Informal Specifications for Industrial Computer Engineering (ICE) Laboratory

The ICE Lab will consist of a production line for assembly and disassembly of small components for fine mechanics. These pieces could be further worked in the production line. The lab will include a set of components as shown in the following scheme:

- **MAG**: repository for semi-worked pieces. They are picked up from a handling gear.
- **3D and CNC**: mechanical processing systems – additive (3D) and subtractive (CNC).
- **QA**: quality control systems.
- **Assemb**: robotic assembly line.
- **Mob Rob**: robotic trolley to bring the finished product to a disassembly line or the warehouse.
- **Disassemb**: Disassembly line – the reusable parts of the product are put back in the warehouse.
- **Custom**: specific machines for the partner companies of the project.

The overall system should be managed by an embedded set of software for design and planning of the production, and for the simulation of the digital twin of the production line. This one should permit the simulation of parts of the production not physically present in the production line and satisfy the OPC-UA standard.

The production line should be installed in a room of 50/60 m².

The lab will be bought via a selection of companies, which will answer to an expression of interest. The overall supply will be divided in blocks with 200000 Euro value maximum.

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