

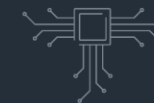
Leonardo Helicopters

# Digital Transformation: Challenges and Opportunities

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Milano

30 Marzo 2022



Electronics



Helicopters



Aircraft



Cyber &  
Security



Space



Unmanned  
Systems



Aerostructures



## Introduction

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## Digital Transformation in Leonardo Helicopter

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## Challenges & opportunities

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# Leonardo Group

Leonardo is a global company in the Aerospace, Defence and Security sector with an integrated offer of high-tech solutions for both military requirements and civil applications.

## 2021 Leonardo's figures

REVENUES	B€
14,1	
NEW ORDERS	
14,3	
ORDER PORTFOLIO	
35,5	
EBITA	
1,12	



### Helicopters

Helicopters Division  
Kopter (100%)



### Defence Electronics & Security

Electronics Division  
Cyber Security Division  
Leonardo DRS (100%)  
Vitrociset (100%)  
Electronica (31.33%)  
MBDA\* (25%)



### Aeronautics

Aircraft Division  
Aerostructures Division  
ATR\* (50%)



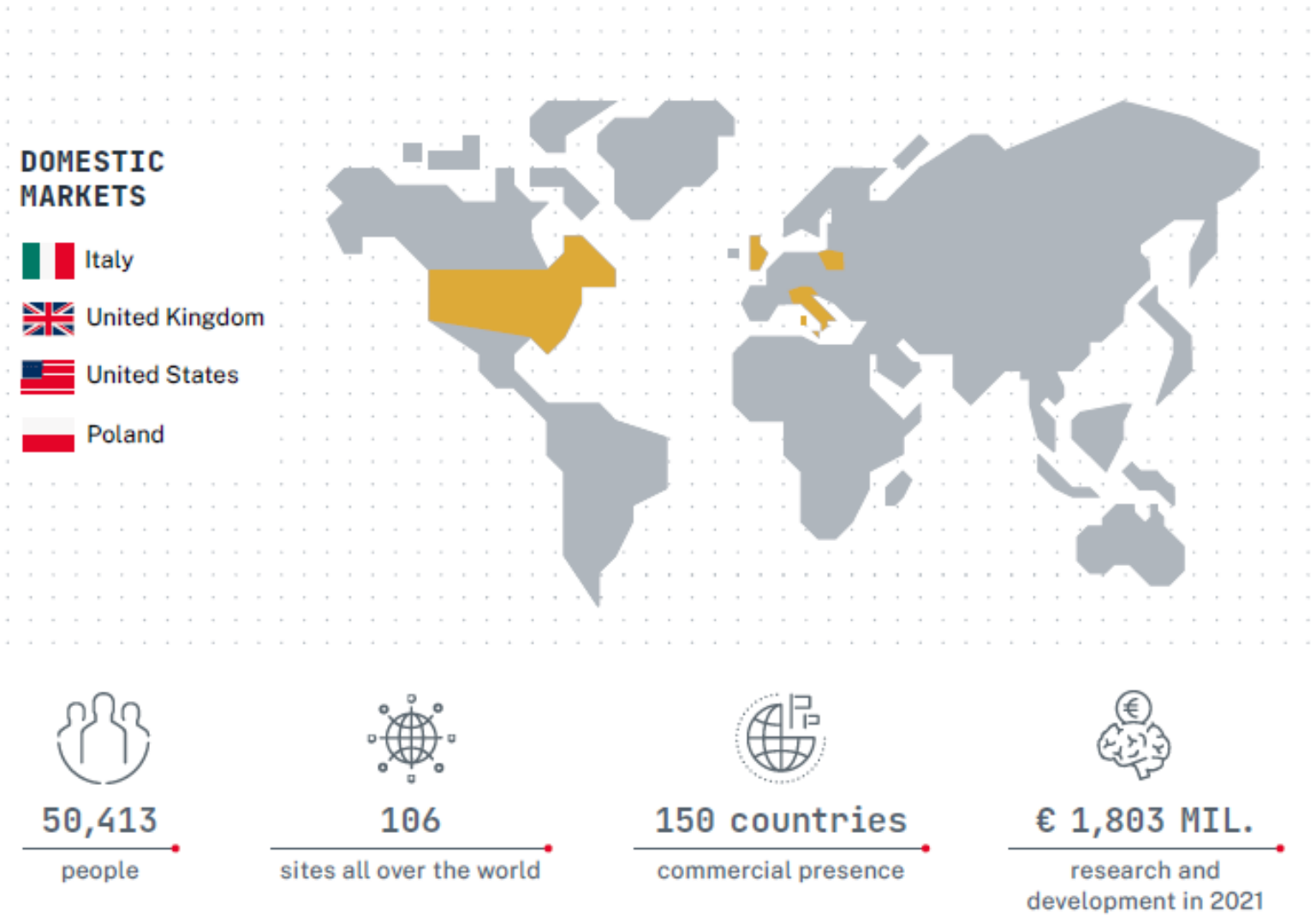
### Space

Telespazio\* (67%)  
Thales Alenia Space\* (33%)  
AVIO (29.63%)

\* Joint ventures | % Leonardo's share



# Global presence



# 2021 result restates Helicopters importance and weight within Leonardo, contributing for ~30% to group's revenues

REVENUES

4,2 B€



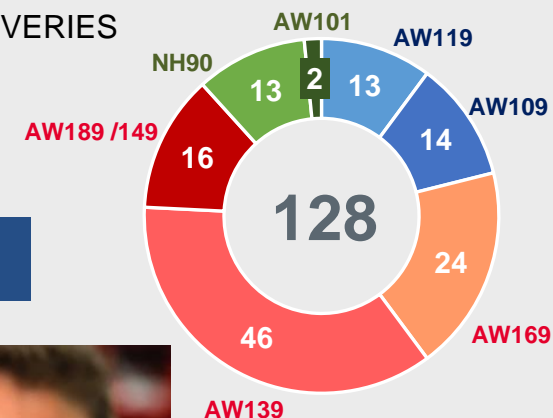
EBITA

406 M€

EBITA margin

9,8%

DELIVERIES



ORDERS

4,4 B€

R&D INVESTMENT

234 M€



WORKFORCE

12.392

# LH leadership is based on a clear mission: to be a global innovator in vertical flight, maintaining a strong positioning in reference markets

*three fundamental elements support **LH leadership***



## **CONTROL OVER THE ENTIRE VERTICAL FLIGHT VALUE CHAIN**

from **preliminary stages of concept design** to the **supply of turnkey support schemes solutions** to our Customers

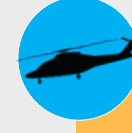
**CORE COMPETENCIES**



## **EFFICIENT AND INTEGRATED INDUSTRIAL MODEL**

organized by **centers of excellence**, each one with **key competences**, strongly **focused on digitization** and long-term **sustainability**

**INDUSTRIAL PROCESSES**



## **WIDE AND MODERN PRODUCTS PORTFOLIO**

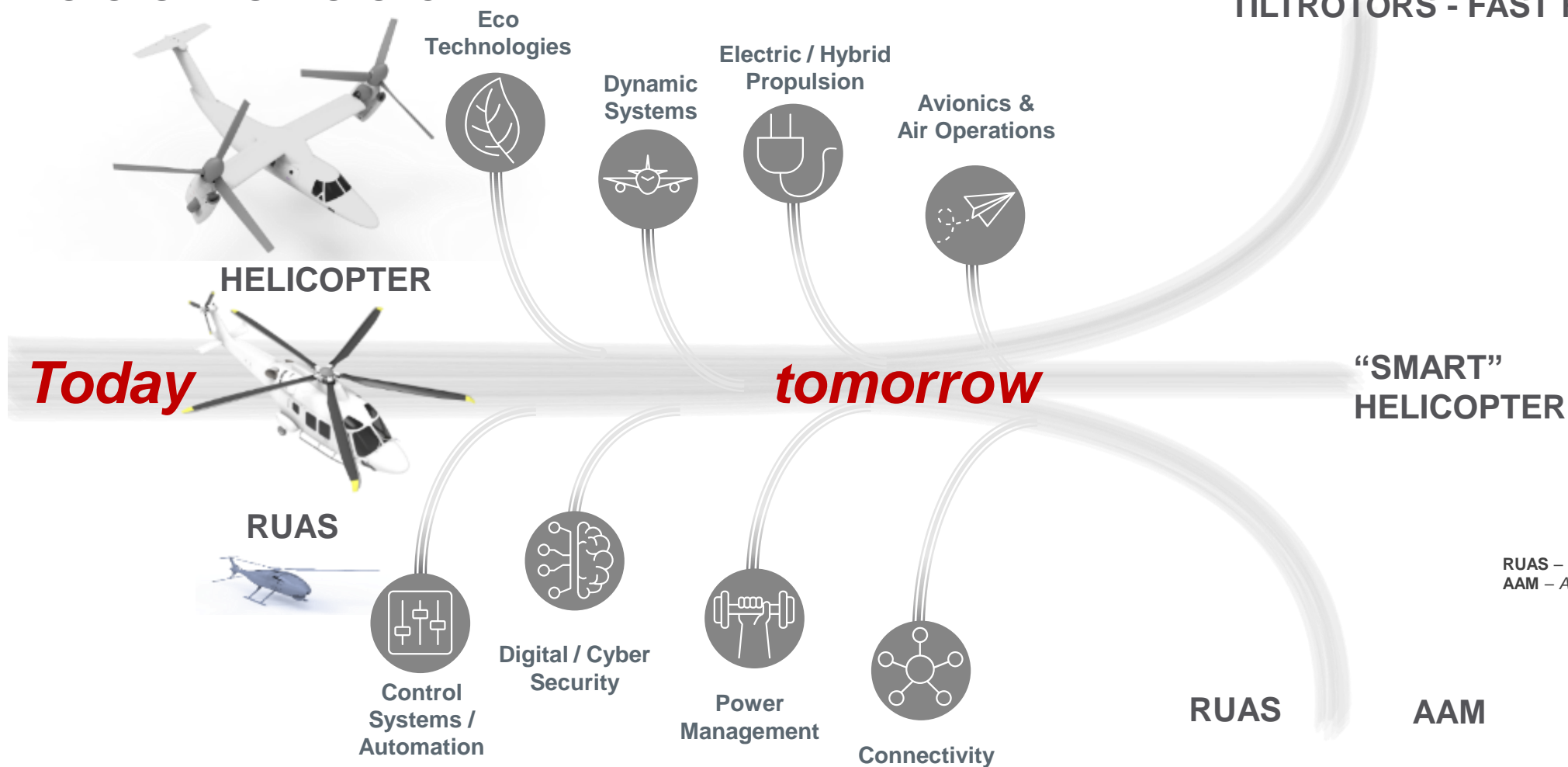
leveraging **dual use technologies**, matching **current civil and military requirements** with potential to **evolve for future mission needs**

**PRODUCTS AND SERVICES**

# Vertical flight requirements / missions are evolving along clear trajectories foreseeing different architectures for different roles

TILTROTORS - FAST ROTORCRAFT

TILTROTORS - FAST ROTORCRAFT



RUAS – Rotary Unmanned Air System  
AAM – Advanced Air Mobility





Introduction

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## **Digital Transformation in Leonardo Helicopter**

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Challenges & opportunities

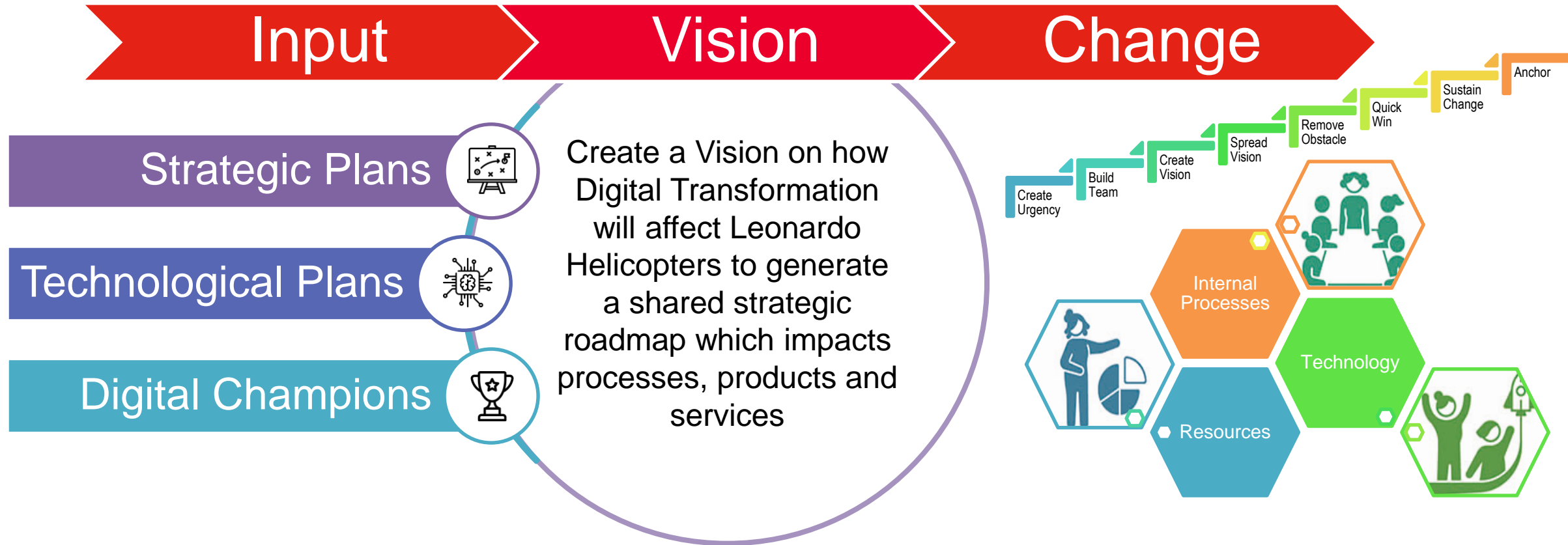
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# What we mean with Digital Transformation



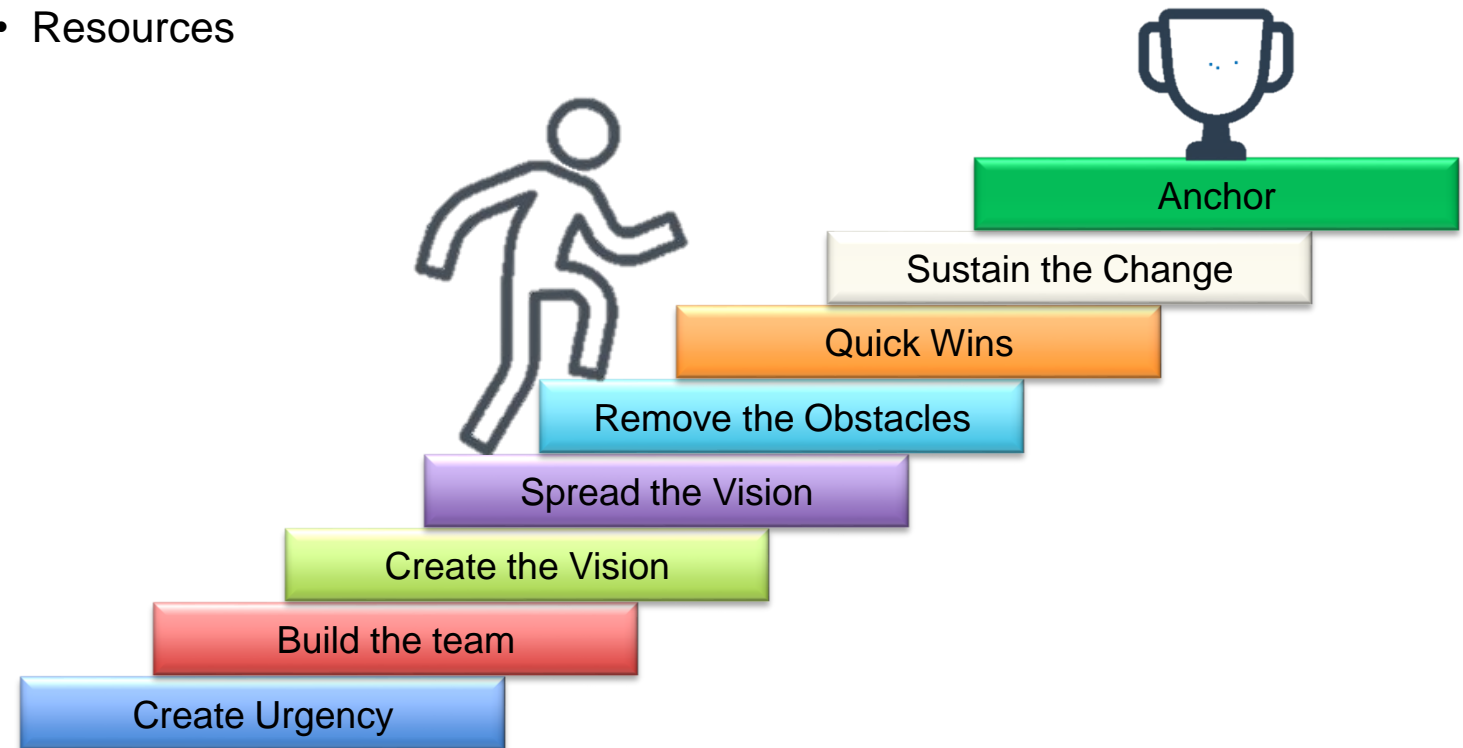
Digital Transformation is **business transformation enabled by digitalization**

# Management of the change and adoption makes the distinction to be successful



To be effective in our journey of change management we act on:

- Internal processes
- Technologies
- Resources



# LH is implementing its Digital Transformation through a two-fold approach...

## TOP DOWN

- **Digital Transformation Organisation** established to give a **unique governance** to the **entire Value Chain** transformation
- Clear mission, with **commitment on all levels** of the Divisional management
- **Industrial model and processes** are being shaped to favor Digital Mindset



## PROCESSES



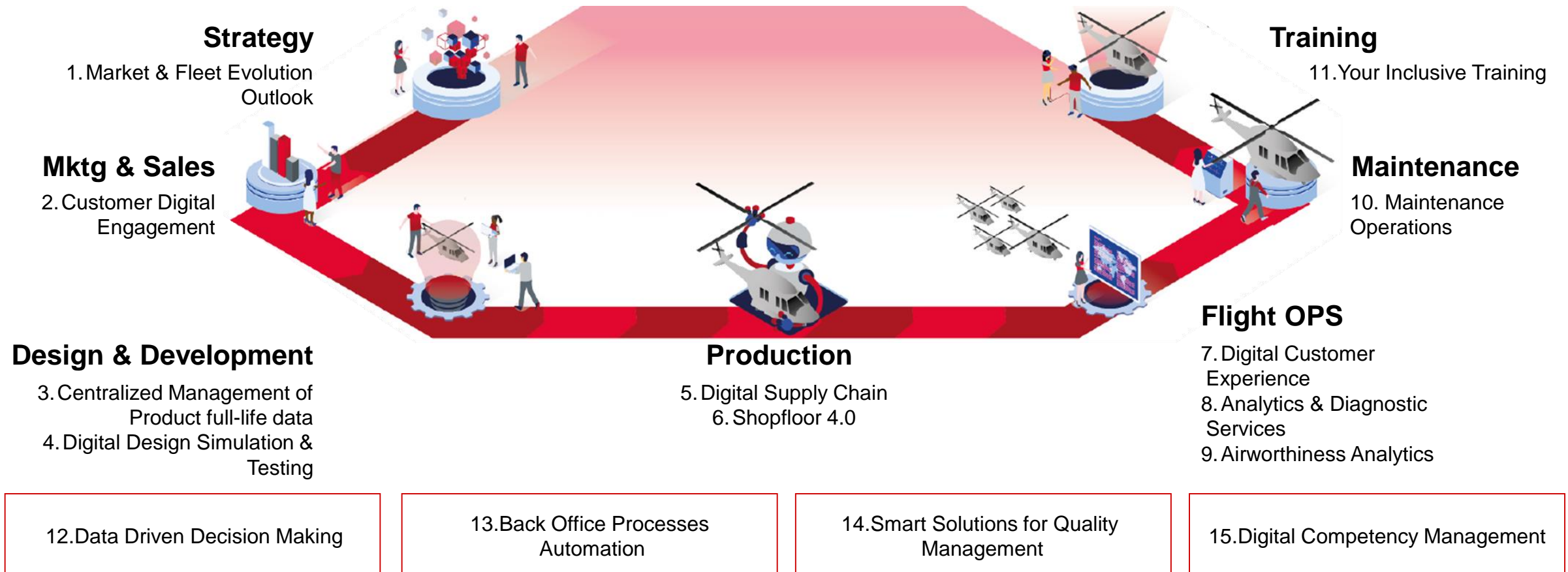
## PEOPLE / COMPETENCIES

- INVESTING ON THE FUTURE: **provide key people** at the heart of our transformation journey **with skills and competencies** through **dedicated training path**
- MISSION: bring **cultural change** into the organisation with **new skills** and **new approach**

## BOTTOM UP

***PEOPLE ARE CATALYST ELEMENTS OF THIS TRANSFORMATION***

# Leonardo Helicopters Digital Transformation Roadmap





Introduction

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Digital Transformation in Leonardo Helicopter

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**Challenges & opportunities**

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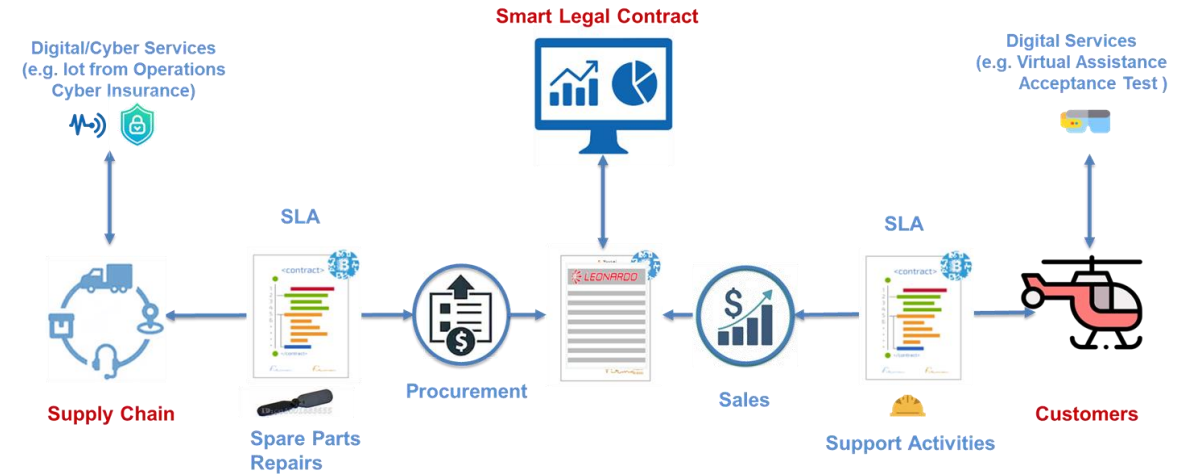
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# BLOCKCHAIN - Smart Legal Contracting: a full End-to-End Solution

**Smart legal contracts Innovative Platform**, managing the entire contract life-cycle ensuring transparency and resilience towards Customers:

- fully **integrated with ERP and CRM** (Leonardo Customer's Portal) systems
- compliant with **internal and external security requirements**
- adopting a **Leonardo private blockchain**

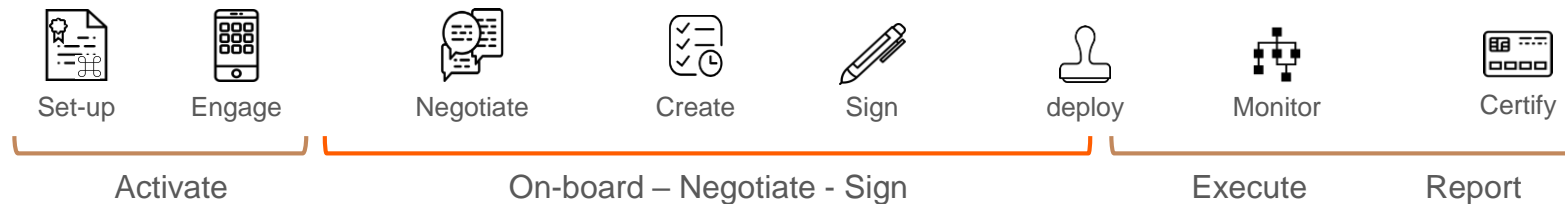


## **BUSINESS NEEDS**

- Standardize/Improve processes and contracts (sell/buy)
- Business resilience, security and transparency
- Data exploitation to support decision making and new digital business models
- Turn contracts into shared ecosystems between parties

## **COST SAVING**

- Digital contract management cutting costs
- Increased service performance while reducing risks
- Supply Chain management
- Remote acceptance/milestones acknowledgement



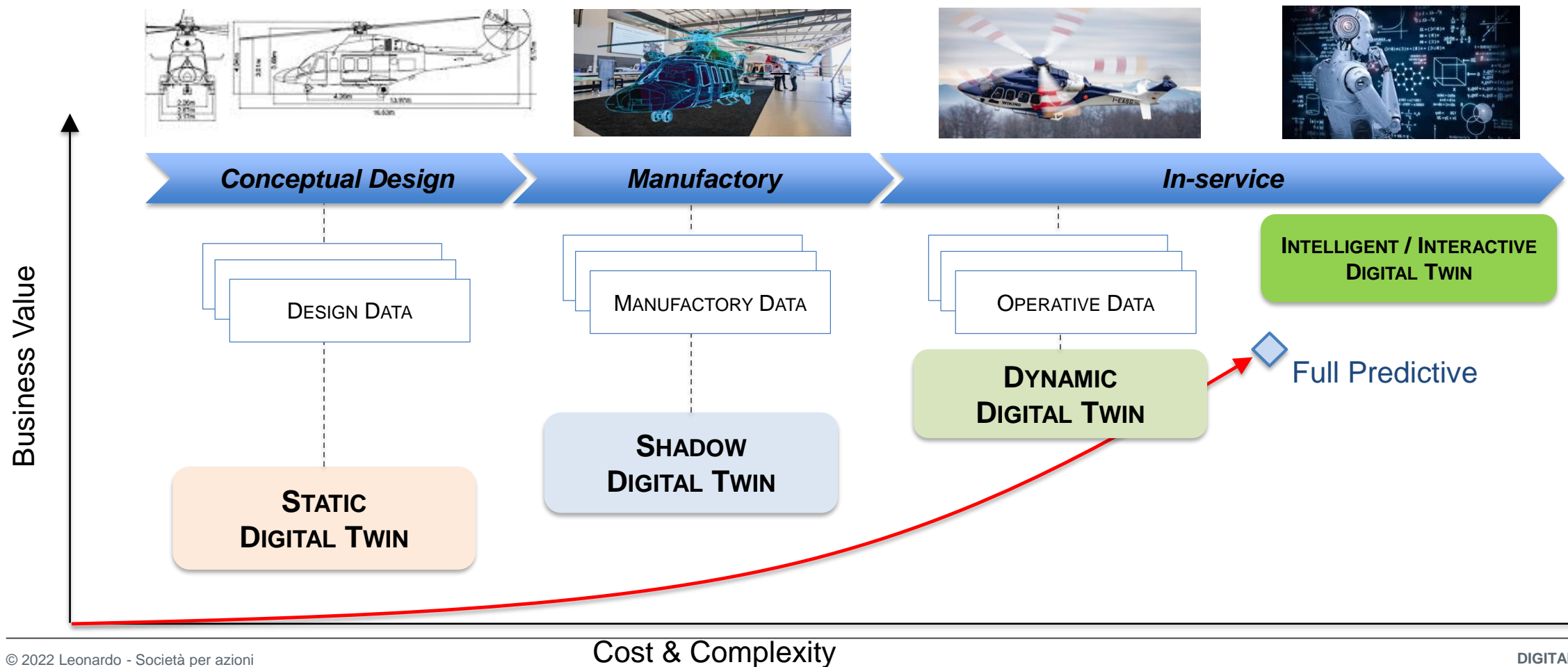
**Leonardo Smart Legal Contracting: driving Service Excellence and Customer Satisfaction**



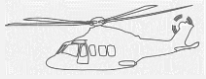


# HIGH-PERFORMANCE COMPUTING - DIGITAL TWIN

- The complexity of helicopters calls for an extensive implementation of advanced digital and simulation solutions to guarantee safety, effectiveness and sustainability over the entire product lifecycle
- A Digital Twin is a **virtual replica** of a physical entity - a product or a process - that can be continuously updated by the **data** from its **physical counterpart**



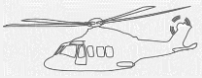
# BIG DATA & AI - Overview of proposed Digital Solutions & Services



Connected  
Aircraft

**Huge amount of Data available from the entire fleet of helicopters in service connected with Leonardo Data Lake, satisfying Cybersecurity requirements and feeding the following Digital Services:**

1



Digital First

- **HeliConnect:** ALL\_IN\_ONE app to provide enhanced User Experience and promote the complete portfolio of functionalities to the Customer, including the relevant fleet dashboards (fully aligned with Leonardo Customer Portal).

2



Configuration  
management

- **Digital logbook:** digitized version of traditional logbook (paperless), provided at H/C delivery/ acceptance, to help customers in keeping track of H/C maintenance information along its lifecycle

3



Data exchange &  
Dashboards

- **Data exchange & Dashboards:** evolution of current data analysis and exchange application, with new functionalities, improved processes and enhanced user experience

4



Advanced  
Diagnostics

- **Analytics:** analysis and insight generation from data collected during missions, leveraging new algorithms, AI and machine learning software, to enable predictive analysis and enhance transparency





# ROBOTICS - Collaborative Robot in Aeronautics

- Human-Robot collaboration (HRC) is a new trend in the field of industrial and as an important part of the strategy Industry 4.0. The main goal of this new solution is to improve the safety, ergonomic, productivity and quality.
- In the aeronautical sector, collaborative robots can support humans in those repetitive activities, requiring continuous attention and therefore subject to errors due to human factors.



Robot ‘Dogs’ to keep shop floor clear of Foreign Object Debris.



Robotic arms test cockpit instruments.

Human		Collaborative Robot	
Slower		Faster	
Manual activities		100% Automated activities	
Paperwork		Paperless process	
Subjective avaluations		Objective and repeatable evaluations	
Risk of errors		100% Accurate	
Low traceability of results		Digital history	

# VIRTUAL REALITY – Immersive Simulation

## TRAINING IN IMMERSIVE AND INTERACTIVE VIRTUAL ENVIRONMENT - SAFE & GREEN

- Immersive virtual reality opens new possibilities to innovate traditional training and improve learning retention.
- Leonardo Helicopters Virtual Reality training experiences focus on safety and are designed to enhance training effectiveness.
- The trainee becomes leader of its own learning path, increases familiarity with operating environment and can improve soft skills to properly react in normal, abnormal or emergency conditions.
- Virtual Reality makes learning **safer**: each action can be analysed and evaluated in a **safe** environment and individuals can get equipped to experiences that may not be frequently experienced.
- Scenario-based training let the trainee get familiar with operational environment improving both the **effectiveness** while performing real tasks and the time of reaction in case of emergencies
- Safety improvement, cost reduction, continuous availability and realistic reproduction of job environment prove Virtual Reality effectiveness and ensure a positive trend in the use of Virtual Reality training experiences

