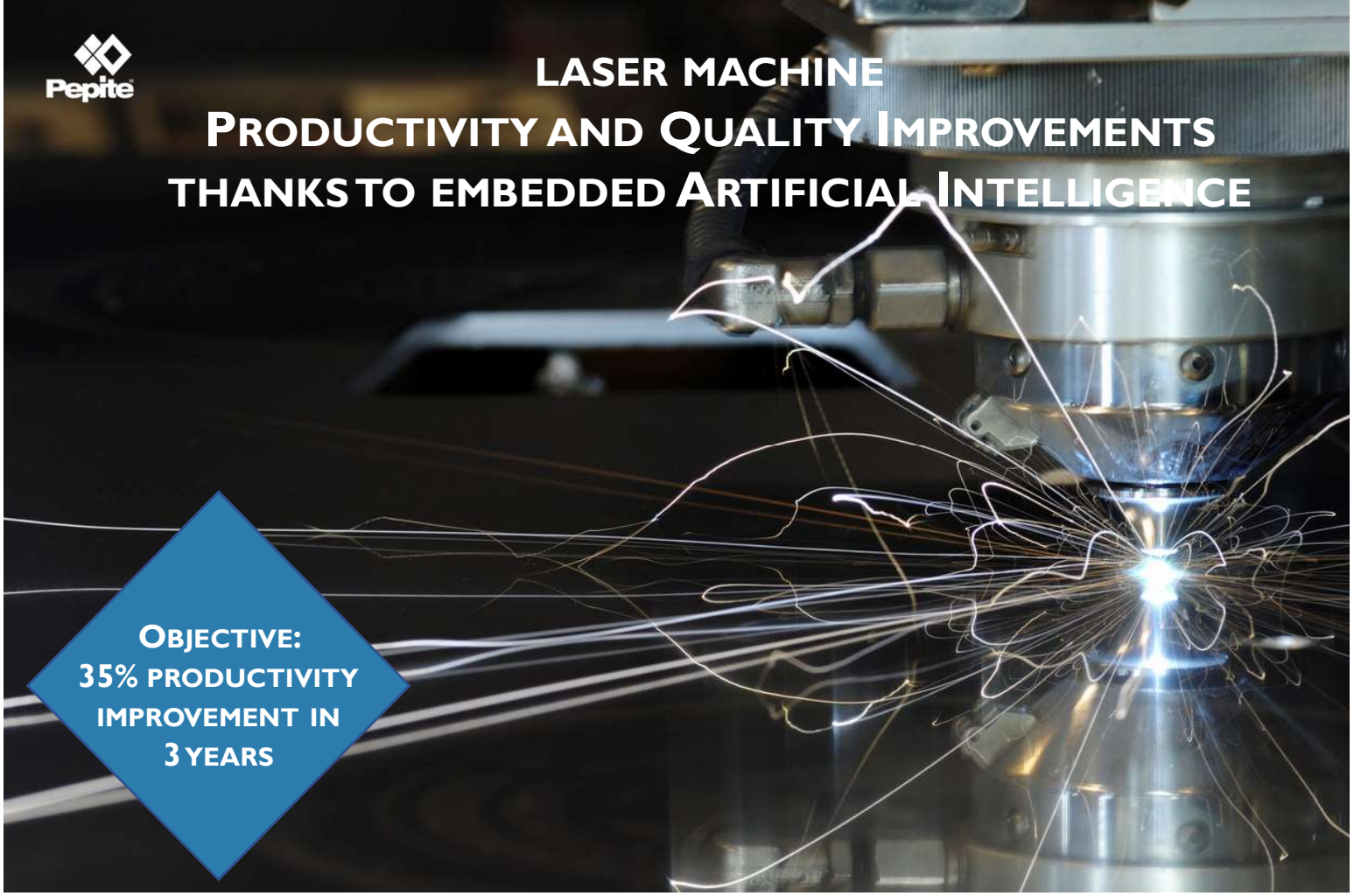
LASER MACHINE
PRODUCTIVITY AND QUALITY IMPROVEMENTS THANKS TO EMBEDDED ARTIFICIAL INTELLIGENCE



OBJECTIVE:
35% PRODUCTIVITY IMPROVEMENT IN 3 YEARS

CONTEXT:

As a leader in industrial Artificial Intelligence techniques**, PEPITe** has partnered with **Lasea** to collaborate on the **ICLOS**[1] **project**.

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.

[1] Intelligent Closed-loop Laser Operation System

ICLOS PROJECT:

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

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.

Current situation:

The ICLOS project offers **broader possibilities** in terms of laser parameter 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.

Challenges:

This technology must **ensure the final workpiece specifications and quality.** The ICLOS project must supply a new solution able to **quickly learn and improve** by itself thanks to the implementation of machine learning functionalities.