Homeland Security & Critical Infrastructures

VIDEO SURVEILLANCE

The security of sensitive areas (government offices, industrial sites, military zones, prisons, stadiums, banks, critical urban areas, ports, airports, railway stations, metro stations) is vital to safeguard personal safety and protect environments, systems, information and data inside these areas. Recent history teaches us that electronic protection systems aren't only a precautionary measure, but an effective tool for preventing and deterring criminal acts.

From consulting with a view to scenario and risk assessment, to the identification of the technologies and devices best suited to satisfying requirements for specific projects: Selex ES proposes a comprehensive physical security offering designed to cover all potential needs.

The integration of logical and physical security, the selection of control and management systems and the assessment of security levels are the key features of our approach to building solutions.

A product of extensive analysis and painstaking design, this physical security vision is consistent with the approach Selex ES adopts for its own services and products, providing customers with all the experience and knowledge it has accumulated to develop tailormade solutions that deliver high added value, and regarding the selection and supply of technology as just one stage in a more complex process.

In this context, S3I and 360 Super Vision represent two of the most innovative video surveillance systems we have yet developed to respond to increasingly demanding security requirements.

S3I SYSTEM

S3I Integrated Security Systems and Solutions represent the Selex ES response to the implementation and management of highly integrated and geographically distributed video surveillance and alarm systems.

Based on client/server architectures, comprising hardware and software subsystems in which digitalised images, alarms and operator commands are transmitted over an IP network, S3I is a highly scalable system, without topological limitations, that can adapt to diverse operating scenarios (video surveillance for public areas, building and district security, public order, traffic control, etc.).

Solutions provide operators with sophisticated scene analysis algorithms to detect events automatically and in real time, including the movements of people and objects, congestion/crowding, abandoned or removed objects, behaviour analysis, acts of vandalism, etc.

FUNCTIONAL AND OPERATING FEATURES

A simple, intuitive interface is used to managed the following functions from a single location:

- Monitoring: a work station with one or more monitors allows operators to open several windows and monitor different areas concurrently, to control the position and functions of PTZ (pan/tilt/zoom) cameras and to identify critical situations arising in areas under surveillance rapidly.
- Investigation: the application makes it possible to consult recordings for investigative purposes, based on either detected events or free searches.
- Analytics: real time scene analysis means the system can automatically detect events and situations that represent a potential threat or illegal act. Intelligent sensors and algorithms are used to implement extremely advanced functions such as 3D tracking of people and objects, behaviour analysis, noncooperative face detection and license plate reading

360 SUPER VISION

360 Super Vision is an innovative video surveillance system developed on a joint basis by Selex ES and DIBE - the Genoa University Department of Biophysical and Electronic Engineering. Combining special optical capture systems with sophisticated analysis algorithms, 360 SV has applications in a very broad range of operating scenarios. 360 degree panoramic vision is delivered by a new concept fixed sensor that can be fitted with either catadioptric or fish eye lenses offering fields of view of up to 180 degrees.

The scene analysis algorithms, designed to guarantee adequate functionality even in outdoor environments with reflections and rapid changes of brightness, process the panoramic image directly, detecting moving objects in selected areas at excellent levels of reliability and with a low false alarm rate.

The images are processed in real time to detect one or more areas for more detailed attention, to track interesting blobs and to assess their trajectory across the image. 360 SV can also be configured to work in tandem with one or more PTZ cameras, driving them automatically to track a specific object at high resolution as it passes through the area of interest, extract details from the scene and train the PTZ camera permanently on areas of activity.

BENEFITS AND APPLICATIONS

- Comprehensive scene coverage with just one video camera (to obtain a similar field of view using traditional systems, at least 3 or 4 fixed position cameras would be required), so reducing installation and maintenance costs, the amount of disk space needed to file images, and surveillance frequency
- Virtual camera training for filed images
- Very short installation and configuration times

The possible applications for this technology range from the monitoring of indoor environments (museums, railway stations, warehouses, shopping centres, schools) and outdoor areas (car parks, ports, service stations), to controlling road traffic (crossroads, town squares, motorway junctions) and sensitive military sites, right through to virtual reality applications. Some of the most significant Selex ES physical security technology references are the Salerno - Reggio Calabria motorway video surveillance system, the TOROC 2006 project and the video surveillance system for the Gioia Tauro area.

SALERNO - REGGIO CALABRIA MOTORWAY VIDEO SURVEILLANCE SYSTEM

The Salerno-Reggio Calabria motorway video surveillance system pools the know-how accumulated by Selex ES with the technical and operating experience held by the local police forces. The system entered service at the start of 2000, monitoring 23 service areas along this section of motorway. The system's sensor platform includes licence plate reading stations at the entrance and exit to the service stations.

TOROC 06 PROJECT

For the 26th Winter Olympic Games held in Turin in 2006, Selex ES designed and implemented the integrated security system for 21 Olympic sites scattered across Piedmont. The project involved the installation of 700 video cameras, 100 km of optical fibre and 50 km of power cable. Training courses were also organised for operators and, during competition events, constant technical assistance was provided by onsite personnel.

VIDEO SURVEILLANCE SYSTEM FOR THE GIOIA TAURO AREA

In 2006 Selex ES played a leading role in the development of the integrated territorial security and law enforcement system for the province of Reggio Calabria, and specifically for the municipalities of Rosarno, Gioia Tauro and San Ferdinando.

Comprising sensors, video cameras and alarm relay systems, the solution manages all aspects of security in urban, industrial and sensitive areas. The wired and wireless interconnection network transmits the data and images captured by a system of peripheral devices to an operations room which represents the nerve centre of the entire system.

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