



Industrie
:: 2025

Micro Lean Lab (MILL) - The Integrated Prototype

F&E Konferenz zu Industrie 4.0

03.02.2021

Vision

- ❑ Micro Lean Lab (MiLL) is an experimentation platform inspired by the smartphone business model that provides the framework for the scientific and technical developments that our partners from the manufacturing industry need
- ❑ Micro Lean Lab has built an Ecosystem of over 20 industrial and research partners (Arc Jurassien)
- ❑ The first materialization of the Micro Lean Lab is a prototype of a Smart Micro Factory
- ❑ The prototype can be seen as a Proof-of-Concept (PoC) of the following paradigms:
 - Digital Manufacturing
 - Smart Machines
 - Modular, flexible and reconfigurable manufacturing systems
 - AI-enabled cognitive manufacturing

The solution building blocks

AI-based part
quality prediction

AI-based machining
Parameters optimization

Closed-Loop
Manufacturing

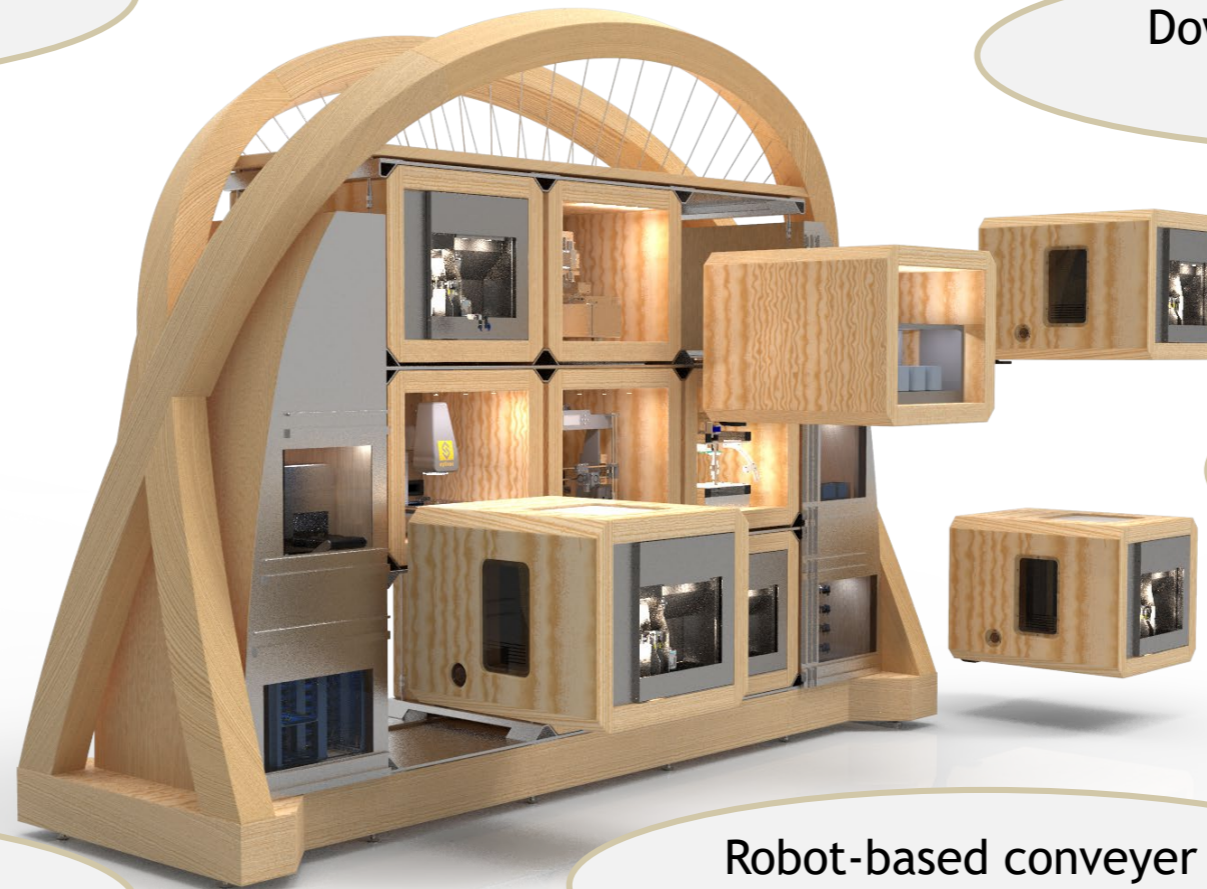
Multi-Agent System based
work order orchestration

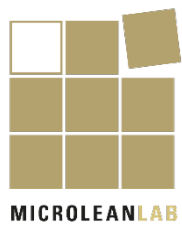
Supporting structure
(Matrix)

Down-sized machining
technologies

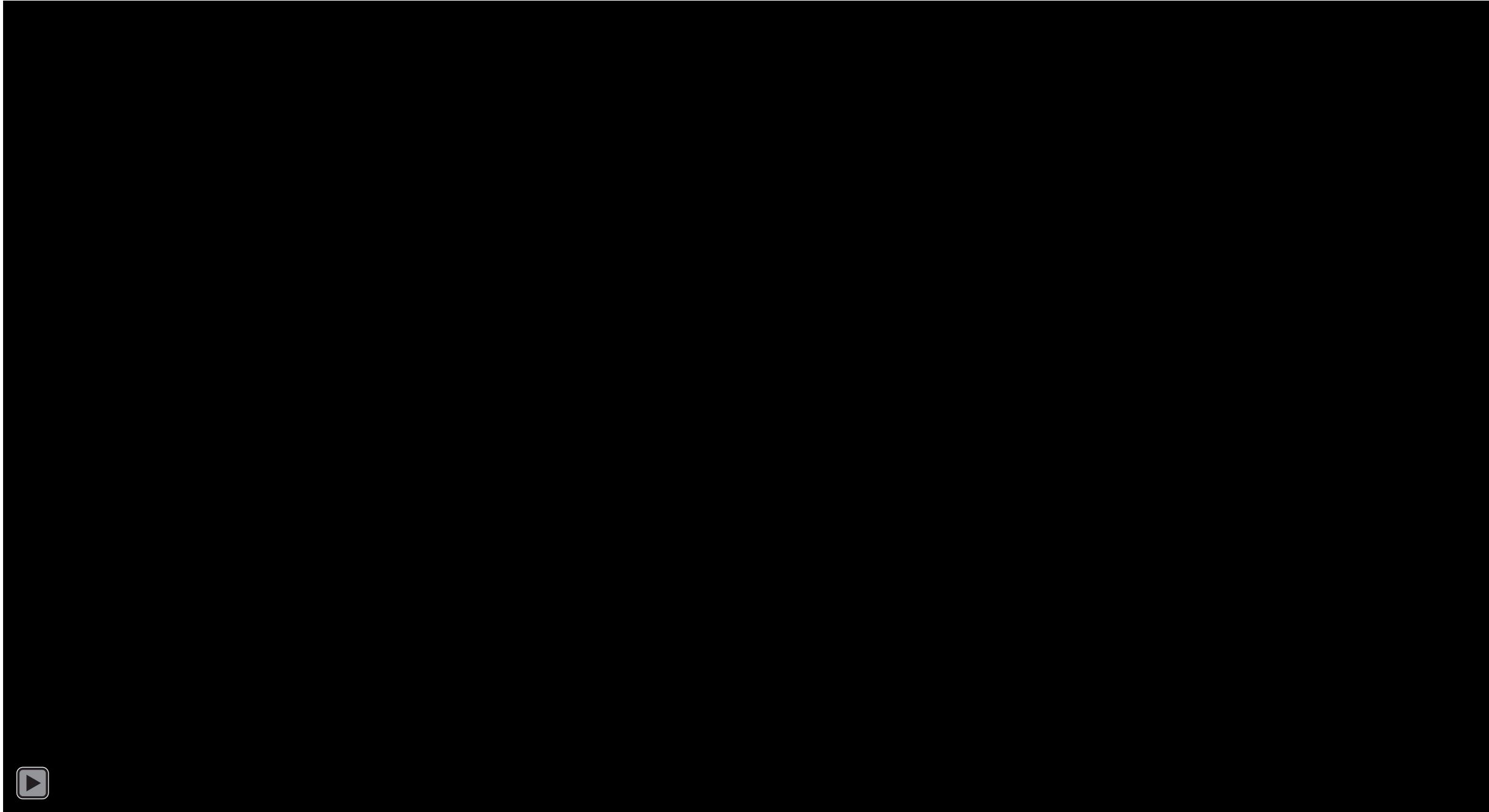
Modular, Plug &
Produce modules

Robot-based conveyer &
Manipulation system



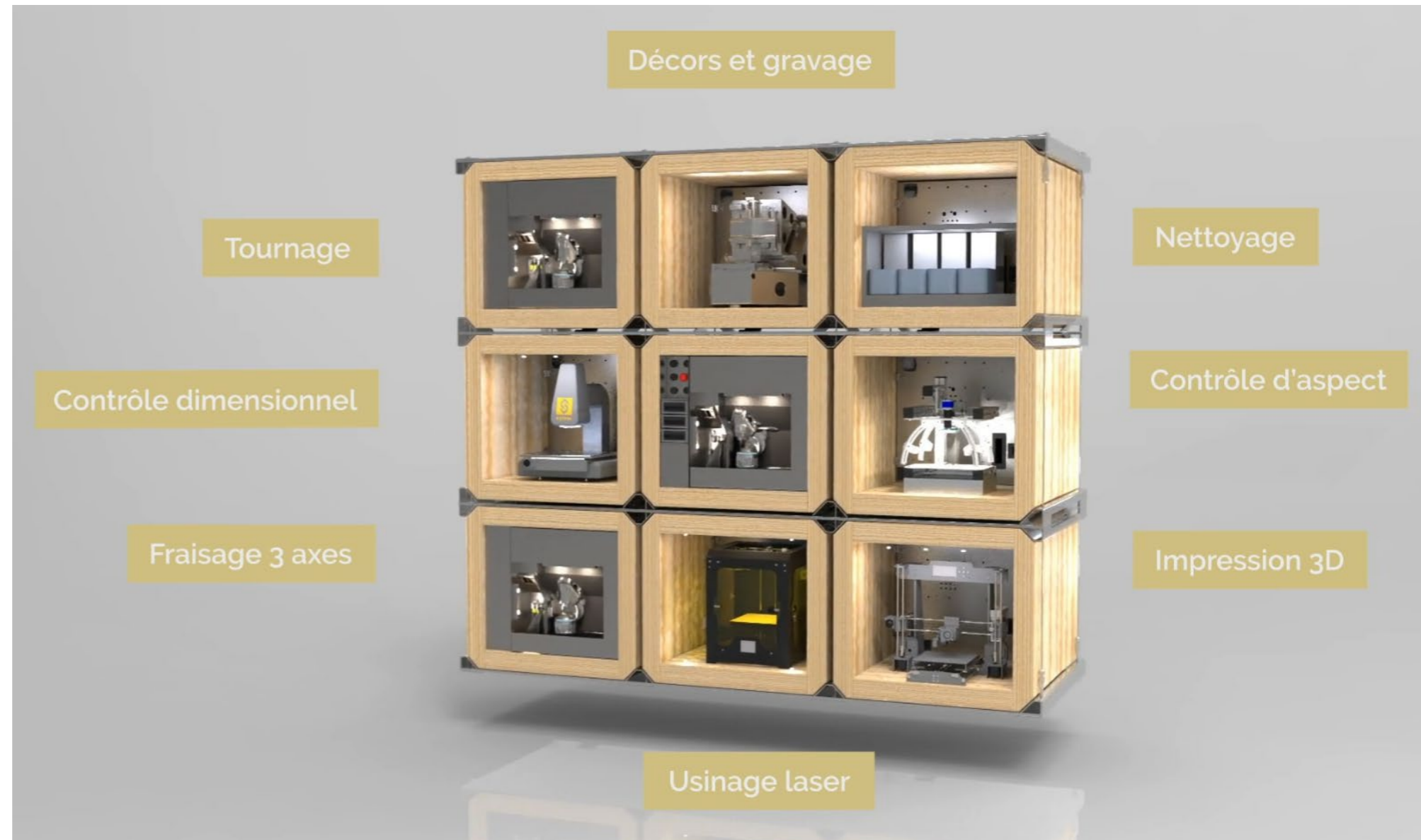


The running prototype



Next steps

- ❑ Integrate further manufacturing technologies
- ❑ Implement more local autonomy for each manufacturing technology
- ❑ Implement more global autonomy for orchestrating more complex manufacturing orders
- ❑ Horizontal & vertical conveyer system



Tank you for you attention !

For more information, please contact

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<https://microleanlab.ch/en/>