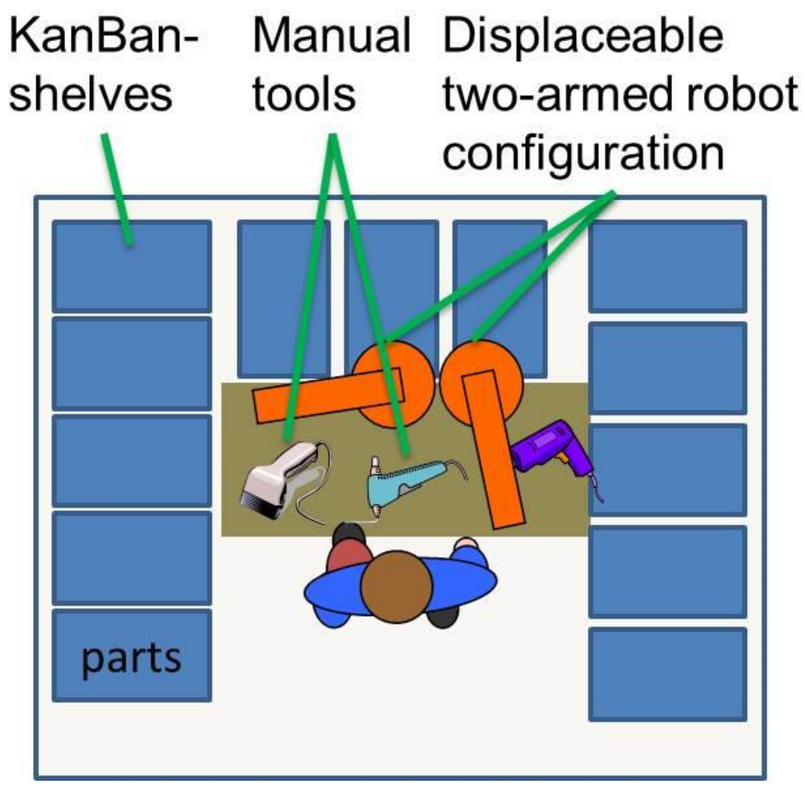
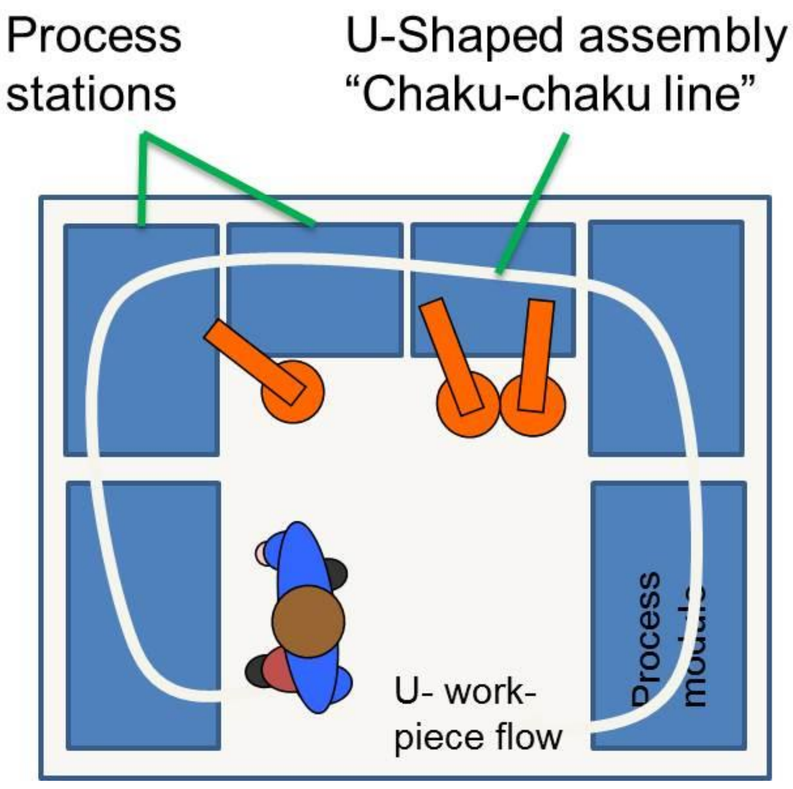
Lean Intelligent Assembly Automation (LIAA)

Humans and robots truly working together in assembly tasks

LIAA aims to develop a symbiotic human-robot-cooperation framework that is supposed to combine the advantages of robots for achieving high productivity in structured environments and the capability of humans to adapt quickly in unstructured environments.



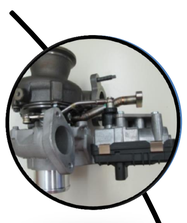


LIAA aims at developing a framework that allows for the cost effective use of robot assistants on the assembly shop floor, based on lightweight robots available on the market, low-cost sensors, and open source robot control ă ƨ Ŧ ű ø ł· NJ Ŝ ɛ

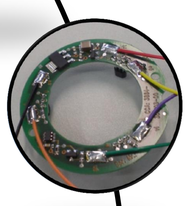
Pilot Cases

LIAA – not just a thought experiment

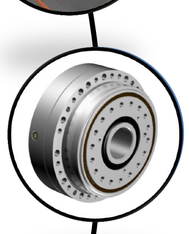
The LIAA Framework will be based on extensive experience of partners and will be applied to the following five real pilot cases:



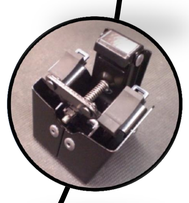
TurboCharger (Automotive)
– Pick&Place, Screwing, Clipping



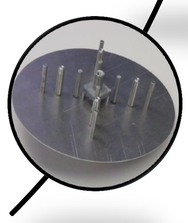
Hall Sensor (Electronics)
– Pick&Place, Soldering



Main Bearing (Mechatronics)
– Pick&Place, Glueing, Screwing



Roof Rack (Automotive)
– Pick&Place, Riveting



Radiant Elements (Antennas)
– Pick&Place, Riveting, Screwing

Technologies

LIAA – an Open Source Framework

The framework is supposed to be Open Source with a Lesser General Public License.

- Hybrid Workplace Design Tool
- Dynamic Task Planning & Resource Allocation
- Multi-Modal Programming Toolbox
- Robotic Assembly Skills
- Safe Execution Environment

LIAA has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 608604

For more Information visit:
www.project-leanautomation.eu