List of equipment

LMS is running the robotic group activities in a fully equipped Machine shop, where the following robotics cells are installed and used for research.

- 1x COMAU NJ 130 robot
- 1x COMAU NJ 370 robot
- 1x COMAU Smart Dual Arm robot
- 2x COMAU Smart6 robot
- 2x Robot Manual Guidance Devices
- 2x UR10 Universal Robots
- 2x PILZ SafetyEye
- PLC Siemens Simatic S7
- PILZ PSS 4000 safe PLC
- PILZ PSS 3000 PLC
- Printer BFB 3D touch
- 1x EON ICrystal holographic display
- Schunk grippers (PG70 & EGN160)
- 1x Vuzix STAR 1200XL AR glasses
- 1x Robotino mobile robot
- Industrial cameras - Basler
- 2x Kinect Sensors
- 2x Industrial Voice cancelling headsets
- Leap motion sensors
- 3 Wall CAVE system with 3x BARCO RLM-W12 projectors and 4x VICON Bonita 3 tracking cameras
- Oculus Rift and Touch controllers
- Microsoft HoloLens
- EPSON MOVERIO BT-200 AR glasses
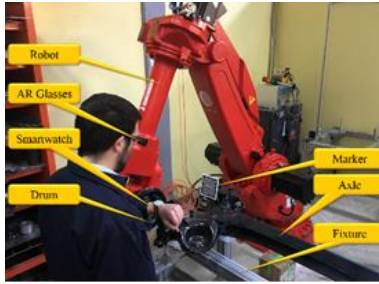- Vuzix STAR 1200XL AR glasses

High payload flexible cooperating robots cell

Dual arm robot for assembly/handling

Industrial robots for dexterous operations

Human robot collaboration using AR and wearable devices

UR10 collaborative robot for assembly applications

UR10 robot using simplified interaction means for reconfigurable operations

List of software

In terms of software tools, the LMS Competence Center has available research and industrial software, such as Product development (Pro/Engineer, CATIA), for process planning and simulation (DELMIA, Process Simulate, IMPACT, WITNESS. ROBCAD, Invision, WinMod), for integration/communication and visualization Virtools, Unity 3D, Vuforia for the development of Virtual and Augmented Reality applications.

List of services

The LMS Competence Center services are divided in three categories, and have been formed such as to ensure support to business development, professional networking, training programs and promote infrastructure and equipment-based services:

Technical services

- o Manufacturing Process Simulation
- o Robotic Simulation
- o Process experimentation
- o Process optimization
- o Process planning development
- o Process planning optimization
- o Product design/ development / integration
- o Robotics equipment development and assessment
- o Robotics equipment commissioning
- o Production line simulation/ development
- o Production monitoring
- o Robotics cell validation using VR/AR technologies

Training services

- o Demonstration and training sessions on multiple robot types (high payload industrial robots and / or lightweight collaborative robots)
- o SOPs development
- o On job training
- o Workshops
- o Seminars
- o Webinars
- o Access to knowledge repository (basic research)

Consulting and business services

- o Technical consultancy for setting up robotic applications
- o Implementation roadmap and proof of the proposed concepts
- o Product marketing planning
- o Business plan development
- o Patents
- o Ecosystem building and networking: Investigation and set-up of bilateral synergies for "know-how" and technology transfer from the one member-company to the other
- o Dissemination and awareness