AIRPORT SOLUTIONS

LEONARDO

Airport concept is more and more transforming into a new multiservice and multifunctional environment that moves passengers, baggage and goods and offers both traditional services as travel and transport, and new services like business centres, shopping, events, and cultural life. In this global business environment, airports need to maximize overall safety and security, while increasing passenger facilitation and improving operational efficiency and profitability.

The goal of a modern airports, in fact, to transform the airport experience into a world-class customer involvement, in order to deliver the best in class service to all customers whilst complying with international standards of safety, security and sustainability and delivering a profitable business that provides stakeholder value.

COMPLETE SOLUTIONS

Leonardo develops solutions to optimise the integrated management of operating processes, linking every area of airport operation, and to support the overall growing and evolving business, keeping the environment safe, secure and sustainable:
- Integrated security management to monitor and control all aspects of the perceived safety and security.
- Critical Communications to provide a common, reliable, secure and effective radio network for all the needs of an airport.
- Supervision Control and Automation of any asset and system of the infrastructure to monitor, command all systems and control they are working properly.
- Cyber security solutions to guarantee the monitoring and predictive, proactive protection of strategic data and assets against cyber threats.
- Global monitoring to have a complete and real-time overview of the status of the infrastructure from any perspective: security, operations, business.

BENEFITS

Leonardo solution can provide significant advantages in airport security:

- Deep understanding of security control centers and safety and security procedures in airports and critical Infrastructures in general.

- Strong system integration expertise and flexible integration platforms

- Scalable, flexible security solutions with embedded operator alert systems.

- Integrated communications solutions employing operation specific technologies.

- In-house Research & Development capability for operational communications technologies, sensors design and command and control implementation.

- Long-standing experience in automation and process control for industrial sector.

Leonardo security platforms are designed to provide a common operational picture for Command & Control, security management, situation awareness and resilience, creating a handling center for airport safety and security.

Leonardo can provide an integrated control centre solution where security authorities can benefit from situational awareness to easily supervise the infrastructure, quickly assess, and proactively respond to an incident, with a high level of cooperation between all the entities involved.

Physical Security solutions	
SC2	A very flexible, scalable and reliable solution to manage security in airports with an High level of configurability and the possibility to create a federative architecture between different sites. The solution allows complete situational awareness with all info, resources and alarms actionable on a geo-localized map. Different systems of various brands can be integrated: <u>CCTV cameras with a full featured VMS system, Access Control Systems, Perimeter Intrusion Detection Systems, Intrusion Detection Systems, Fire & Smoke Detection Systems, Public Address General Alarm, Drones, Web applications, Video analytics and many others</u>. Operational communications are supported with geolocated radio and web apps.
ViGate	For cargo airport terminals Leonardo can supply **ViGate solution**, a Gate Automation System specifically designed and built for airports and critical infrastructures to give a relevant contribution in increasing operational efficiency, reducing costs and boosting sustainability. ViGate platform provides all the necessary modules for access control of pedestrian, vehicles, trucks and containers managing sensors placed on access lanes and applications to handle permission, entry registration and transit supervision.
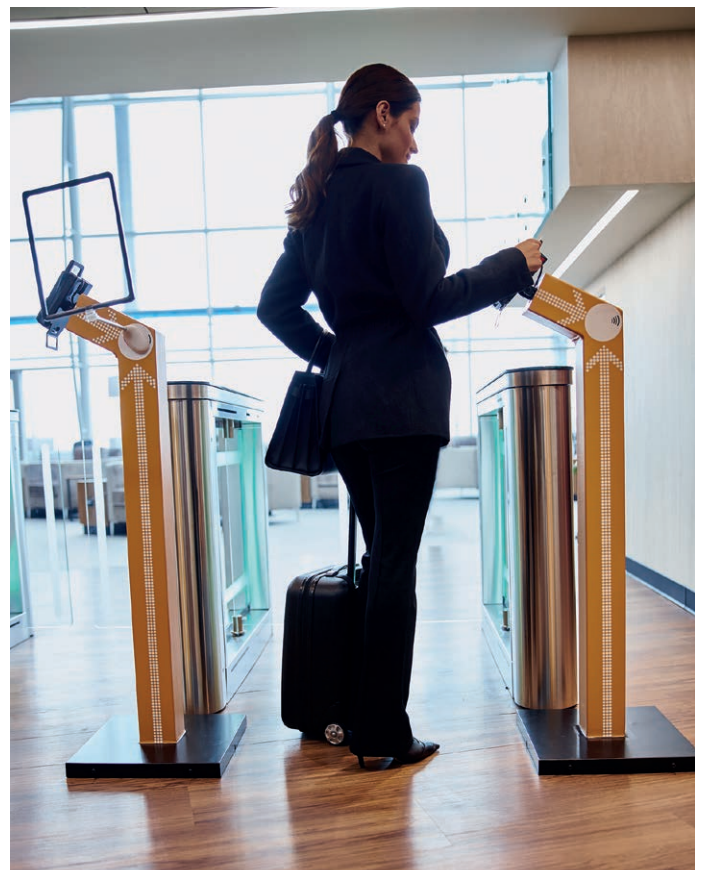
Airports handle highly complex operations and multidisciplinary teams, including aircrafts on the ground, gate agents, security, operation staff and vehicles, customs officers and more. Leonardo develops integrated and interoperable cutting-edge telecommunication solutions guaranteeing reliability, security and coordination of all the operations and bodies in this complex scenario.

Leonardo acts both as a technology provider (TETRA, DMR, Broadband applications, hybrid networks) and system integrator in order to provide turnkey mission critical infrastructures.

Critical Communications

LTE/5G	**LTE infrastructures** support data intensive Law Enforcement 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	The **Adaptanet**® is a complete modular, scalable and flexible family of TETRA products, 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	**ECOS DMR** solutions are characterized by a high degree of scalability and flexibility that allows selecting the most suitable configuration for Customer's requirements. The same radio base station can operate in <u>DMR Tier II</u>, with simulcast option and dynamic <u>analogue FM</u>, or <u>DMR Tier III</u> in simulcast or cellular configuration.
Hybrid networks	**LTE** and **5G** will play a strong role in professional communications in the coming years, but it is widely accepted that a long period where several communications technologies will co-exist is going to characterize the Critical Communications sector both in the mission and the business critical sector. Leonardo **RIM (Italian acronym for multi-technology hybrid network)** is a solution designed for long lasting integrated narrowband-broadband infrastructure supporting professional network evolution. The RIM core network provides coordination and control functions for the integrated network and core network services for **TETRA, DMR and MCX** components.
Push-To-Talk over cellular	Push to talk over cellular is the way to provide professional services over broadband networks. Leonardo **CSP MCX** platform is a complete solution fully compliant with 3GPP standards enabling mission critical communications over LTE and 5G. 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

Airports are complex ecosystems where many systems cooperate to carry out operations; depending on size, location and number of passengers, airports can be characterized by a significant digree of complexity and energy consumption comparable to that of a small/medium city.

Systems and consumption control is thus important to reach emission control target as well as increase effectiveness, safety and efficiency of operations: Leonardo platform and solutions can support these key tasks in airport management.

Supervision Control and Automation platforms

VBrain	A software suite to monitor, manage and control the automation and security systems of buildings, critical infrastructures and heterogeneous and spatially distributed networks. Featuring the characteristics of a powerful SCADA platform (multi source data acquisition with different industrial communications protocols, highly interactive synoptic, command execution, web client application) VBrain provides real-time monitoring and control of operations, networks and facilities, ensuring cost effectiveness and timesaving for maintenance and management processes. Furthermore, VBrain provides complete situational awareness in order to reduce and prevent system failures, as well as ensure business continuity.
EMODS	**ENERGY MONITORING & OPTIMIZATION FOR DECISION SUPPORT** is an enterprise system also operating in cloud to reduce consumptions controlling and managing the energy process also allowing to identify interventions to reduce consumptions and energy bills. Based upon Leonardo's approach to energy efficiency and optimization, EMODS supports consumption assessment, energy efficiency intervention as well as consumption monitoring and management. Energy consumption are monitored in real time, consumption can be clustered, analysed and matched with forecast and historical series providing alerts and alarms in case of abnormal situations and decision support for energy interventions.

Airports process data from millions of passengers and cargo shipments every year. They have access to customers' personally identifiable information and payment details, as well as employee data and biometrics. Moreover, since airports are part of a country's critical infrastructure, breaches can have significant and widespread consequences beyond financial loss and reputational damage.

Today Cybersecurity for airports is more than ever a crucial issue. Leonardo can help airports to enhance their cybersecurity posture and develop stronger, risk-based cybersecurity approaches through a wide offer portfolio.

Cyber solutions	
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 organisations' specific needs.
Cyber security platforms	Leonardo services (as well as Leonardo projects) take advantage of in house designed platforms helping security operators in their task: • **Cyber information superiority suite** 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 • **Cyber Situational Awareness system** is a complete ecosystem specifically designed to keep an organisation's security teams and executive profiles informed of what is happening in terms of Cyber security supporting decision making and security investigation processes.

Cyber threats are constantly evolving and becoming more and more 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 Airport 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 in to promote cyber security awareness increase competencies by means of 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 realistic simulations of cyber attack/defense scenarios and advanced simulation operation to test cyber resilience of system and infrastructures.

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 airport environment leveraging technology to improve operators' effectiveness.

Capitalizing on the power of artificial intelligence and synergic integration of heterogeneous systems, Leonardo's global monitoring solution provide superior situational awareness, complete coordination and control of operations in the management of day by day or emergency conditions.

Global Monitoring platforms

Ganimede	The Leonardo solution for the audio and video analysis based on **AI**, instantiable through different frameworks on different HW platforms. Characterized by multiple application domains (cyber security, investigation, language processing, knowledge graphs, video, audio, geoAI, and image processing), **Ganimede** is a framework for execution of algorithms that can be live or recorded streams for scene analysis and dangerous conditions detection. Different algorithms can be chained for superior evaluation and customized algorithms can be developed by Leonardo Artificial Intelligence Labs. Natively integrated in **SC2** or **X-2030 platforms**, Ganimede provides a set of API for applications in third party systems.
X-2030	Taking advantage of innovative technologies such as AI, big data analysis, intelligence on open sources, virtual assistant, and long lasting domain expertise, Leonardo designed **X2030** a new generation "system of systems" platform able to: • Integrate all existing systems and applications in control room adding new functions and services if needed. • Collect information from structured (databases, archives) and not structured (video, sensors, media) data sources. • Guarantee information superiority to operators by searching and supplying in an automated way all useful information. • Give a situational awareness with a representation of all the resources, information and more significant indexes for the infrastructures on a common georeferenced and actionable map. • Provide effective event monitoring/surveillance/management, also with operational suggestions generated by analytics background activities (data mining, data correlation, video analysis) and taking advantage of virtual assistants and natural language interactions. • Optimize logistics and resource management (skill, equipment) by interacting with all available structured and not structured databases. • Communicate with all the involved resources and operators and collect events notifications with the support of a CAD (Computer Aided Dispatch) function. • Support investigation analysis for monitored phenomena by analysing large data amount and providing simulations.

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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