

Interregional partnership for Smart Specialisation on ARTIFICIAL INTELLIGENCE AND HUMAN MACHINE INTERFACE



Leaders

Led by **Emilia Romagna (IT)**, the partnership engages the participation of

6 REGIONS

The aim of the partnership is to foster the adoption of AI driven technologies to improve mechatronics, robotics and human-machine interaction and the acceleration of innovation processes of companies, including SMEs.

Emilia Romagna (IT)



Reference topics



HMI Evolution

- Topic 1:** Cognitive systems and computational cognitive architectures
- Topic 2:** Multisensory Augmented Reality
- Topic 3:** Virtual presence for remote operations



User experience data analytics

- Topic 1:** Physiological and biomechanical data analysis
- Topic 2:** Physical and mental stress/strain detection
- Topic 3:** More comfortable and satisfying working conditions / Factory optimization



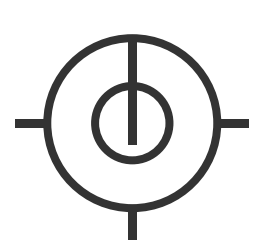
Worker centered design

- Topic 1:** Human-machine intelligent coordination
- Topic 2:** Support to frail users
- Topic 3:** AI driven mechatronics



AI enhanced Cyber-Physical Automation

- Topic 1:** AI-driven Processes
- Topic 2:** AI-accelerated cyber-mechatronics
- Topic 3:** AI-Autonomous and Collaborative Robotics



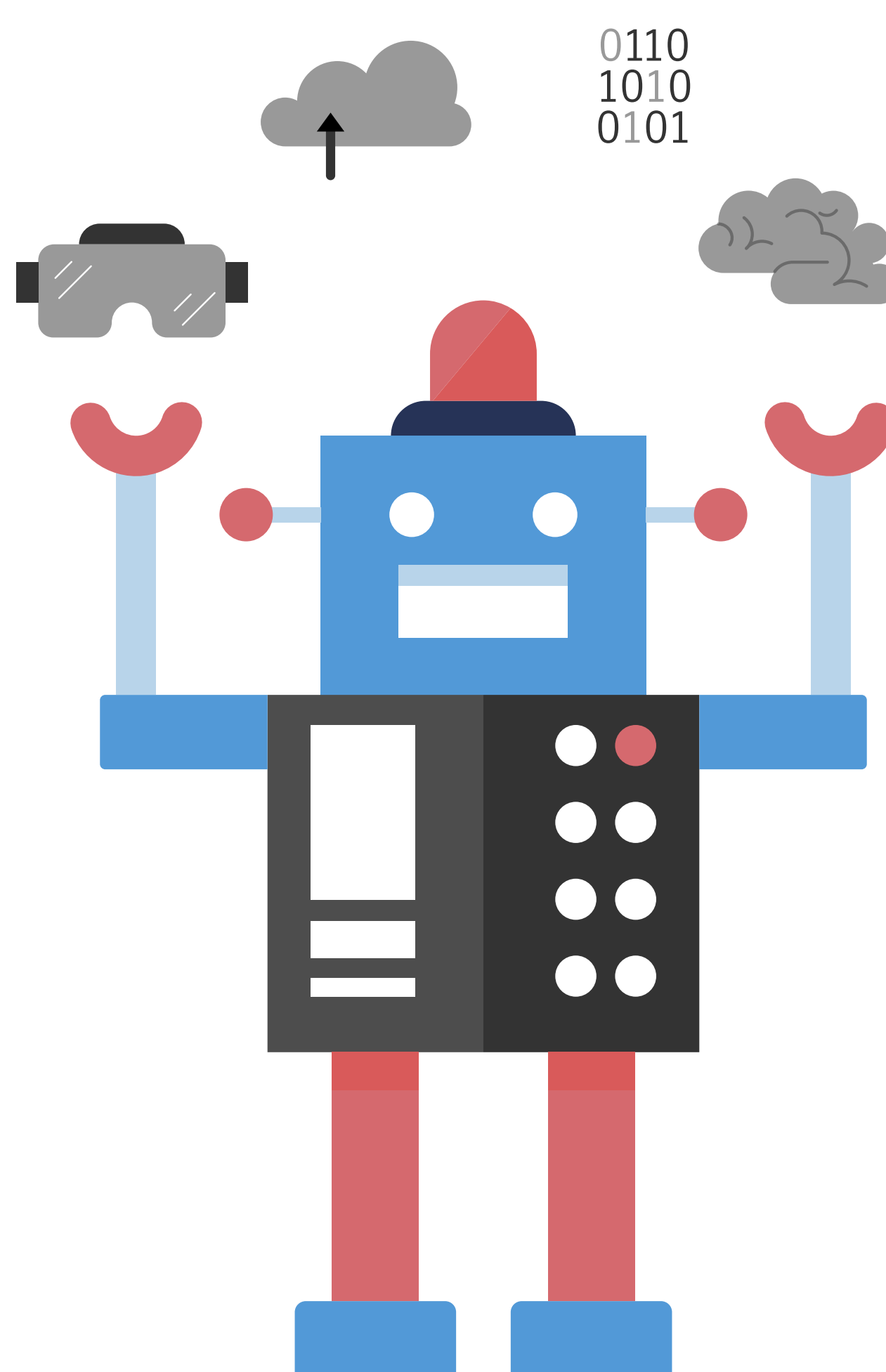
Key factors

1

AI is one of the biggest technological trends transforming every business sector across the world. AI's growing understanding of data is being harnessed to develop innumerable smart applications that can efficiently take critical decisions autonomously and accurately, without human intervention.

3

By empowering machines and applications with human-like cognitive capabilities, **AI enables automated decision making** with very high accuracy and speed based on data driven intelligence, coupled with self learning abilities.



2

AI-enabled technologies include collaborative industrial robots, smart 3D printers, CNC machines, robotic arms, and wearable devices. These enabling technologies will allow faster decision making, process efficiency, greater scalability, and facilitate manufacturing of innovative products.

4

AI-driven HMI and Robotics able to exploit advanced perception strategies (e.g. computer vision) allow the teaming up of humans and machines in a fast, safe and effective way, transforming a production environment.

