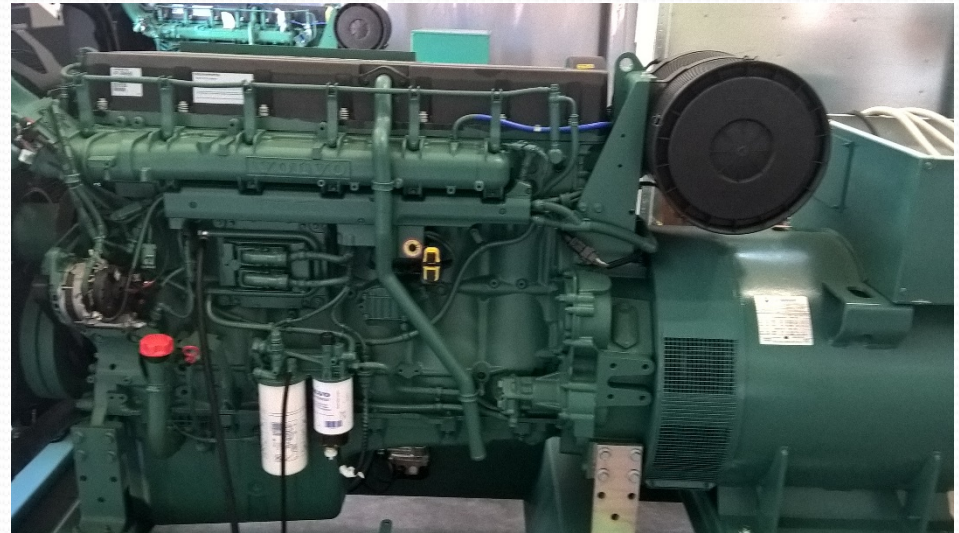
LOGISTIC SUPPORT CONTAINER



Products made for the General Inspectorate for Emergency Situations in two versions:

- With 450 kVA generator (41 systems)
- With 100 kVA generator, in soundproof version (14 systems)

LOGISTIC SUPPORT CONTAINER





LOGISTIC SUPPORT CONTAINER

LOGISTIC SUPPORT CONTAINER

PRODUCTS

SURVEILLANCE SYSTEM FOR HIGHWAY COMPANIES (CIVIL APPLICATIONS)



Integrated sensors:

- Stabilized pan & tilt mobile platform;
- Sensors block - contains the day/night cameras, video tracking and integration software;
 - Un-cooled Thermal Camera;
 - Day / Night Low Light Level (3L) Camera;
- Command & control unit with joystick;
- Ruggedized PC;
- Video server.

- ❑ System developed and installed on intervention vehicles intended for CNAIR (14 systems)

PRODUCTS

EOC's PRODUCTS USED IN COMPLEX SYSTEMS



**OPTICAL
SENSORS SYSTEM BS-01**



**LASER RANGEFINDER
TL1.54**



**COMMAND AND CONTROL SYSTEMS
AND RUGGEDISED MONITORS**



**OPTICAL
SENSORS SYSTEM**



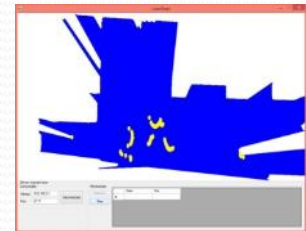
GEOGRAPHICAL



RUGGEDIZED COMPUTER



SECURITY LASER SCANNER



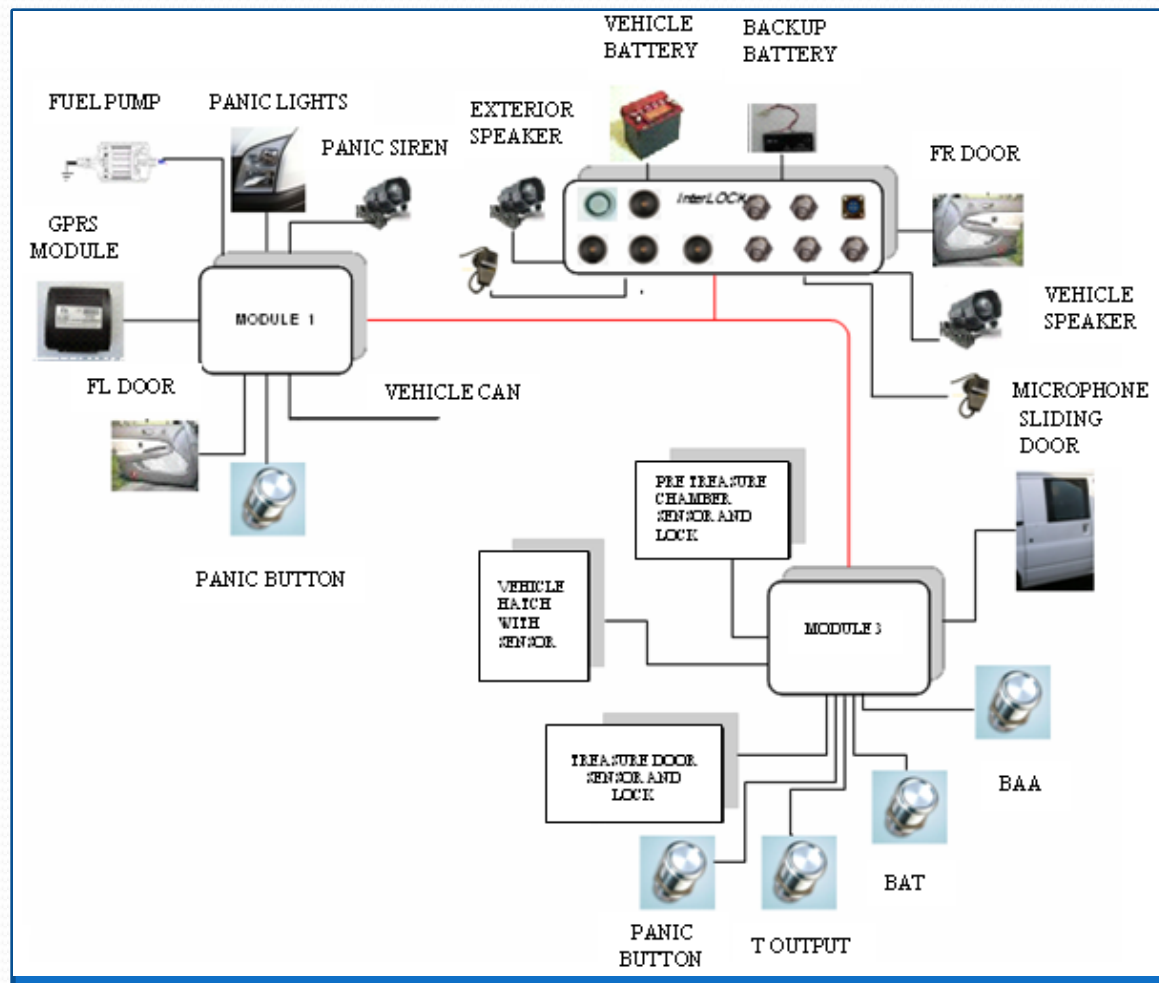
**GEOPHONIC
INTRUSION DETECTION
SYSTEM**



**RECOGNITION SYSTEM OF
THE AUTHORIZED
ACTIVITIES**

InterLOCK SYSTEM for VALUES TRANSPORT VEHICLES

InterLOCK monitoring and conditioning system is designed for armored vehicles for transportation of values



The main functions of the InterLOCK system are:

- continuous monitoring of the vehicle access areas;
- conditioned control of the vehicle doors;
- doors blocking in case of not respecting conditioning protocols;
- dual access control of the treasury area;
- vehicle monitoring using a GPS/SPRS module;

PRODUCTS MILITARY CABLES AND HARNESSES



SERVICES DESIGN & MANUFACTURE OF MECHANICAL PARTS



SERVICES ELECTRONIC BOARD DESIGN, MANUFACTURING, TESTING

