



INDustrial TECHNOLOGIES 2018
Innovative Industries for Smart Growth



INDTECH2018

Innovative industries for smart growth

29-31 October, 2018
Vienna, Austria

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PILLAR 1

Session 1.5

Aerospace and Defence: a Leonardo Perspective

Marina Settembre

Leonardo

31 October 2018

Our Business

Leonardo is a global high-tech company and one of the key actors in Aerospace, Defence and Security worldwide.

DIVISIONS



SUBSIDIARIES AND JOINT VENTURES

- Leonardo DRS (100% Leonardo)
- Telespazio (67% Leonardo and 33% Thales)
- Thales Alenia Space (67% Thales and 33% Leonardo)
- MBDA (37.5% BAE Systems, 37.5% Airbus Group, 25% Leonardo)
- ATR (50% Leonardo and 50% Airbus Group)
- Avio (28%)
- Elettronica (31.33%)

4 FOUR
DOMESTIC
MARKETS

ITALY
UK
USA
POLAND



About **150**
countries use our
products, systems
and **services**





I4.0 Technologies



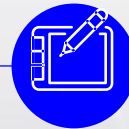
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Digital Transformation

Stronger ecosystem interactions on innovation

- *Open Innovation*
- *National Competence centers:*
 - *Manufacturing 4.0*
 - *Industry 4.0*
 - *Start 4.0*
 - *Cyber 4.0*
- *European Cooperation*
 - *Artemis IA*
 - *EC SO*
 - *EOS*
 - *Trilateral Cooperation on Digitizing the Manufacturing Industry*

Policy, Standardization and Regulations



Cooperate with clients on operations and business evolution



Deeper and broader integration

- *End to end digital continuity*
- *Horizontal and vertical integration*
- *IT & OT*



People & Organizations

- *Digital Transformation Programme*

Digital Taking - off in Aerospace & Defence

- Digital transformation affects every industry strategy, impacting on business models, manufacturing maintenance, logistics and operations.
- Features and Pathways for Aerospace & Defence manufacturing and logistics:

Features

- *Increasing, but still modest production volumes*
- *Long life programmes*
- *High complex and regulated products*

Pathways

- *Lead time reduction in production lines*
- *Secure and Traceable Supply Chain*
- *Smart Maintenance & Logistics*
- *Smart Production Planning, Control, Execution*
- *Virtual Design and Simulation & Training*



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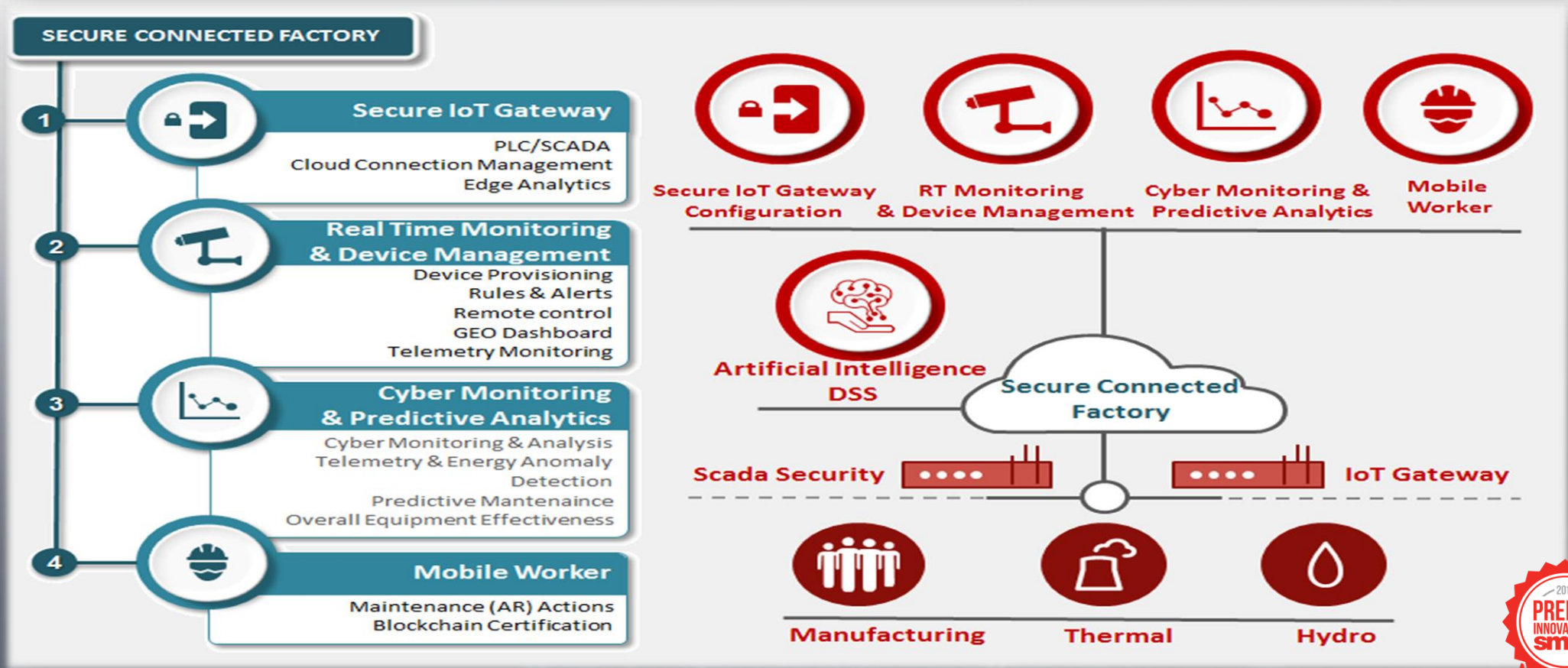
Highlights on Leonardo for Digital Manufacturing, Logistics and Training

- 1 **Secure Connected Factory**
- 2 **Digital Twins, Simulation & Training**
- 3 **Maintenance 4.0**
- 4 **Logistics 4.0**

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Leonardo Secure Connected Factory



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Federal Ministry
Republic of Austria
Transport, Innovation
and Technology

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eXtended Reality Training Tools



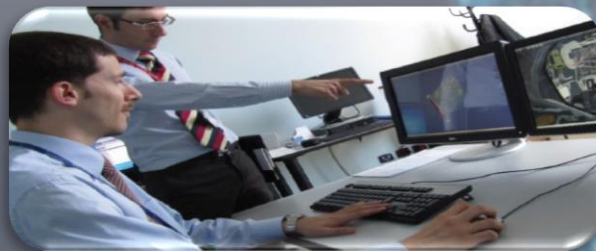
- Innovative virtual reality training tool
- Immersive, customizable and interactive environment (scene) that replicates a real operating and maintenance environment in a safe virtual space



Virtual Maintenance Trainer



- Simulated training environment for technicians and logistic personnel, teaching maintenance and diagnostic procedures without the reliance on real equipments





Maintenance 4.0

Predictive Diagnostic

Corrective maintenance

- Remote Monitoring
- Data Analysis & Diagnostic
- Smart Alerts
- Customised Maintenance

Predictive Maintenance

Condition-based maintenance

- Neural Networks / Machine Learning
- Advanced Sensors
- IoT & Cybersecurity
- Digital Twins

Maintenance

Preventive maintenance (time-based)

Field Service & Lifecycle

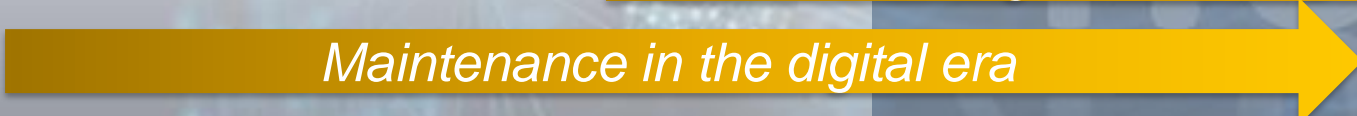
Maintenance, Repair & Overhaul

- Dynamic update of configuration
- Digital Spare Parts Catalogue
- Configuration Mgmt

Improved Maintenance

MRO Plus, Smart Maintenance

- 3D Robotics
- Selective Laser Melting Additive Manufacturing
- Augmented Reality
- Smart Tracking
- Smart Safety



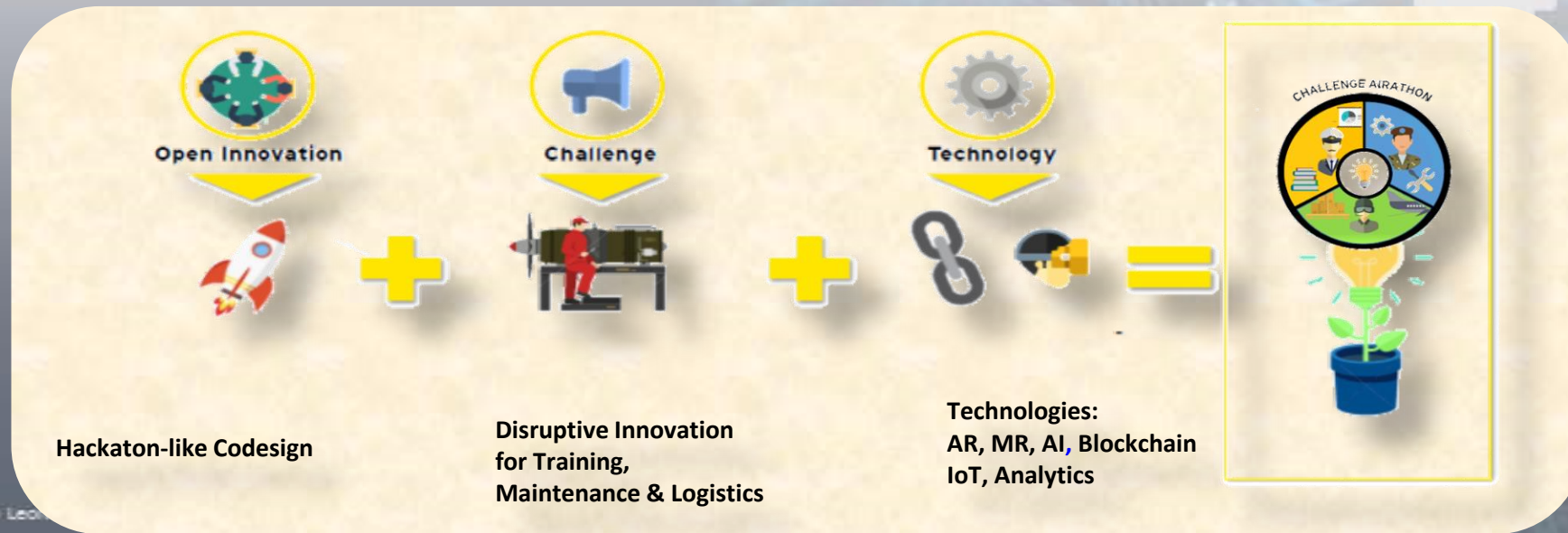
Yesterday

Today

Tomorrow

Airathon: First European Hackathon for Aerospace

- Leonardo played an important role in the first "**Airathon**" organized by the Italian Air Force
- **Selected Start-ups, Academia and Industries** cooperated on a creative marathon applied to disruptive logistics, training and maintenance solutions for aeronautical systems and equipment
- Approach of **Open Innovation** typical of the "**Hackathon**" model



Airathon Highlights

- 48h: Airathon Time duration
- +40 Start-ups
- +40 Experts and Professionals
- 2 winners
- Special mention to Leonardo



«The true sign of intelligence is not knowledge but imagination».
Albert Einstein

4.0

«What is now proved was once only imagined».
William Blake



Thank you for your attention

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