



Il Capitale Umano al centro della Trasformazione Digitale di Ansaldo Energia







ANSALDO ENERGIA GROUP

Luca MANUELLI - CDO

Milano – 7.2.2018

The Future of Energy ... the 3Ds

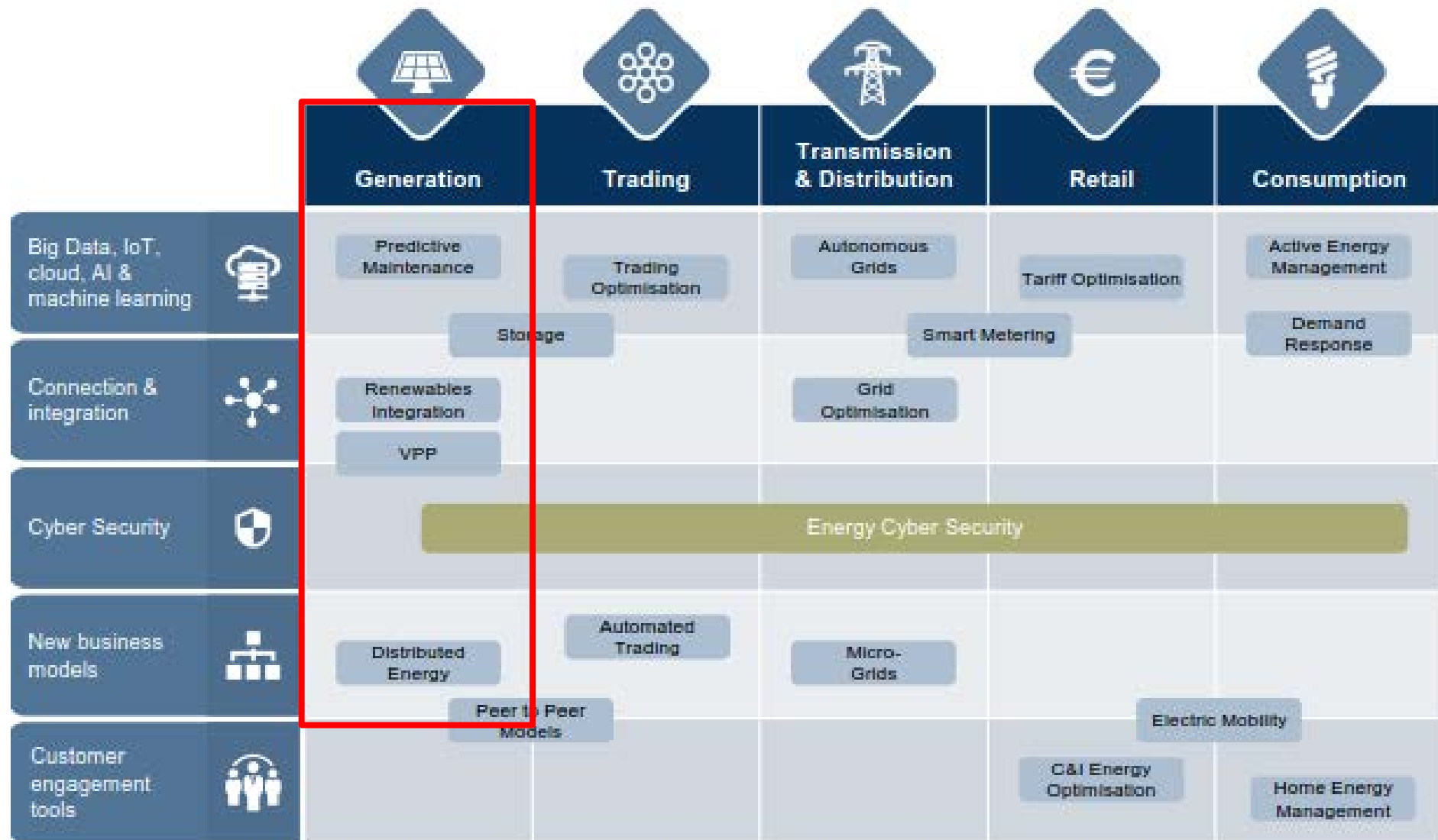
Energy will be cleaner, more accessible, intelligent, connected and responsive; Digital transformation will converge with business transformation.

	<h2>DECARBONISATION</h2> <p>Shifting generation, transmission, distribution and usage towards a lower carbon future.</p> <p><i>Renewable energy, e-Mobility, energy efficiency, new and future fuels, demand side management, etc.</i></p>	 <p>44% of global generating capacity from renewables by 2025</p> <p>1,600 GW of renewables capacity added between 2017 & 2025</p>
	<h2>DECENTRALISATION</h2> <p>New DG models with a proliferation of distributed and connected generation, closer to the point of use.</p> <p><i>Distributed generation, energy storage, microgrids, prosumers, VPPs, P2P, etc.</i></p>	 <p>12% of global generating capacity from DG by 2025</p> <p>65% of DG investments will be distributed Solar PV</p>
	<h2>DIGITALISATION</h2> <p>Digital technologies to provide infrastructure for more flexible, intelligent, connected & responsive energy systems.</p> <p><i>Smart grid, asset optimisation, demand response, automated trading, active energy management, etc.</i></p>	 <p>50 Billion connected devices – or ‘things’ - globally by 2025</p> <p>>\$1 Trillion economic value of IoT impact in energy by 2025</p>

Source: Frost & Sullivan

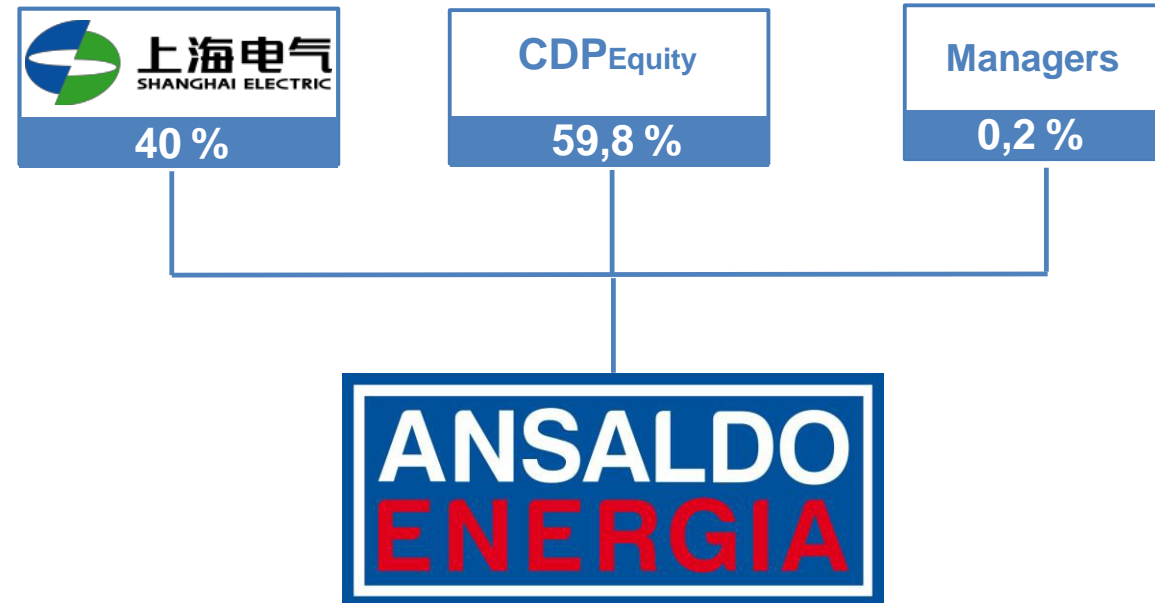
Digital Energy Innovation Hotspots

The highest intensity of innovation is focused on leveraging Internet of Things technology across the energy ecosystem.



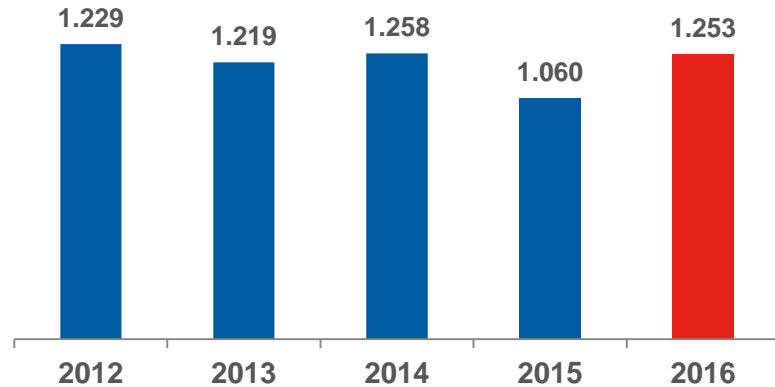
Source: Frost & Sullivan

Ansaldo Energia Shareholding Structure

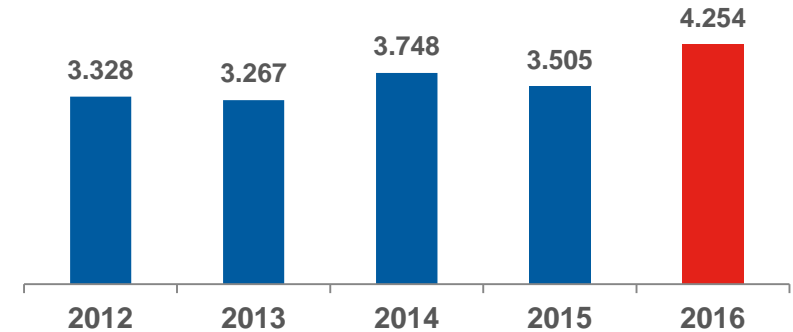


Ansaldo Energia Key Figures (2016)

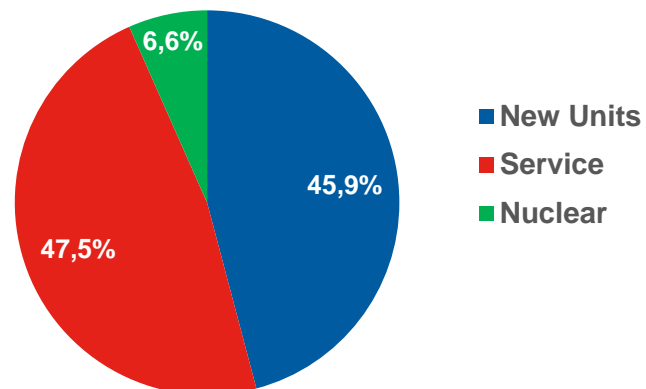
Revenues
2012-2016, M€



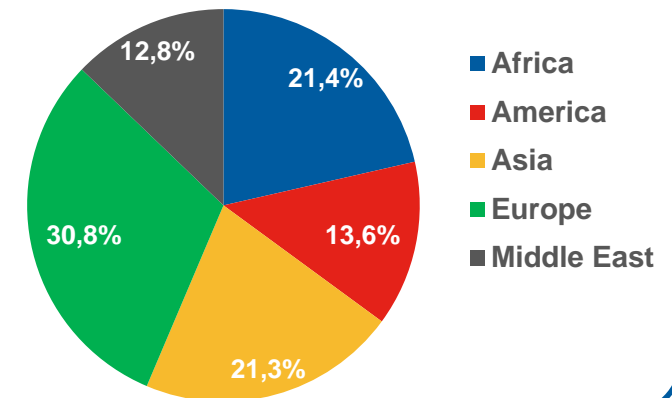
Employees
2012-2016, Headcount



Revenues by Business Lines
2016 Breakdown, %



Revenues by Region
2016 Breakdown, %



Business Overview

Comprehensive product and service range

- A leading Italian technology supplier for the **Power Generation** industry, specialized in the design, production and installation of **Gas Turbines and Steam Turbines** for gas-fired power plants, as well as maintenance and repair services on its **own and third party technology**. **AEN** also selectively supply **Turnkey Gas-Fired Power Plants** with its own technology
- Achieve a sustainable growth by providing a **Flexible** and innovative portfolio of **Solutions** to match global energy demand

Equipment and plants

45.9% of Revenues

EQUIPMENT



- Gas turbines
- Steam turbines
- Turbogenerators

PLANTS



- Engineering, procurement and Construction ("EPC") of selective Gas-fired power plants
- Combined cycles
- Open cycles

Service

47.5% of Revenues

AFTER SALE SERVICE



- Long Term Service Agreements ("LTSA")
- Repairs & spare parts
- Field services
- Upgrades

Nuclear

6.6% of Revenues

NUCLEAR

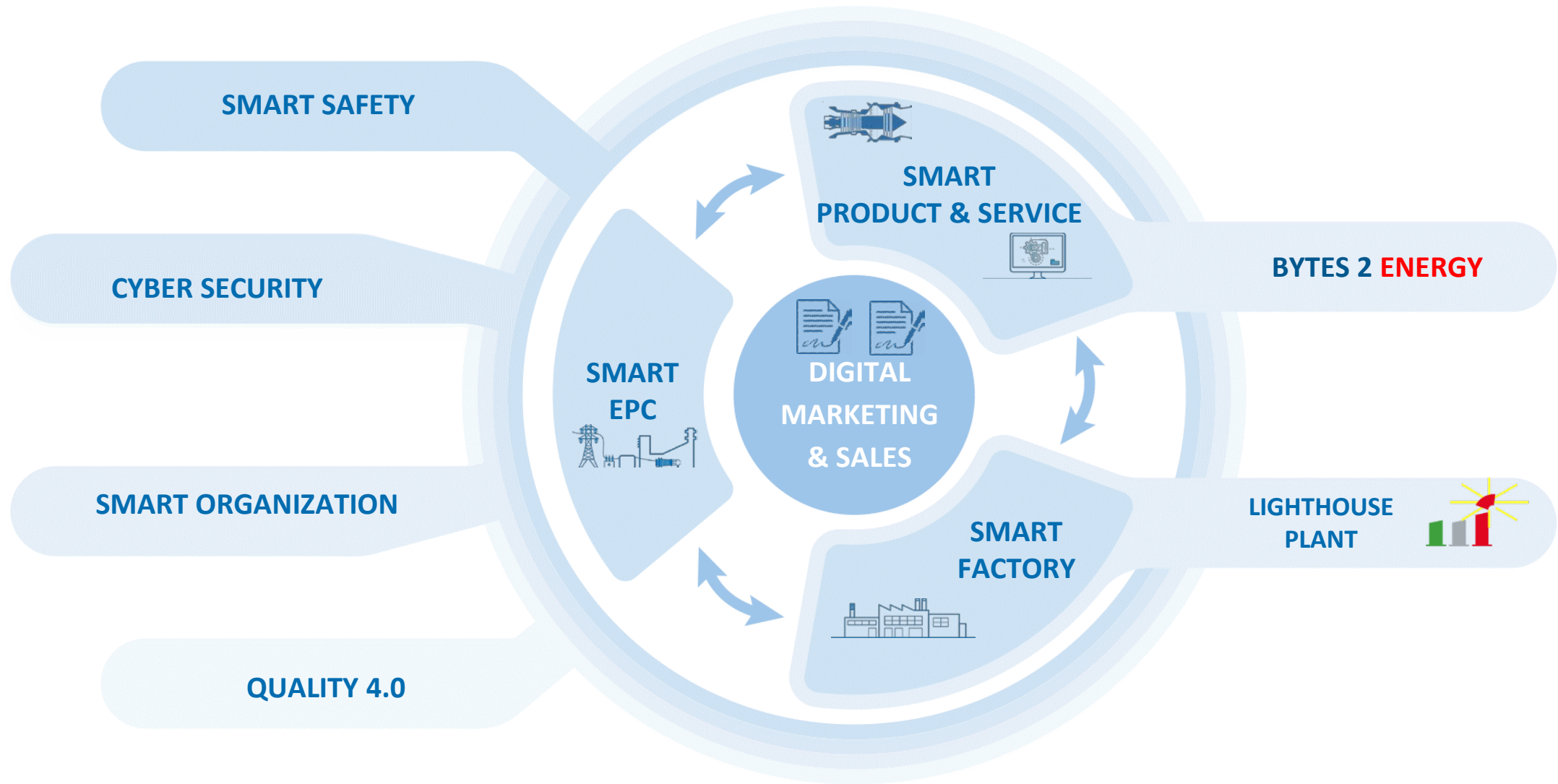


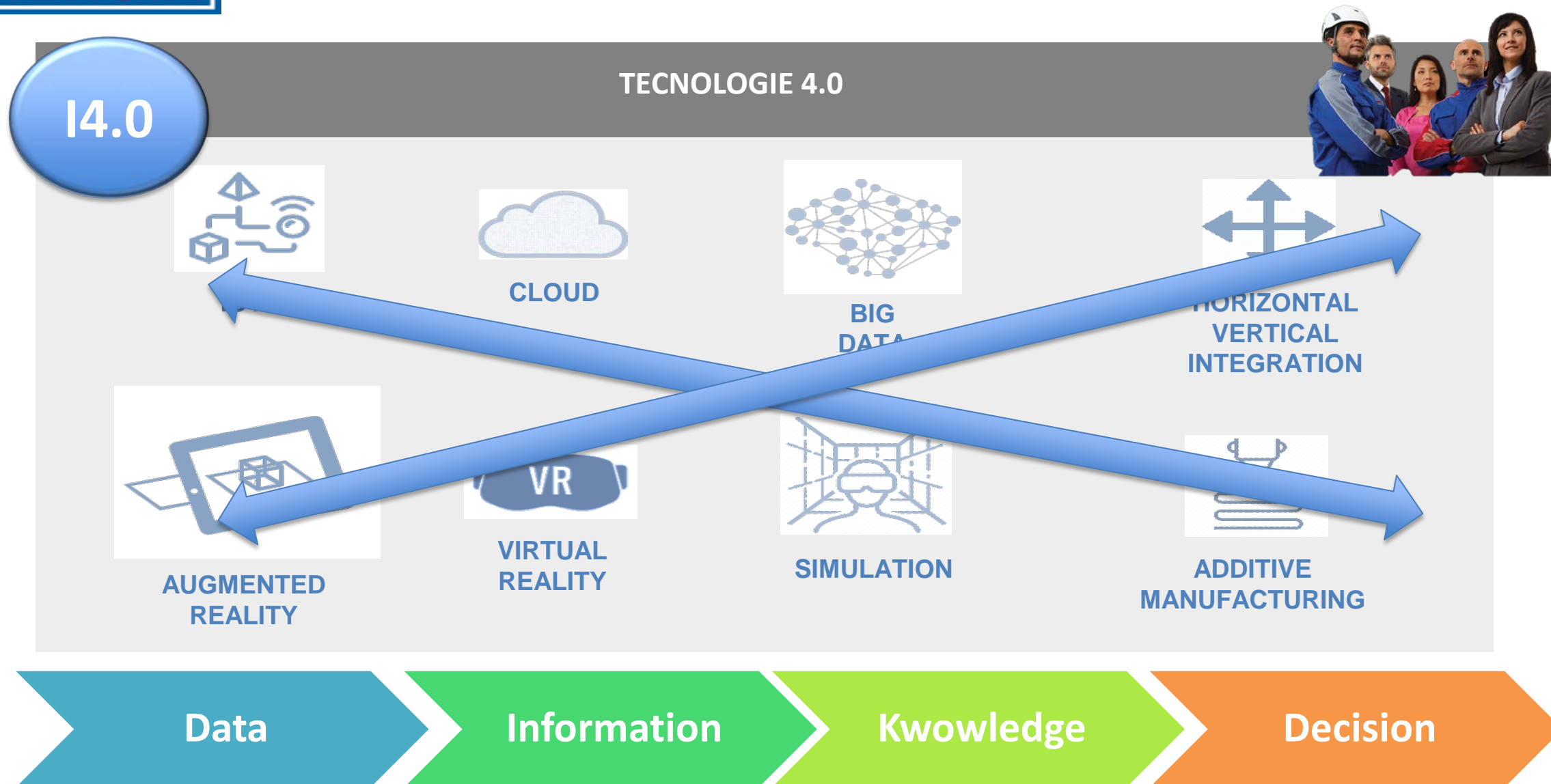
- Engineering services for new and operating nuclear plants
- Engineering and construction of customised machinery for nuclear decommissioning
- R&D activities

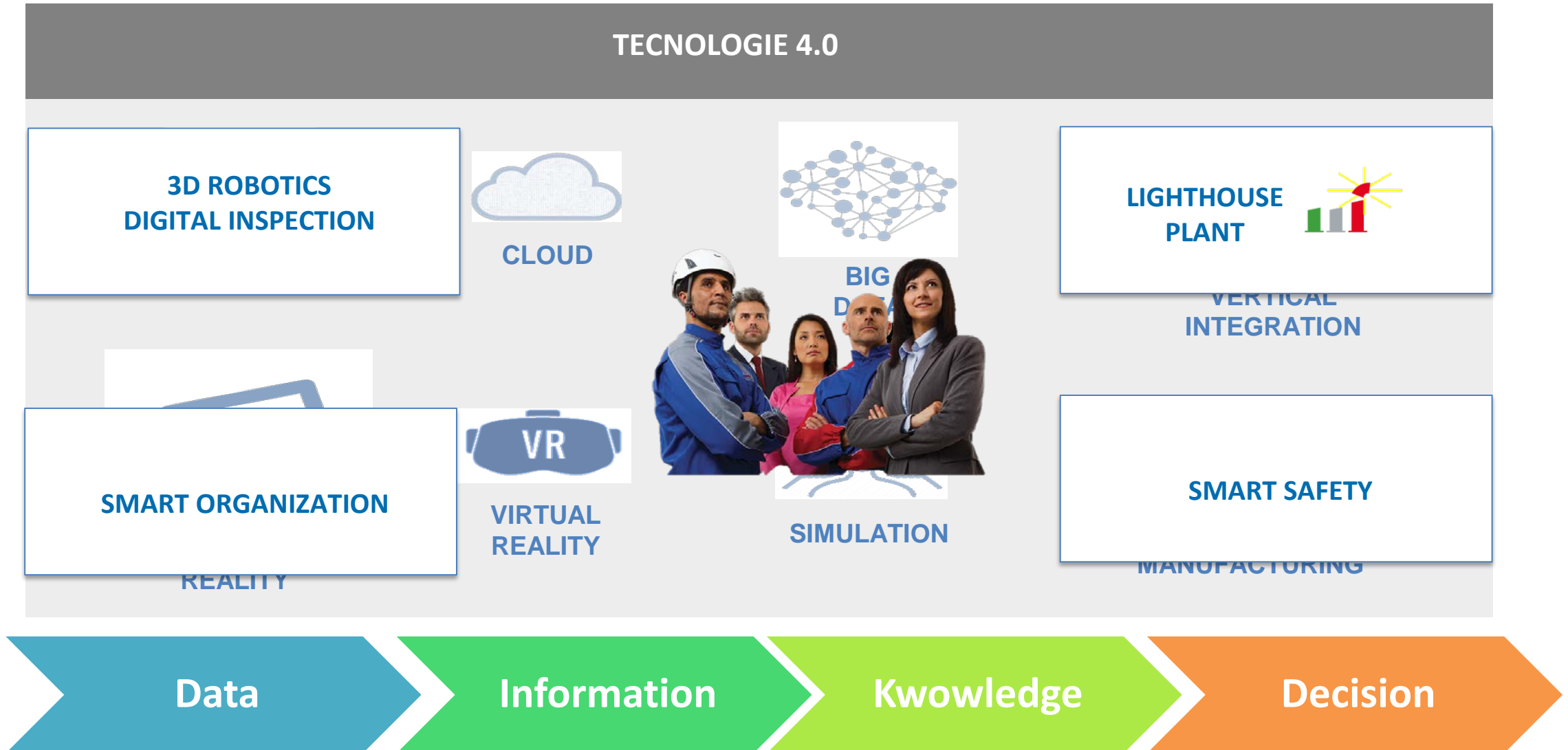


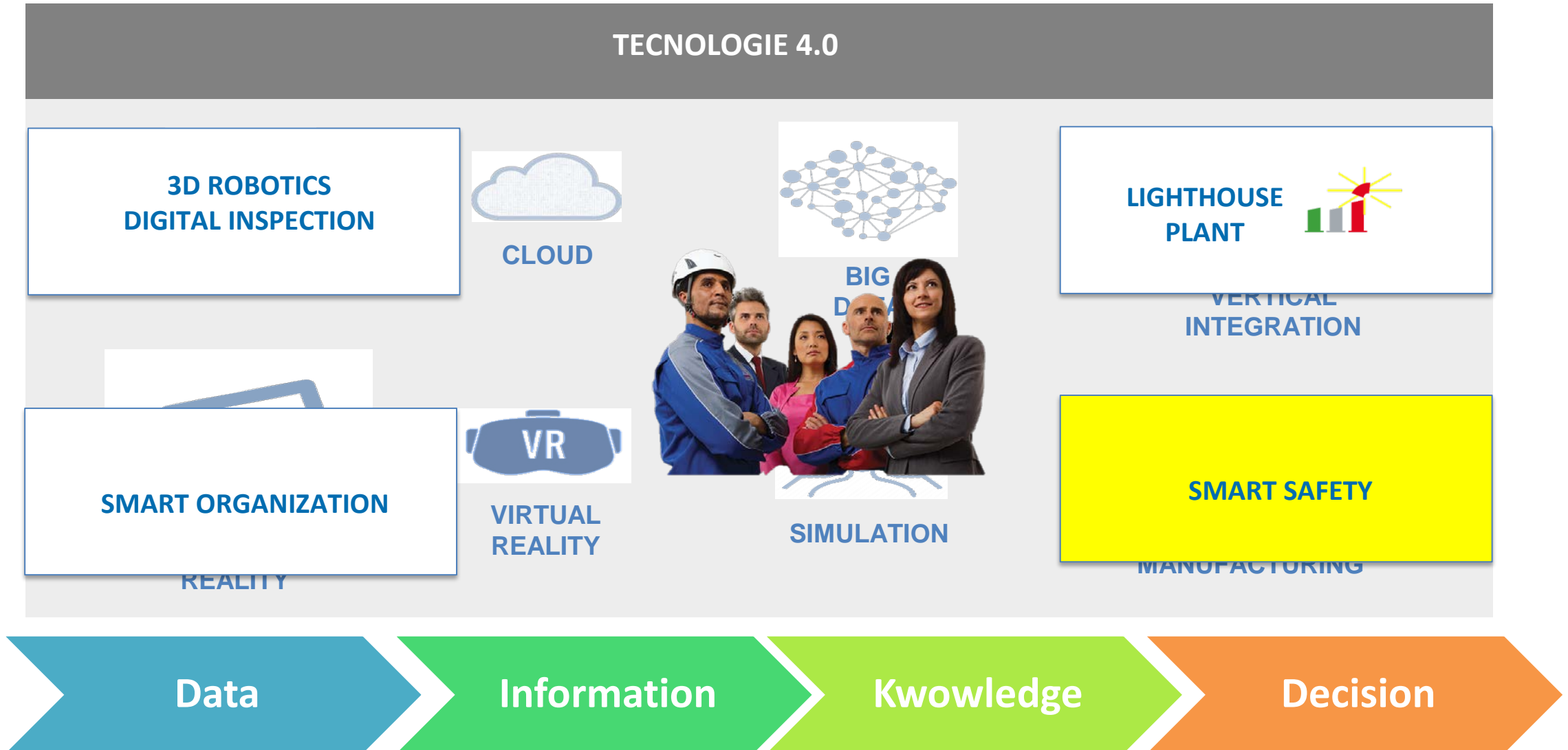
**AEN 4.0: WHEN BITS
BECOME ENERGY**

AEN 4.0 Strategic Roadmap











SMART SAFETY



REAL-TIME DATA COLLECTION
ABOUT THE OPERATORS AND
THEIR HEALTH



ACCESS VIOLATIONS
PROCEDURE VIOLATIONS
POSTURE MONITORING
HEALTH STATE
MAN DOWN



SMART
HELMET



SMART
JACKET

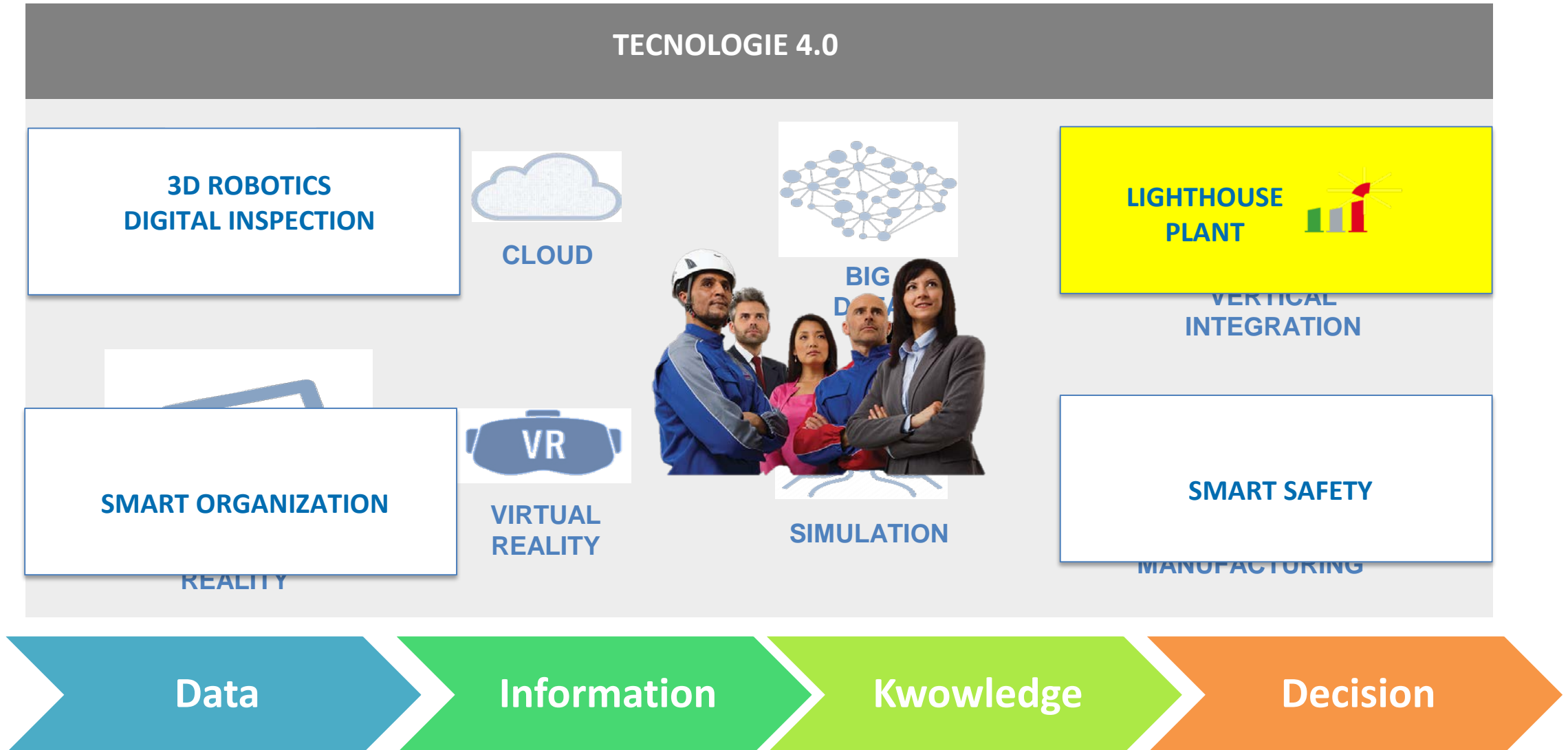


SMART EAR
PROTECTION



POSTURE
BADGE





ANSALDO ENERGIA Lighthouse Plant

Ansaldo Energia è stata selezionata dal **MISE** tramite il **Cluster Fabbrica Intelligente** come il primo dei **Lighthouse Plant** previsti nel **Piano Industria 4.0**.

Tramite il Lighthouse Plant, che gode del supporto finanziario da parte del MISE e della Regione Liguria, Ansaldo Energia svilupperà ed applicherà nel periodo **2018-2020** un **Piano di R&S Industriale** basato sull'applicazione delle principali **Tecnologie Digitali del Piano Industria 4.0** all'intero Processo Manifatturiero dei suoi due **Siti Produttivi di Genova** (Campi e Cornigliano).










ANSALDO ENERGIA Lighthouse Plant

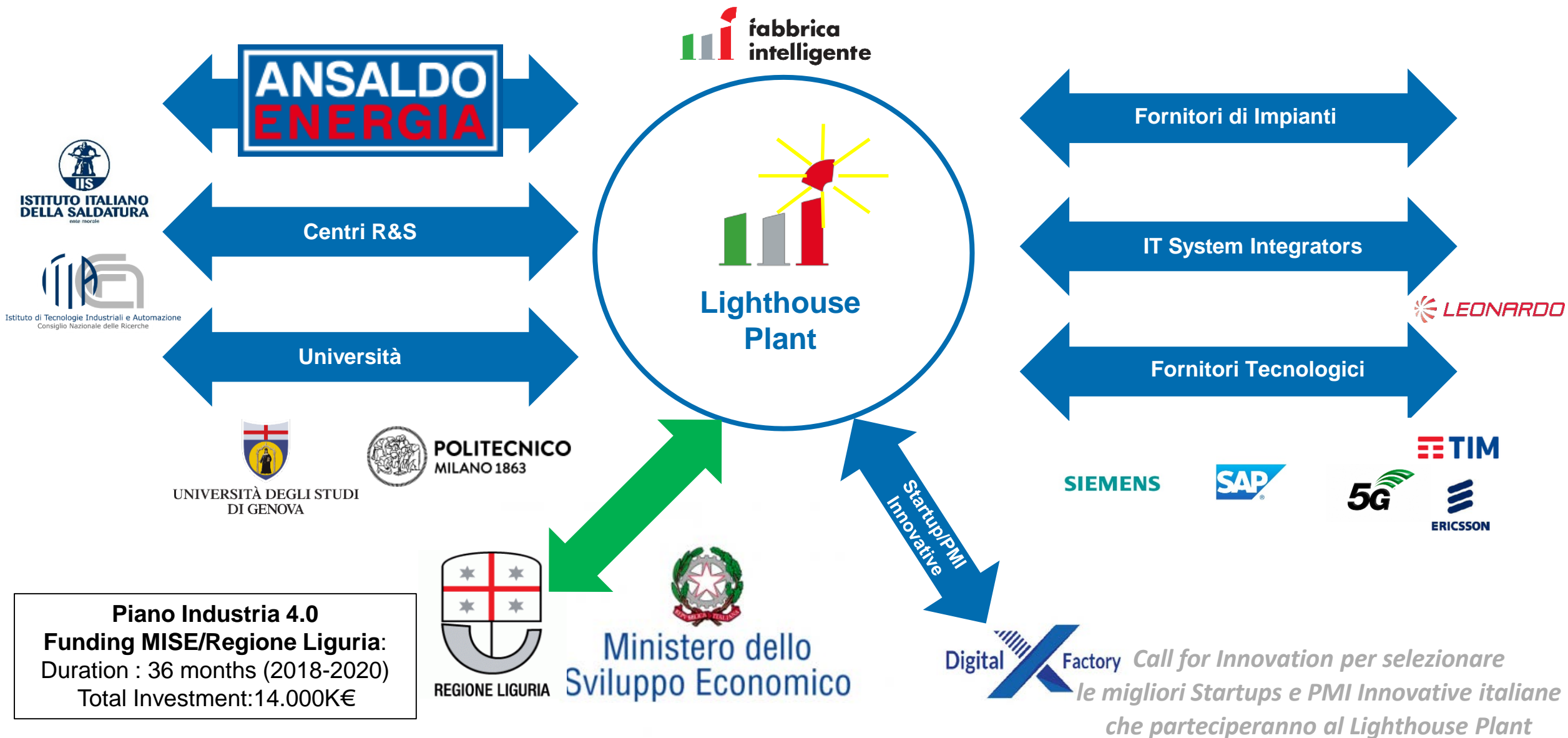




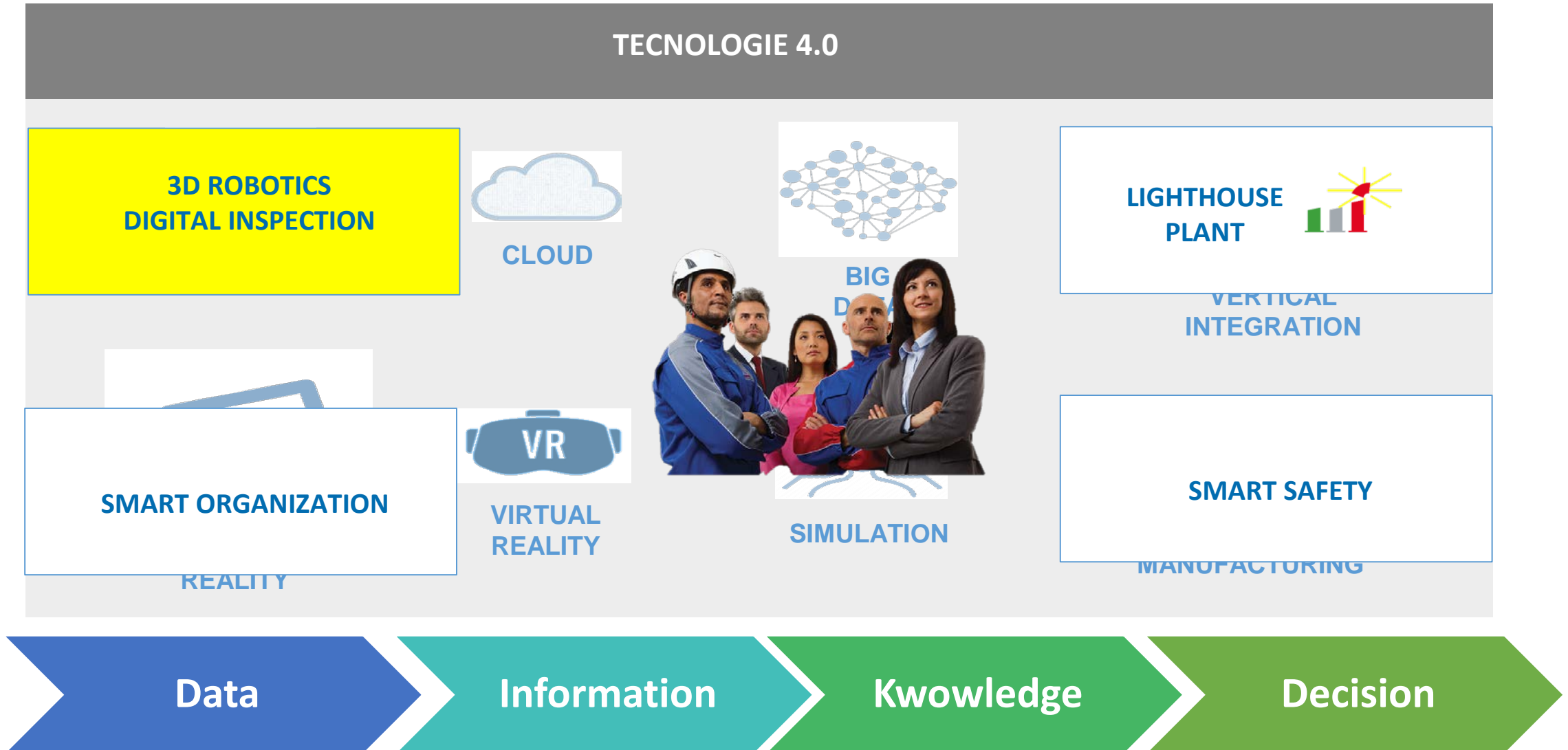
Tecnologie 4.0 per Area Applicativa

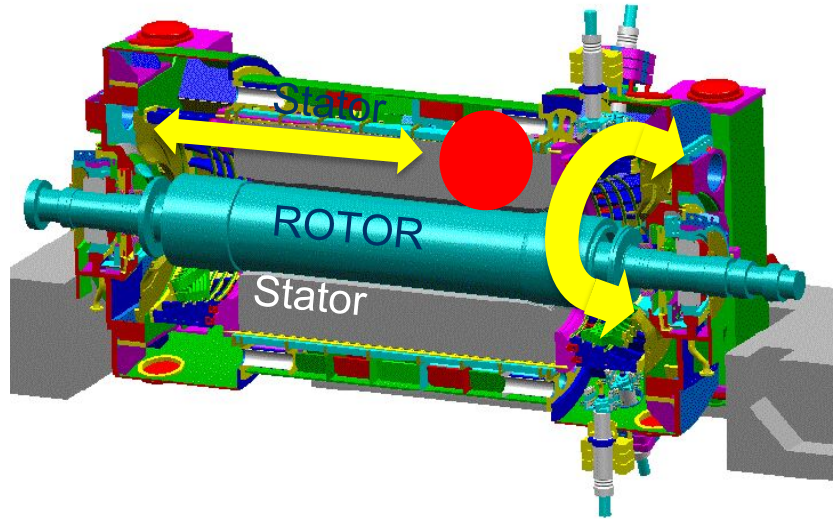
	Gestione Operativa Produzione	Gestione Operativa Fisica	Gestione Prestazioni Assets Produttivi	Gestione Dati Tecnici	Gestione Dati Qualità e Manifat. Additiva	Smart Safety	Smart Training	Cyber Security
 BIG DATA			✓		✓			✓
 IIOT CONNECTIVITY	✓	✓	✓			✓		✓
 AUGMENTED REALITY			✓	✓			✓	
 SIMULATION	✓		✓	✓			✓	
 ADDITIVE MANUFACTURING					✓			
 HORIZONTAL & VERTICAL INTEGRATION	✓			✓	✓			
 CLOUD	✓	✓	✓	✓	✓		✓	✓

Attori Principali

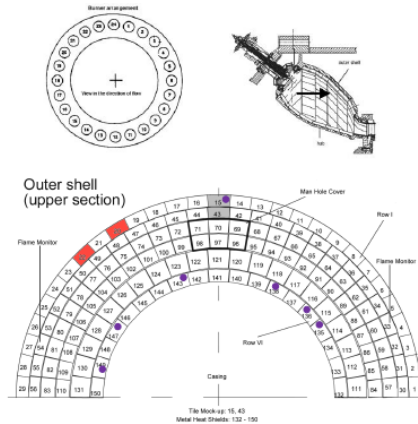
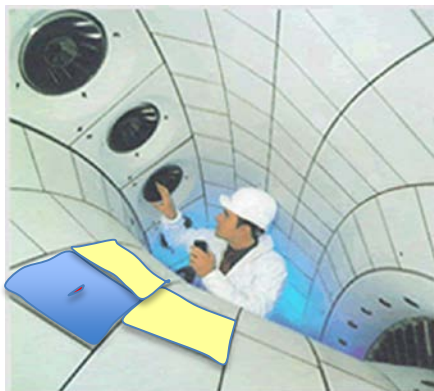


AEN 4.0 - Human Capital in the middle of Digital Transformation





Immersive & virtual reality: 3D and 360 visualisation of the inspection results

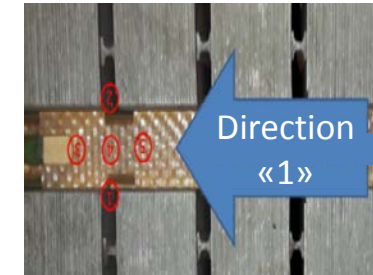


The robotic vehicle

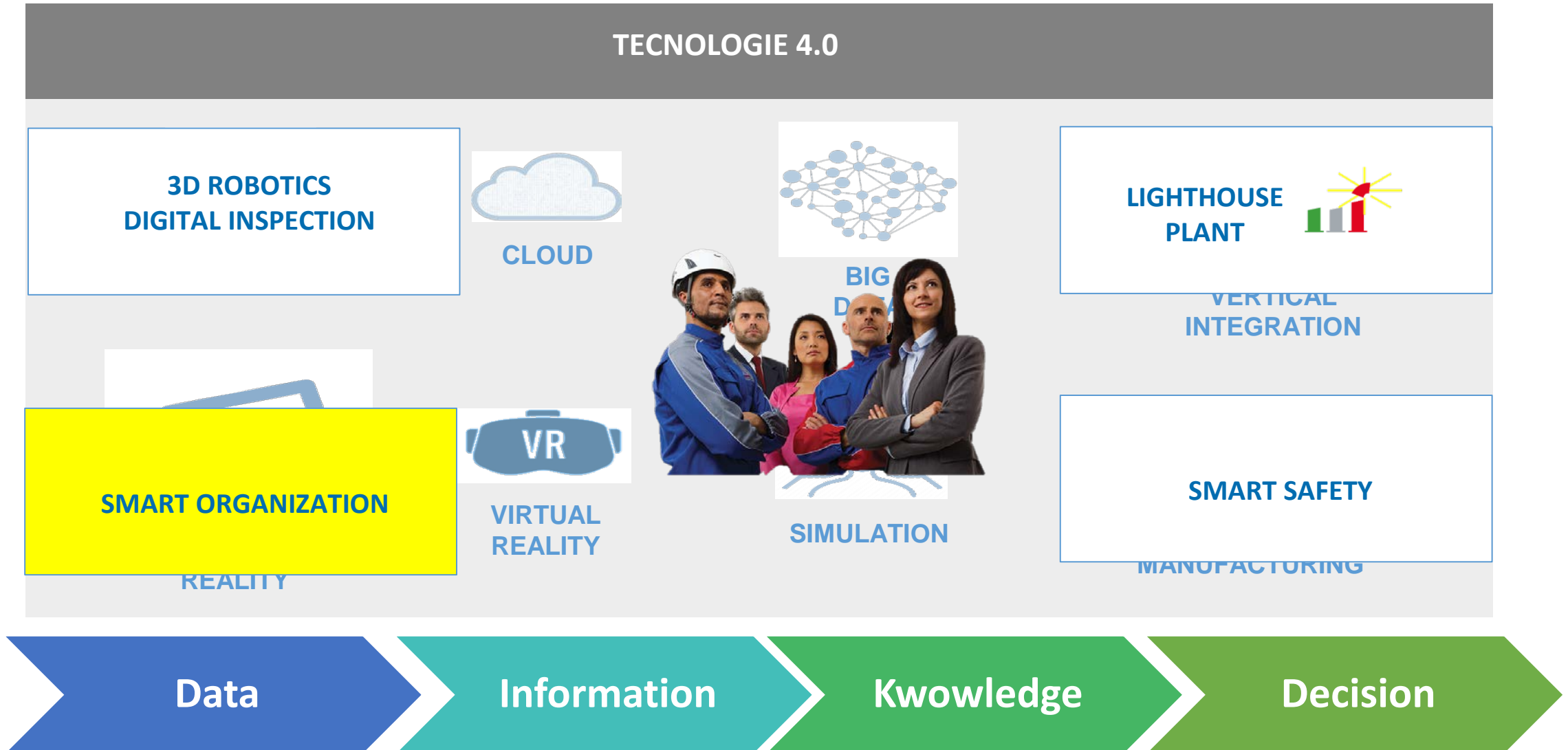


Advanced Multisensorial approach

- Computer Vision through five TV cameras
- microphone for acoustic analysis after mechanical pulse (hammer)
- Other modular sensor

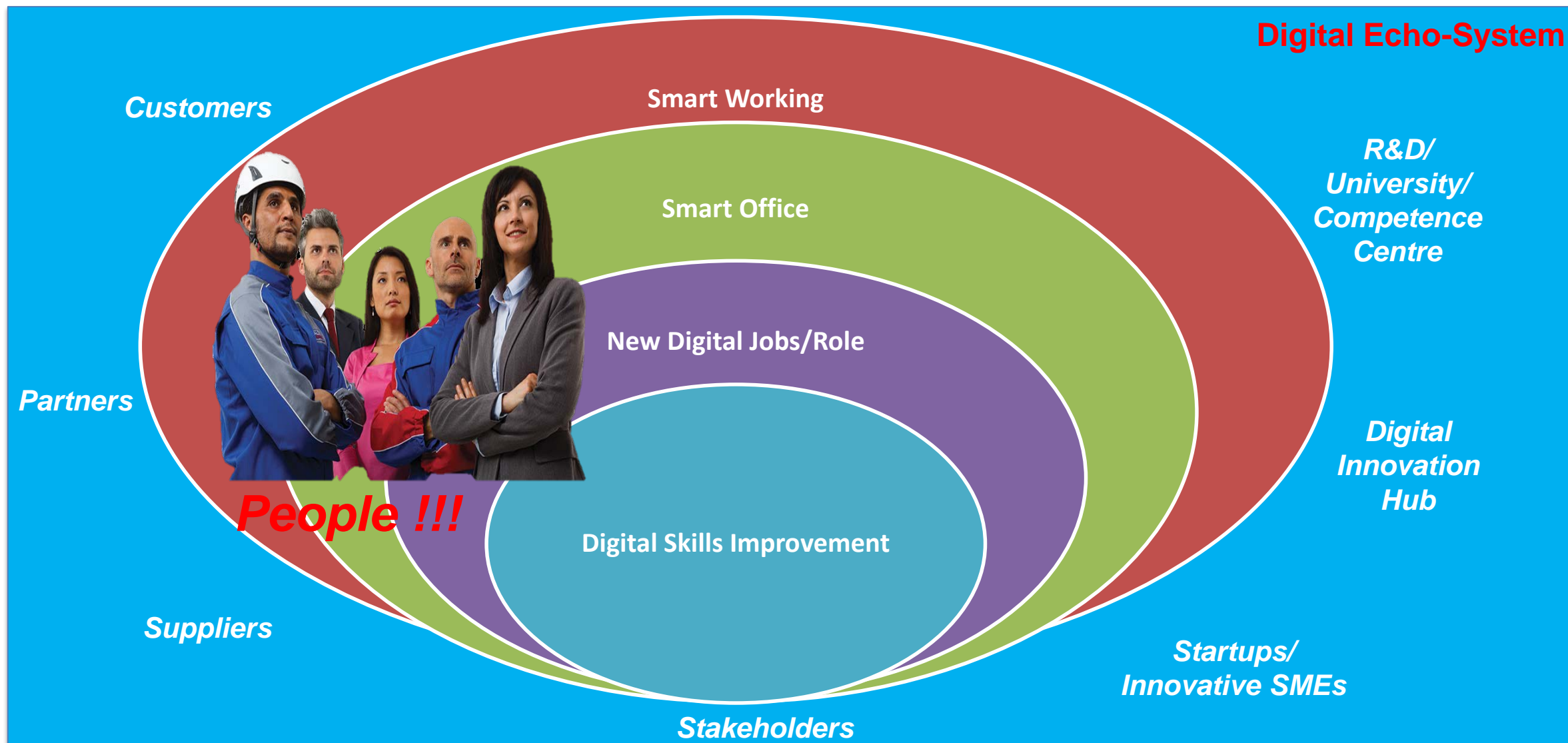


AEN 4.0 - Human Capital in the middle of Digital Transformation



AEN 4.0 - Human Capital in the middle of Digital Transformation

Smart Organization



Grazie per l'attenzione

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