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LEONARDO CYBER & SECURITY SOLUTIONS

# MAJOR EVENTS AND STADIA SOLUTIONS



Leonardo is a global high-tech player operating in the Aerospace, Defence and Security sectors. With 47,000 employees (over 10,000 in UK), Leonardo has a significant industrial presence in over 150 countries. We are a leader in safety and security and we provide tailored solutions for Government, Law Enforcement, Critical Infrastructures, Safe Cities, Transportation and Logistics. Leveraging the synergies that exist throughout information technology, secure communications networks, command & control systems, physical and logical security, Leonardo has provided security solutions for several major events.

Projects include:

- 2021-Winter sky championships in Cortina (Italy)
- 2018 Gold Coast Commonwealth Games, Gold Coast, Queensland(Australia)
- 2015-World exhibition EXPO 2015 in Milan (Italy)
- 2014-XXII Olympic Winter Games, Sochi (Russia)
- 2014-XX Commonwealth Games, Glasgow (UK)
- 2012-Olympic Games, London (UK)
- 2009-G8 Summit in L'Aquila (Italy)
- 2006-XX Olympic Winter Games, Turin (Italy)

Leonardo operates as prime contractor and system integrator with long lasting and wide-ranging expertise delivering turn-key technology solutions through an innovative service-oriented approach. This results in tailored technological solutions encompassing both proprietary and third-party products.

The Integration Platform is the pillar of our technological solutions for stadia and Major Events. It is an adaptable framework that combines information integrating systems, adds intelligence with specialized modules and provides improved situational awareness to managers of complex infrastructures.

## BENEFITS

- Enhanced situational awareness for optimal and rapid decision process.
- Single center of operations for an efficient management of ordinary and extraordinary situations.
- Extended integration and collaboration among Events Organizers, Clubs, Public Authorities, Law Enforcement and Emergency Services to prevent and mitigate critical situations.
- Cutting edge technical platform to increase effectiveness of security operators and event management.

Physical Security involves the use of multiple layers of interdependent systems designed to deny unauthorized access to facilities, equipment and resources and to protect visitors, personnel, and property from damage or harm.

BMS (Building Management Systems) can provide supervision and management capabilities for technical infrastructures.

### Physical security solutions

Surveillance and Analytics	Leonardo provides systems to manage and control different real-time video technologies. Each video stream can be instantly replayed and recorded for later investigation purposes <b>Advanced AI-based</b> tools enable the analysis of video and audio streams for enhanced detection of dangerous or abnormal situations. Video surveillance and analysis systems are also integrated in company <b>PSIM SC-2</b> and in the coordination and control <b>platform X-2030</b> .
Unmanned aerial systems	The ability to monitor an area from the sky makes <b>UAS</b> a valuable tool for intelligence gathering and event control. Leonardo deploys small drones to be used in tactical situations and short time missions and that are integrated with supervision platforms.
ANPR	Leonardo's <b>Automatic Number Plate Reader (ANPR)</b> system supports the management and regulation of vehicles through automatic entry gates into access-restricted zones. Our analytics solutions can be also applied to standard cameras (ANPR SW based).
Access control	We can provide both active and passive instruments to control and regulate the access of spectators and staff members.
Intrusion detection	Perimeter protection solutions are based on third-party multi-technology products (microwave barriers, infrared sensors, fencing, taut wires, micro-phonic cables, anti-intrusion) closely integrated with our video surveillance management system and the Integrated Safety and Security Control Center.
Smoke and fire detection	Heterogeneous technology sensors and subsystems deployed along all building and structure composing the facility that work in coordination with the control center.
Public address and evacuation	Verbal messages, including normal and emergency evacuation announcements, can be given to visitors, staff and security operators via a <b>Public Address System</b> .



Major Events are increasingly reliant on digital systems and technology. Cyber-attacks that affect the confidentiality, integrity or availability of these systems can have a disruptive impact, resulting in both financial and reputational damage.

Leonardo provides a portfolio of services and solutions to identify, prevent, detect and respond to cyber-attacks that could affect our customers, offering a holistic approach to Cyber Security according to the NIST framework.

Cyber Security	
Cyber resilience & Consulting services	Leonardo consulting services are focused on supporting organizations in: governance management, definition of procedures, compliance with standards and regulations, penetration tests and risks management, vulnerability analysis, assets management.
Design and build services	Design & Build services are based on a proprietary approach and an established process for designing and building security management infrastructures (SOC, CERT, IOC).
Managed Security Services	Our Security Operation Centers (SOCs) provide a flexible and comprehensive set of management and monitoring services that can be quickly tailored around an organizations' specific needs.
Cyber Security Platforms	<p>Leonardo services (as well as Leonardo projects) take advantage of in house designed platforms helping CNIs' security operators in their tasks:</p> <ul style="list-style-type: none"> <li>• <b>Cyber information superiority suite</b> composed by a combination of platforms providing threat intelligence, end point protection and malware analysis is based upon Information Superiority concepts applied to the cyber domain to obtain valuable and actionable information, which can be used to rapidly implement targeted defence and containment actions.</li> <li>• <b>Cyber Situational Awareness system</b> is a complete ecosystem specifically designed to keep CNIs' security teams and executive profiles informed of what is happening in terms of Cyber security supporting decision making and security investigation processes.</li> </ul>

## CYBER TRAINING

Cyber threats are constantly evolving and becoming increasingly pervasive and sophisticated; this is determining the need of a diffused awareness on cyber security among end user population and the necessity of constant training and exercise for cyber security specialists. This is particularly true for the Major Event sector because of the wide diffusion of ICT technologies in its vital processes and operations.

Leonardo can support his Customers with both a cyber-training offer and platforms leveraging innovative technologies and learning methodologies.

Cyber Training	
Cyber & Security Academy	An innovative facility built to promote cyber security awareness and to increase cyber and security competencies. It offers a complete training portfolio delivered by expert trainers leveraging advanced platforms for hands on exercises.
Cyber Trainer	Cloud-based platform to train and keep up to date both security professionals and non-expert users, managing the whole training process (training needs, formal learning, exercises, certification).
Cyber Range	Integrated environment for immersive and realistic simulations of cyber attack/defense scenarios and advanced simulation operation to test cyber resilience of system and infrastructures.

Communication infrastructure is critical for major event sector both to connect all the event's systems, infrastructures and equipments, and to ensure its optimal security and management. Leonardo Professional Communications solutions are aimed at supporting public safety, emergency services, civil protection agencies and security organizations in communicating in normal and critical situations.

Leonardo develops turnkey multi technology network solutions that integrate a range of wired and wireless communication technologies (TETRA, DMR and wireless broadband radios such as LTE and 5G) and guarantee transparent user connectivity in all circumstances, for safe and efficient operations.

Typically, we deliver such solutions to first responders, fire brigades, police forces and all user communities who need to communicate during mission critical operations where life matters.

Complete communications packages are available to EPC event facility constructors and End Customers, addressing:

- Transport networks (both wired and wireless)
- Access to wired (LAN) and wireless networks
- PAGA/PABX
- Clock distribution
- Operational communications.

## Critical Communications

LTE/5G	<b>LTE infrastructures</b> support data intensive applications. Leonardo has a system integration approach providing third party infrastructure to supply extensive coverage, integration of commercial networks, hot spots (with tactical system or network-in-a-box configuration).
TETRA	<b>Adaptanet®</b> is a complete modular, scalable and flexible family of <b>TETRA products</b> , satisfying requirements ranging from single-site to national networks. The system supports technology enhancements with full IP communications, and is complemented by terminals dispatching solutions and service applications.
DMR	<b>ECOS DMR</b> solutions are characterized by a high degree of scalability and flexibility that allows most suitable configuration for Customer's requirements. The same radio base station can operate in <b>DMR Tier II</b> , with simulcast option and dynamic <b>analogue FM</b> , or <b>DMR Tier III</b> in simulcast or cellular configuration.
Network Integration	The <b>CSP (Communications Service Platform)</b> enables the integration of multi-technology networks with unified users and application management and it is at the heart of <b>Leonardo RIM (Italian acronym for Hybrid multi radio vector network)</b> supporting the progressive evolution from narrowband to broadband professional communications networks. CSP implement the LMR portion of <b>3GPP standard LMR –IWF</b> (Interworking Function) allowing the integration of <b>3GPP MCX</b> applications.
Push-To-Talk over cellular	<b>Push-to-talk over cellular</b> is the way to provide professional services over broadband networks. Leonardo <b>CSP MCX platform</b> is a complete solution fully compliant with 3GPP standards enabling mission critical communications over <b>LTE and 5G</b> . Designed to take advantage of broadband mission critical enhancement, MCX can also be deployed as an OTT (Over –the-top) application on an existing commercial network and provides an fully featured android client and a web based dispatcher.



To ensure safety, security and sustainability on big events it is essential to have full control and monitoring of their cyber-physical infrastructure. In this context Leonardo solutions provide support for infrastructure management as well as energy monitoring. By combining process, system integration and project management capabilities with proven experience in designing hardware and software applications, we are one of the main industrial companies able to manage the entire life cycle of automation and process control systems, from consulting and needs analysis with the customer to service levels and personalized aftersales assistance.

## Energy management automation and process control

### Energy Efficiency

Leveraging on modelling and simulation techniques and Big Data, Analytics and IoT technologies, Leonardo's energy efficiency solution is a platform addressing the management of energetic monitoring and data analysis to supply decision support facilities for energy efficiency and saving.

### SCADA

Leonardo has developed a scalable and configurable SCADA solution enabling real time monitoring and remote control of cyber-physical plants. It implements international standards to acquire data and it follows the OPC UA standard to ensure interoperability.



A single operational centre provides efficient management of all situations. It improves situational awareness through data acquisition and correlation as well as the integration of heterogeneous systems. In addition, thanks to models and decision support tools, it fully supports the operators activities during both ordinary and emergency situations.

Taking advantage of the integration of in-house developed systems with “best-of-breed” technologies, our Integrated Control Center has been designed specifically to address high grade requirements of security and safety in major events management. It enhances situational awareness and improves the ability to prevent and manage security and safety risks.

Features can be scaled depending on the customer needs from smaller and less demanding cases to higher and more complex scenarios.

Our Integrated Control Center is able to:

- Integrate a large number of different sensors and subsystems to collect events and alarms.
- Filter and correlate alarms through the intelligent rule based engine.
- Geographically represent the on-field scenario thanks to an effective and flexible GUI integrated with a powerful GIS.
- Automate operations and guide operators in the analysis of the situation by following standard and emergency operating procedures.
- Boost on-field squad coordination through the integration of Mission Critical Communication.
- Track and record all events to enhance post event analysis, investigation and debriefing activities.

Leonardo provides different platforms characterized by the same technological approach supporting security, safety and process management. Leonardo platforms, are characterized by flexibility, scalability, interoperation capability and feature complete integration with professional communications.

## Control Center

SC2

Physical Security management oriented platform able to gather all data coming from on field fixed and mobile sensors (PIDS, AC, Video Surveillance, UAVs), correlate events and drive operators through the resolution of the incident thanks to the automated workflow system (Orchestrator).

X-2030

A new model of control room system based on **C5I concept (Command, Control, Communications, Computers, Cyber & Intelligence)** and system of systems paradigm. X-2030 Integrates operational procedures, decision support processes, radio communications and leverages technologies for a superior situational awareness and informed decision making. Designed to integrate existing systems, provides an innovative user interface based on virtual assistant and natural language understanding.





## HIGHLIGHTS

Leonardo has expertise across all the domains involved in major event support and management.

A distinguishing feature is our ability to provide complete solutions encompassing various domains in projects starting from the green field.

Thanks to this multi-disciplinary approach we are able to provide a complete MEP package as well as security and management solutions for stadia and major events contexts.

## ABOUT CYBER AND SECURITY SOLUTIONS DIVISION

With experience in information technology, communications, automation, physical and cyber security, Leonardo Cyber and Security Solutions Division generates synergies by joining its expertise to support enterprises, agencies, public safety, security and emergency organizations. Our offer includes solutions for the security and protection of critical infrastructures, transport infrastructures, major events and stadia, cyber security, integrated networks systems and secure communications that enable reliable and efficient information management.



Secure Cloud &  
Digital



Global  
Monitoring



Mission Critical  
Communications



Cyber Security  
& Resilience

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