XXVIII Assemblea Generale dell'Italy-Japan Business Group (IJBG)

Andrea Biraghi
Managing Director Security & Information Systems Division

Milan, 25 November 2016

LEONARDO

ITALY·JAPAN BUSINESS GROUP

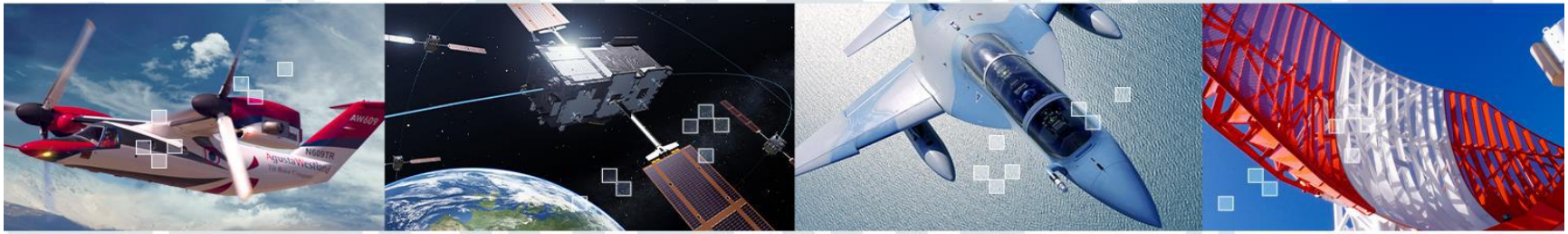
2016: A new beginning

One Company, Stronger Together

1 January 2016: we absorbed the activities of **AgustaWestland, Alenia Aermacchi, Selex ES, OTO Melara** and **WASS** into One Company, while maintaining Parent Company and Corporate Centre functions for **DRS Technologies, MBDA, Telespazio, Thales Alenia Space,** and **ATR.**

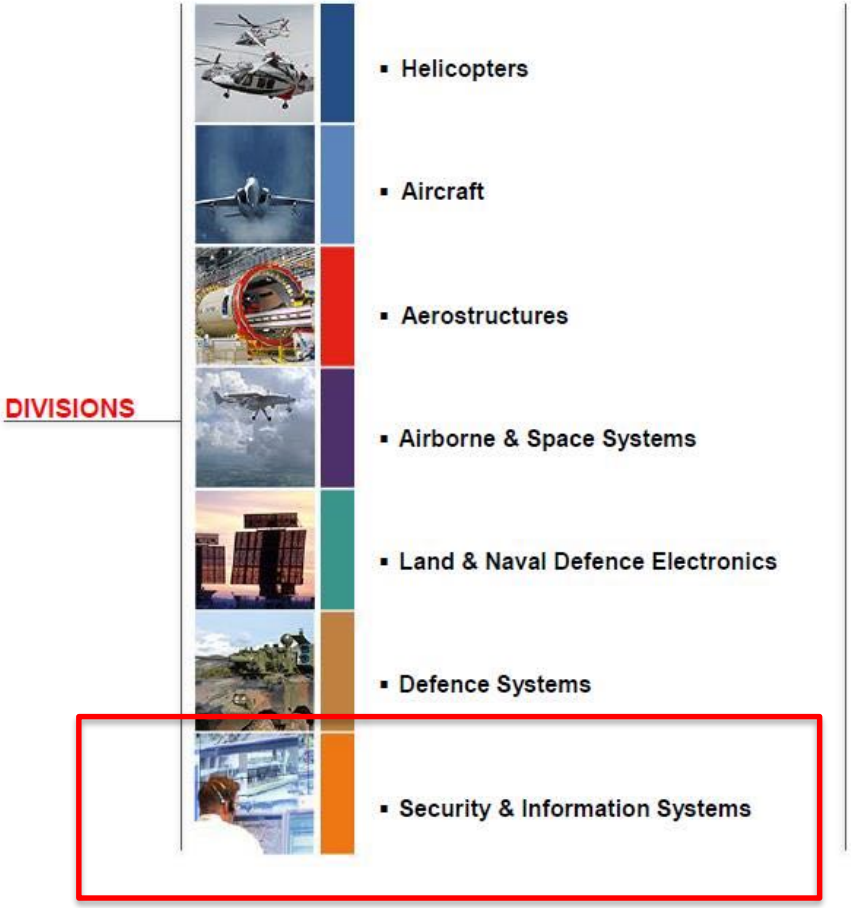
Finmeccanica is now Leonardo

28 April 2016: our name changed to Leonardo, inspired by Leonardo da Vinci, a universally recognised symbol of **creativity and innovation. Leonardo** represents the **ideal bridge** between historical legacy and our future in the high-tech industrial sectors.



Our Business

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



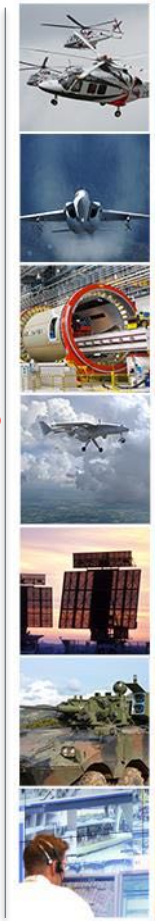
SUBSIDIARIES AND JOINT VENTURES

- **DRS Technologies** (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)

Our Business

Leonardo is a global company in the high technology sector and one of the key actors in Aerospace, Defence and Security worldwide.
We operate through:

DIVISIONS



- Helicopters
- Aircraft
- Aerostructures
- Airborne & Space Systems
- Land & Naval Defence Electronics
- Defence Systems
- Security & Information Systems

S&IS Customers

Security & Information Systems – Our competitive Edge

System Integrators

We design, develop and implement solutions partnering with public and private organizations to harness the latest technology and so deliver fully automated, highly robust, sustainable solutions for critical infrastructures, transportation, communications and public services.

Devices Manufacturers

We design and develop in-house advanced sensors, secure communications and operation systems uniquely positioned to address the rapidly changing high technology needs of security, civil resilience, air and maritime route management and e-commerce logistics.

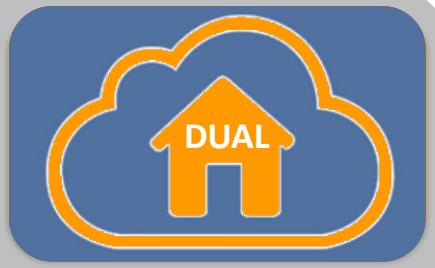
Industrial players

We belong to a large industrial group and we have a strong culture of industrial processes built through the study and implementation over 30 years of technologies for industrial automation, manufacturing excellence and IT system for enterprise planning and control

Migrating services towards Industry 4.0

SERVICE PROVISIONING

"Cloud-based" services, provisioned by accessing Leonardo platform with consulting support either remote or on-site on clients' request



"Hybrid" service provisioning through local solutions on clients' equipment and remote access to Leonardo's platform

"On Prem" service provisioning through solutions desigend and developed at clients' premisee through proprietary equipment

IoT SECURITY and MANAGED SERVICES

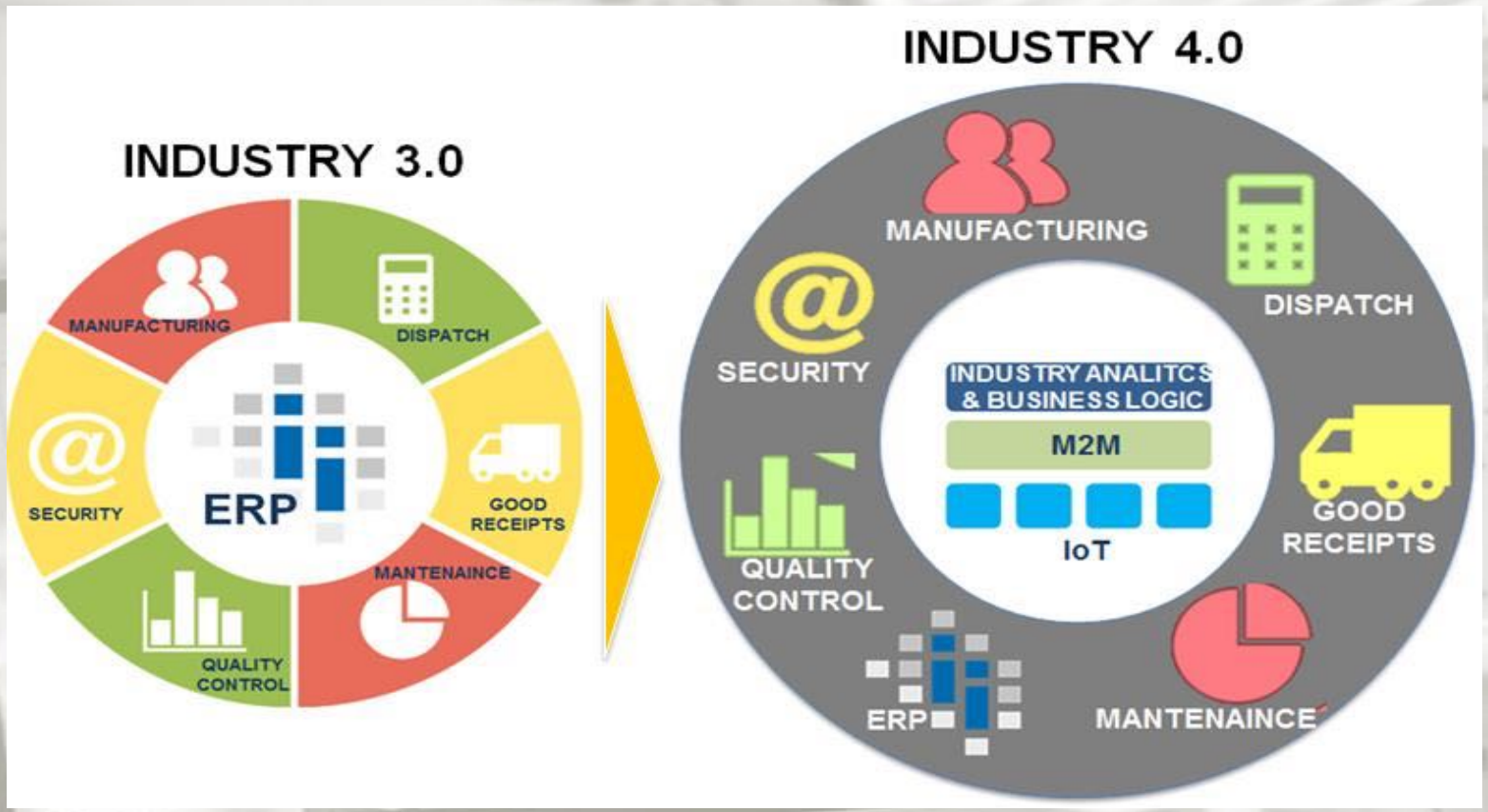
ASSETS

CONSULTANTS

MANUFACTURING 4.0 PLATFORM

CLOUD INFRASTRUCTURE

The digital transformation is changing the way machines are used, but also billed, maintained, …



Aerospace is leading the way….

IoT is very relevant in Aerospace for maintenance actvities.

Airbus China has recently evaluated the dialy cost ofa grounded Airbus A380 in $ 1.250.000

Any new generation Geared Turbofan™ (GTF) PurePower® engine from **Pratt & Whitney** has ca. **5000 sensors** and can generate up to **10 GB** data per second**.** A couple of engines can generate **844 TB** data in 12 hours of flight.

With an orders portfolio of **3500 GTF engines**, Pratt could have to download **ZETTABYTES of** data from each machine upon landing.

ROLLS ROYCE

Rolls-Royce is an example of "servitization", proposing a business model of "power-by-the-hour" that includes every support activity required to guarantee the efficiency of the engine

… but we must pay attention to new threats…

Insecure Web interface

These issues are of particular concern for devices that offer access to devices and data via a cloud website.

Insufficient authentication and authorization

A majority of devices along with their cloud and mobile components failed to require passwords of sufficient complexity and length with most allowing passwords such as “1234” or “123456.”

Insecure software and firmware

Given that software is what makes these devices function, it was rather alarming that most of devices display issues including no encryption during downloading of the update.

Lack of transport encryption

We found that a majority of the devices failed to encrypt network services transmitting data via the Internet and the local network. The importance of transport encryption rises significantly when you consider that data is being passed between the device and the cloud, and a mobile application.

… and must not forget resilience and business continuity

Business continuity

Machine learning for adapting to behavior of applications and users and providing altrnatives to broken services

Cloud

Hybrid solutions to guarantee scalability and peak power for overloads

Logical Resilience

Modeling and simulation for system continuity an emergency restoration

Physical resilience

IoT is about the interaction between application and things; sensors can allow to observe many more data, identifying weak signals of imminent failures and allowing to act to prevent mechanical and physical damages