

### PROJECT START January 2020

Robotic cell for finishing processes  
Oct 2020

First AI based Visual inspection  
algorithm for cutting tools  
Nov 2020

Automated light inspection for  
honeycomb-made parts  
Dec 2020

Advanced AI visual inspection algorithm for  
both inspection and finishing process  
Apr 21 – Aug 21

Setting-up of validation rig and test  
campaign for cutting tools monitoring  
Sep 2021

Setting-up of validation rig and test campaign  
for honeycom inspection  
Nov 2021

Setting-up of validation rig and test campaign  
for automated surface finishing  
Nov 2021

Implementation in production lines and  
Commercialization of a first product  
2022

### CHALLENGE



- Monitor in-process wear of cutting tools
- Automation of finishing processes for parts manufactured by additive technologies
- Automation of visual inspection of surface integrity and honeycomb-made parts.



### SOLUTION



- Use of **Artificial Vision** Technology. Exploitation of innovative K|Lens visual inspection
- Development of **Machine Learning** based algorithms.
- Integrate Artificial Vision and Machine Learning with **Robotics** for inspection and finishing processes



### BENEFITS



- Identify manufacturing defects at early stages
- Optimize cutting tools life
- Reduce manual finishing operations for AM parts. Improve the repeatability and process control.
- Reduce final inspection time.



## Main Project Goals

#### ELIMINATION



**30.000**

VISUAL CHECKS PER MACHINE  
TOOL/YEAR

#### LIFETIME IMPROVEMENT



**5.000**

CUTTING TOOL PER  
YEAR/MACHINE

#### REDUCTION



**-40 / -50%**

PROCESS TIME IN  
INSPECTIONS / FINISHING

*“Thanks to EIT, we were able to develop integrated solutions using artificial vision, AI based algorithms and robotics for selected aero-engines parts to improve and make more sustainable industrial processes”*