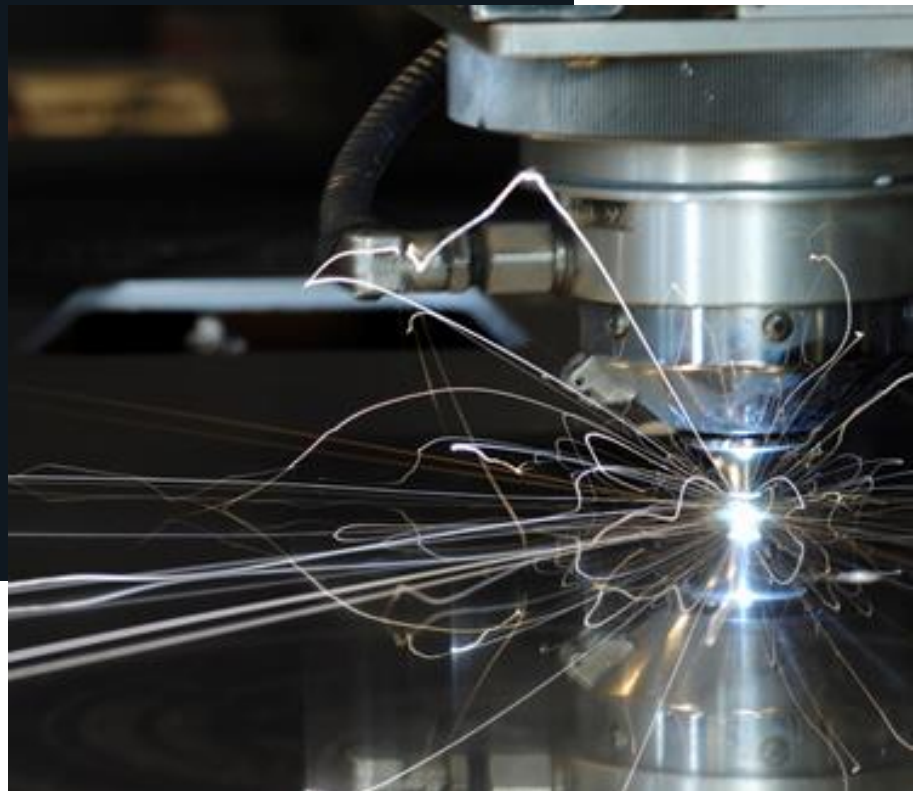


# Laser Machine Embedded Artificial Intelligence

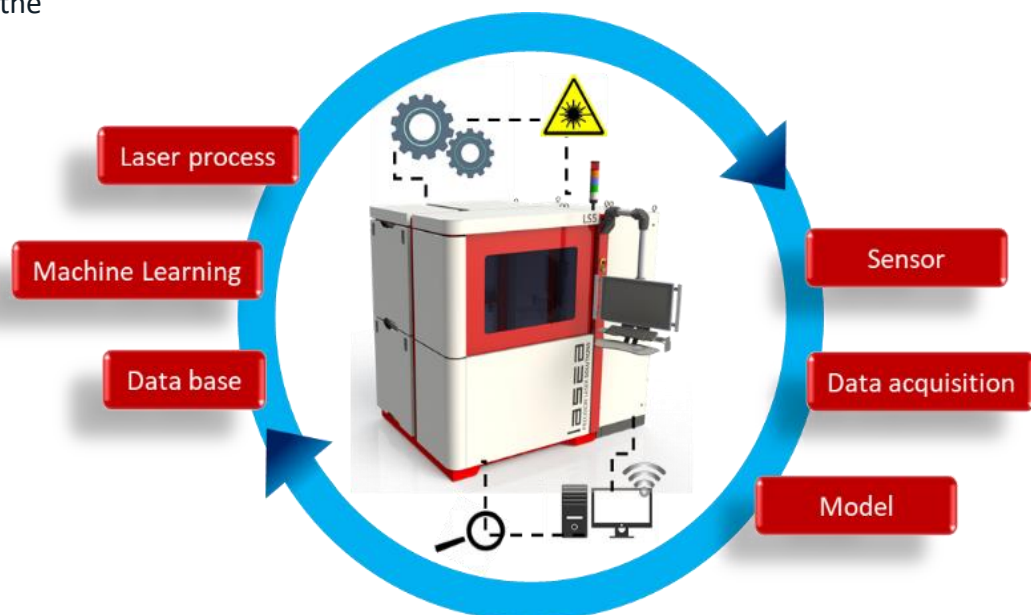
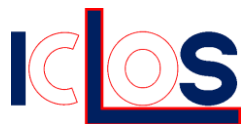
35% Productivity  
Improvement  
(prevision)

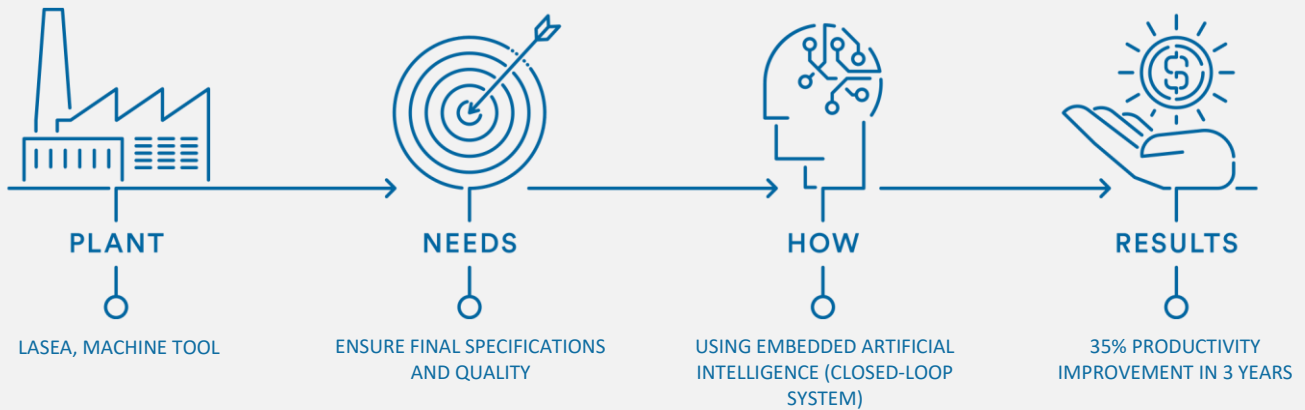


## Benefits

**Ensuring** the final workpiece specifications and quality.

**Supplying** a new solution able to quickly learn and improve by itself thanks to the implementation of machine learning functionalities.





## Context

As a leader in industrial Artificial Intelligence techniques, **PEPITE** has partnered with **Lasea** (Liège Belgium) to collaborate on the **ICLOS project** (Intelligent Closed-loop Laser Operation System).

The objective of the ICLOS project is to develop a **closed-loop** system using embedded **Artificial Intelligence** in order to automate the laser machining process. This automated and intelligent machine will lead to improved laser process **quality** and **productivity**.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 777455.

## Previous situation

Laser parameters were defined **by parametric processing studies** by scanning all possible combinations between numerous parameters (e.g.: laser beam power, speed, frequency, etc.) to achieve the desired results. These manipulations are often time-consuming and machining possibilities are limited.

## Current situation

In a rapidly laser industry, the ability to quickly **identify optimal laser parameters** provides a **key competitive advantage**.

The ICLOS project offers **broader possibilities** in terms of laser parameters configuration and machining results. By embedding a 3D measurement system and Artificial Intelligence within an advanced machining control system, the ICLOS project provides higher flexibility to the laser manufacturing process.