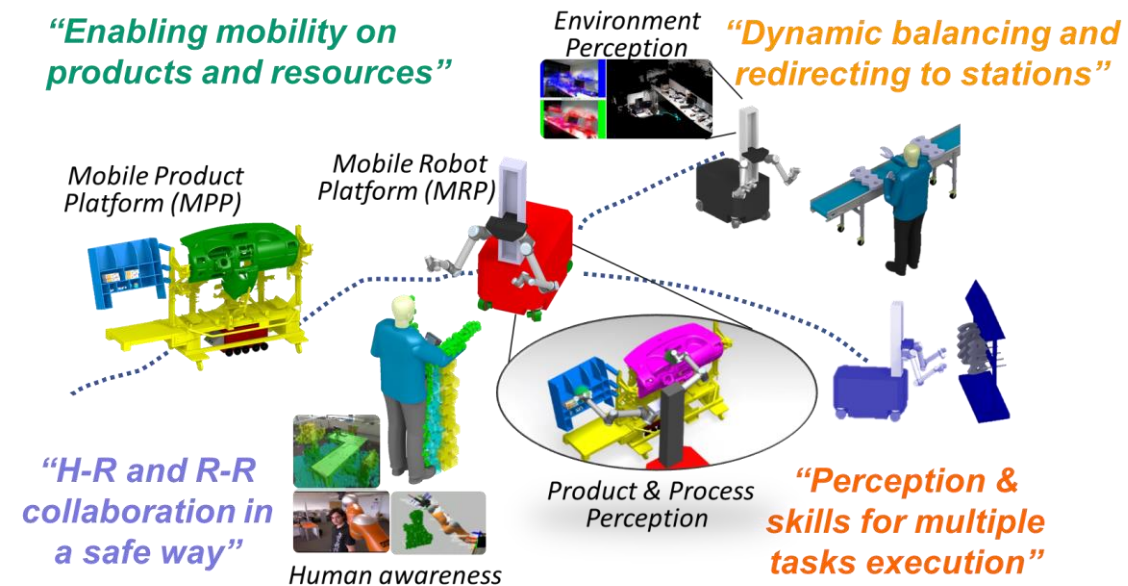


PROJECT APPROACH



 thomas-project.eu



Mobile dual arm robotic workers with embedded cognition for Hybrid and dynamically reconfigurable Manufacturing Systems



THOMAS EU project has received funding from the EU Horizon 2020 research and innovation programme under grant agreement No: 723616





- ▶ Dual arm mobile robot workers for:
 - ✓ Complex geometry parts' manipulation
 - ✓ Screwing operations' execution
 - ✓ Assisting human operators
- ▶ Human and Robot working in the same fenceless environment
- ▶ Mobile Product Platforms carrying the parts to be assembled

Automotive Use Case

- ▶ Dual arm mobile robot workers able to perform:
 - ✓ Drilling operations
 - ✓ Surface preparation operations
 - ✓ Riveting inspection operations
- ▶ Online re-scheduling of human and robot tasks among the different workstations
- ▶ Easy CAD based robot programming tools



Aeronautics Use Case

THOMAS vision is to create a **dynamically reconfigurable shopfloor** utilizing **autonomous, mobile dual arm robots** that are able to **perceive** their environment and through reasoning, **cooperate** with each other and with other production resources including **human operators**.

TARGET

- ▶ Improve job quality for human operators in EU factories
- ▶ Increased production flexibility level driving to high quality products able to fulfil customer needs
- ▶ Provide easy to use/program automation solutions which help SMEs to advance their production techniques in a sustainable way
- ▶ Exploit scientific research prototypes' and enhance existing developments for their integration in real manufacturing environment

THOMAS VISION

- ▶ Reconfigurable factories activated by digital model-based decision-making systems
- ▶ Adaptation of the robot behavior thanks to environmental perception
- ▶ Fenceless working environments where mobile robots and humans can seamlessly co-exist and collaborate depending on the production needs
- ▶ Global communication and synchronization framework for data exchange and communication between resources

CONSORTIUM

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