

LEONARDO CYBER & SECURITY SOLUTIONS

INDUSTRY4FUTURE SUITE



Cooperation, performance, efficiency and safety and security are only some of the needs that industries have to face in order to be competitive and to adapt to rapidly changing economic scenarios. The introduction IoT, Artificial Intelligence, edge computing or communication technologies into an industrial plant enables the transformation and optimization of manufacturing and organizational processes with an improving impact on multiple and different aspects such as product quality, downtime minimization or energy consuming reduction.

Data generated and automatically collected in real-time by heterogeneous devices are at the basis of the creation of new models built on historical data that allow to analyze the behavior and performance of manufacturing processes, make predictions about their future performance and thus make aware decisions.

Leonardo solutions are based on proprietary technology and third party state-of-the-art products, able to meet the increasing operational demands of industries such as manufacturing efficiency, quality control, equipment availability, safety and security of plants and cybersecurity. These solutions encompass protection of assets and people through the integration of high performance sensors, physical & cyber security, mission critical communications and process automation systems, in order to provide:

- Industrial digitalization: addressing production operations monitoring, products' quality verification, maintenance optimization, items' tracking and process continuous improvement
- Safety and security monitoring, and energy optimization: focusing on safety and alarms and event management and supporting energy cost and consumption control
- Critical communication: providing support for health and safety as well as production and maintenance operations
- Cybersecurity and cyber resilience: addressing the cybersecurity and cyber resilience of industrial digital infrastructures and applications
- Cyber training: focusing on promoting cybersecurity awareness and increasing competencies.

BENEFITS

- Deep knowledge of manufacturing processes also developed on Leonardo plants
- Cybersecurity integration for a secure digital transformation
- Prompt detection and management of any production anomaly as well as unexpected dangerous situations
- Energy efficiency improvement through consumptions continuous monitoring and intervention opportunities identification for energy behaviour enhancement.



The complex and gradual transformation process of manufacturing industries is not only related to the introduction of technologies into an industrial plant, but has to address aspects as organization's processes or the way people interact both within and between organizations. Furthermore, in the industrial sector the introduction of innovative technologies supports the creation of digital workflows supporting more efficient, collaborative and controlled manufacturing processes improving the planning, execution and maintenance phases.

Leonardo, leveraging the experience made on its own production plants, has developed a complete offer to support the digital transformation of industries through:

- multidisciplinary teams that are able to address the organizational, process, security and regulatory aspects
- advanced hyper-connected and secure solutions coupled with experience in big data & analytics projects
- the design, implementation and management of digital infrastructures based on the customer's needs to ensure the required performance, as well as scalability and reliability requirements.

Secure Cloud & Digital solutions

Secure Connected Factory

Secure Connected Factory, through the real-time acquisition of data from equipment and devices, allows the complete and integrated monitoring of all the processes and assets of a production plant increasing efficiency and products' quality. The correlation and analysis of historical data and information allows to plan and perform maintenance interventions through a predictive model to make factory maintenance more efficient, reduce costs and maximise operational availability.

Cloud migration support

Leonardo has an iterative model and a supporting tool to address assessment and feasibility activities related to cloud migration. The model addresses the activities of analysing the infrastructure, identifying specific performance, efficiency and security objectives, defining the expected and desired state of Cloud adoption, analysing current gaps and identifying and planning the interventions to be implemented.

Secure Cloud Management

The need to orchestrate, secure and govern hybrid, multi-cloud and edge computing cloud environments is managed through the **Secure Cloud Management Platform**. The platform provides overall visibility over the resources, simplifies their management and makes it easier to optimise them within the infrastructure, thus enabling constant control over performance, quality of service delivery and security. The ability to perform what-if analyses allows scenarios to be simulated to assess the impact of any changes in infrastructure capacity, the migration of loads from one environment to another, and to control costs.

Safety and security have always been a need in the industrial sector. The data generated by more and more sophisticated sensors equipping industrial devices and surveillance system can be analyzed and processed to support security operators in order to detect and face unexpected events. The development of new techniques based on artificial intelligence (AI), neural networks and deep learning in support of security systems is more and more becoming a key factor for effective solutions.

Leonardo's platforms are able to manage information from multiple systems to provide a single point of view of all operations. Analytics techniques can be employed for the massive analysis of live and recorded data streams in order to track potentially dangerous situations such as presence of personnel in a forbidden area or absence of individual protection equipment.

Safety and Security Monitoring, and Energy optimization platforms

Surveillance and analytics

The company provides systems to manage and control different real-time video technologies. Each video stream can be instantly replayed and recorded for later investigation purposes. Video streams (as well as audio streams) can be processed by company artificial intelligence based video and audio analysis system named **Ganimede** for enhanced detection of dangerous or abnormal situations. Video surveillance and analysis systems are integrated in the **X-2030 control platform** that integrates operational procedures, decision support processes 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.

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.



Industrial systems require fully integrated information and communications solutions that are both reliable and robust, designed to operate in extreme and hazardous environments and during critical and emergency 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.

Complete communications packages are available to manufacturing Customers, addressing:

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

Communications products

Network infrastructure

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).

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.



The increased reliance of existing platform on software and the extensive interconnection of network and systems enlarge the potential cyber-attack surface and exposure. Networks and applications need to be cyber protected and resilient in order to provide the operation continuity deserved by Industries.

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

Cyber Security & Resilience	
Risk Advisory & Consulting Services	Leonardo supports its Customers to understand and manage the cyber risks that they are exposed to. These services include a proprietary approach and an established process for designing and building on-premises security management infrastructures (SOC, CERT, IOC).
Managed security services	Managed security services, provided by Leonardo Global Security Operation Centre, configure and monitor IT/OT/IoT systems' security status in order to identify any breach of security policies to apply appropriate response actions. These services are and natively integrated with threat intelligence services with the aim to enhance detection capabilities.
Cyber security platforms	Leonardo services (as well as Leonardo projects) take advantage of in house designed platforms helping security operators in their task: <ul style="list-style-type: none">• 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 TRAINING: WHERE KNOWLEDGE MATTERS



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.

The industrial sector because of the wide diffusion of ICT technologies in vital processes is feeling these needs as any other technologically advanced organization.

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.





HIGHLIGHTS

Digitalization and development of innovative services inspired by the Industry 4.0 paradigm make plants organization more competitive transforming manufacturing processes and eliminating waste and losses for a more sustainable production.

Leonardo supports its Customers through a complete offer for the industrial digital transformation in order to optimise production, products quality and maintenance, monitor safety and security, and improve energy efficiency.

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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