MicroLean LAB: EXPERIMENTING A NEW INDUSTRIAL WORLD

Application for the manufacturing industry - agile high value-added micromechanical manufacturing

SUMMARY

MicroLean Lab offers stakeholders in micromechanical manufacturing to experiment the changes induced by digitalization in an industry defined by specific know-how. Characteristic for that are products with quality, precision and reliability requirements such as watches, jewels, medical implants and prosthesis or connectors.

CURRENT SITUATION

Started in 2019, the project is planned for 6 years with a first proof of concept exhibited in April 2020 through a micro-factory with at least three “apps” and an agile automation concept. The basis of the infrastructure will be developed according to OPC-UA protocol and close-loop manufacturing AI algorithms.

PROJECT DESCRIPTION

MicroLean Lab is a public-private platform aimed at developing a connected, autonomous and reconfigurable micro-factory. Imagine a manufacturing starting from the final customer’s need and going back to the last of the subcontractors. This “C2B2B” business model can be tested where all stakeholders are interconnected in order to serve a consumer, who triggers fabrication on demand depending on its own and real needs. To address this challenge an experimentation platform is developed, inspired by the business model of smartphones. A micro-factory hosts “apps” which correspond here to manufacturing technologies, that are reconfigurable according to the production order. These apps are provided through an "Industrial Machine as a Service" approach, i.e. transforming capex into opex.

INDUSTRIE 4.0 – FEATURES

Industry 4.0 allows micromechanical manufacturing to imagine a new industrial world. A real micro-factory interconnected and decentralized is and the key concept including service business models to be realized.

STANDARDIZATION APPROACHES

Like the smartphone business model with its “apps”, the standardization of a micro-factory infrastructure will allow to involve numerous manufacturing technologies. Cheap multi-vendor interoperability is key to success (e.g. asset admin shell).