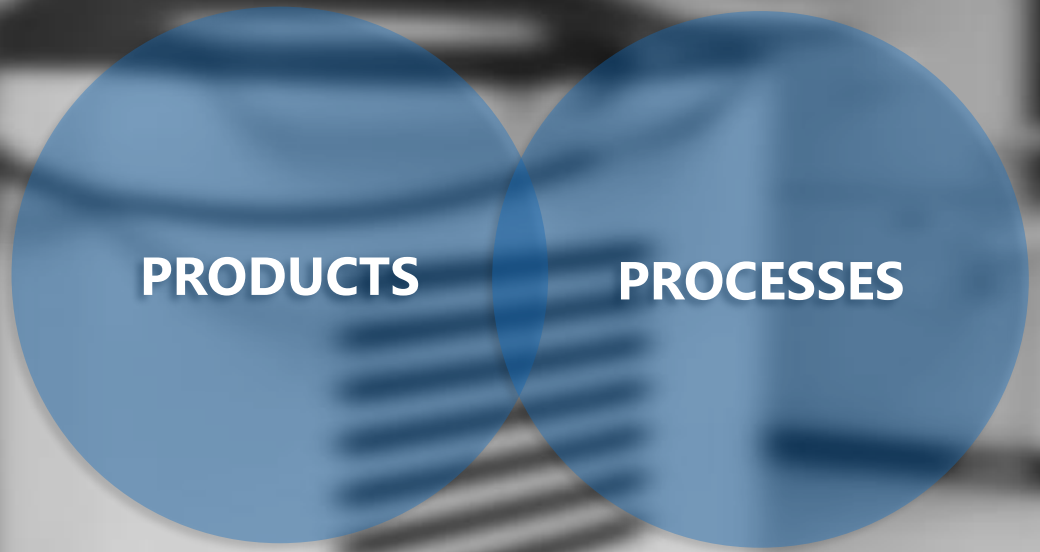
Implementation Cases of Technologies 4.0 in the Automotive Sector transferred to Agrifood sector

ATRIA INNOVATION

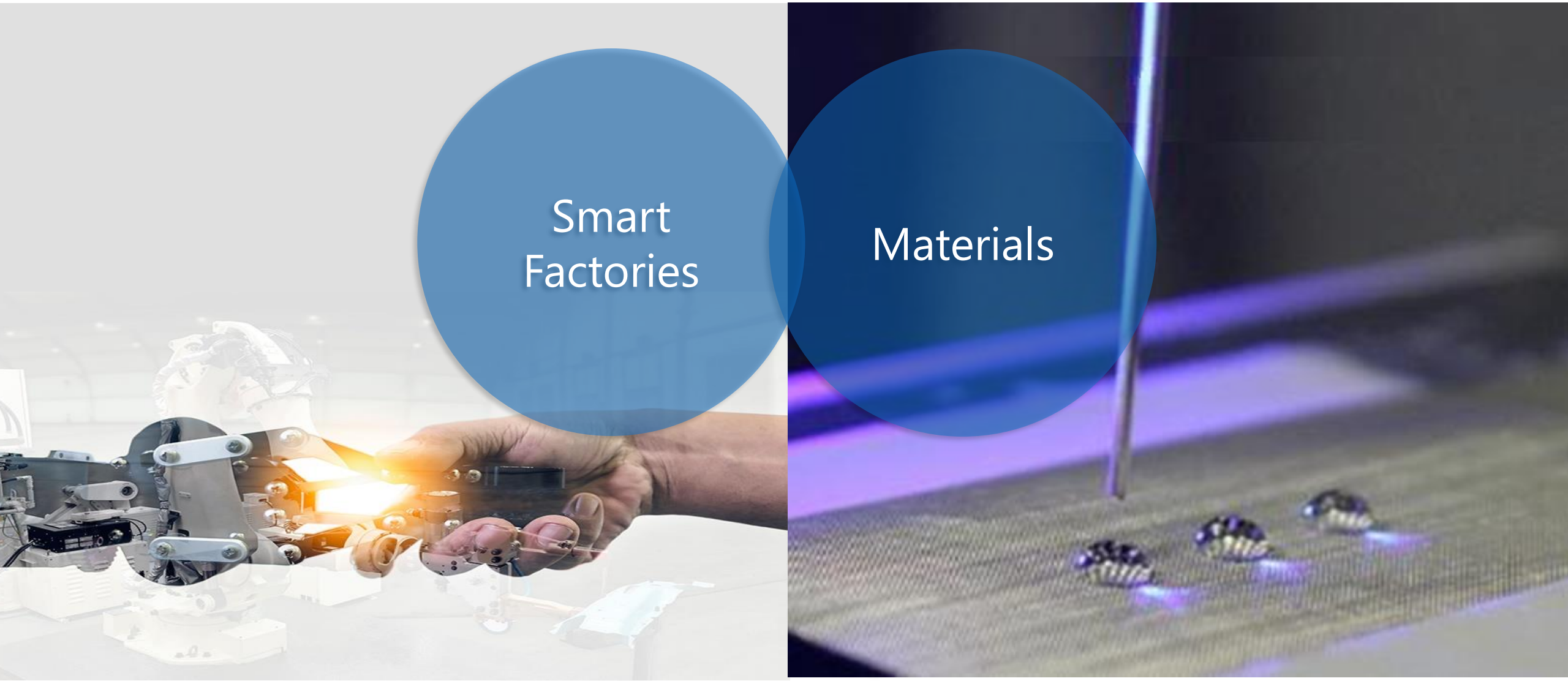
What is ATRIA?

We improve products and industrial processes, we develop solutions to solve specific problems of companies through Innovation and new technologies



What is ATRIA?

Knowdledge Areas



Our story

2014

2 Industrial Engineers
found ATRIA in Zaragoza

Our Team

14 Engineers & Scientists

Thanks to our global vocation, we have carried out international projects in

8 countries

33
Patents

For our clients

94
Projects

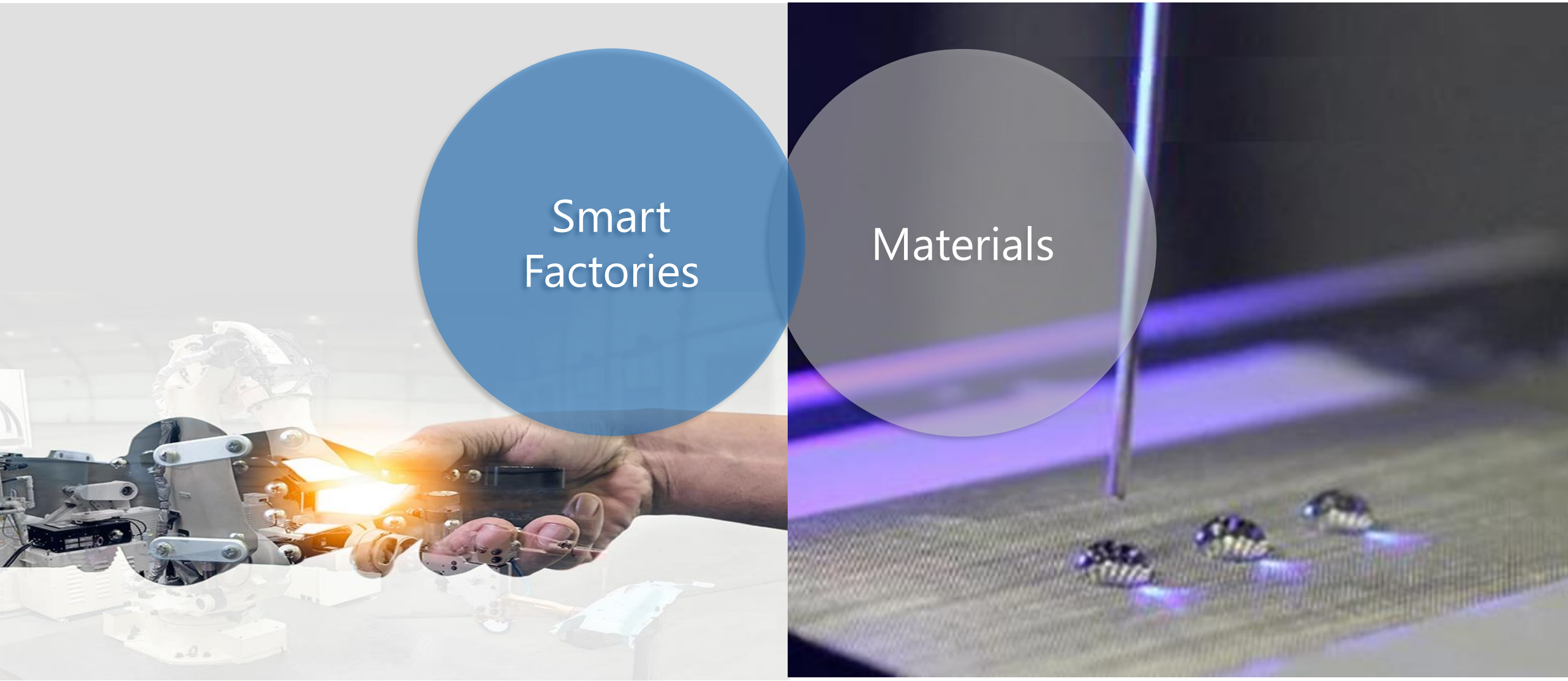
Carried out successfully

Network

We work with integrators and technology suppliers around the world

Sectors in which we work

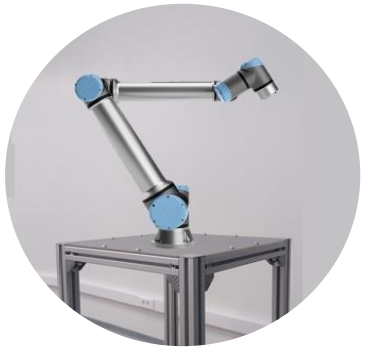
Knowdledge Areas



Technologies | Smart Factories

Computer Vision

Augmented Reality



Smart Robotics

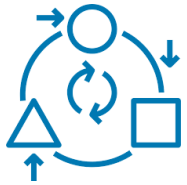
Applications:

- Ergonomics
- Pickings and automation of complex tasks
- Automation of processes with many variants
- Quality and failure prediction
- Metrology and defect detection
- Improvement of cycle time

Computer vision

Development of algorithms

OpenCV Python, C++, SCIKITLearn, Python, Lab View, Halcon



Adaptation of comercial systems

Data visualization, communications

Deep Learning

Neural Networks

TECNOLOGIES

We design the complete vision system: **hardware & software**
Lighting, camera, optics, software, integration and communications

2D Vision

Thermography

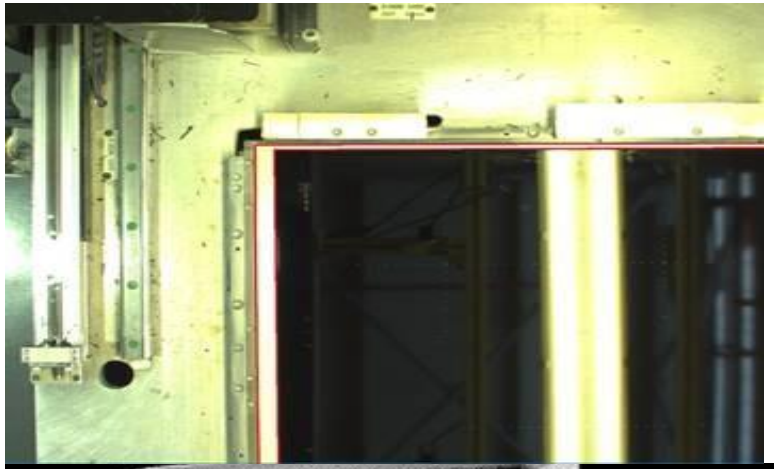
Hyperspectral

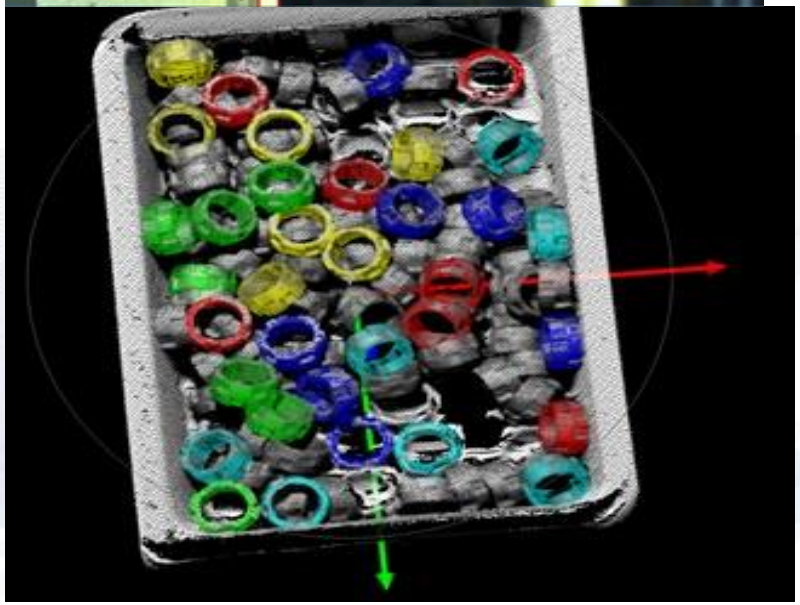
3D Vision

Computer vision

Industrial Applications:

- ✓ Defects **Inspection**
- ✓ **Metrology** and fault detection
- ✓ **Quality** check-ups
- ✓ Identification of parts or **intrusders**
- ✓ **3D** Reconstruction
- ✓ **Verification** of the parts assembly
- ✓ Code Reading and optical carácter recognition (**OCR**)
- ✓ Visión + robotics for complex **pickings**
- ✓ Data **visualizations**





Automatic measurement system for car glass

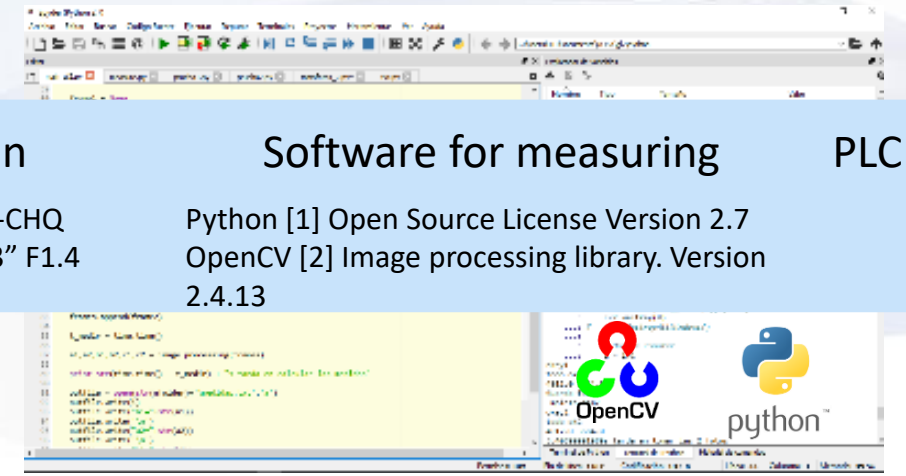
Customer's problem: Robotic arm in a precision gluing station has a 25% failure rate due to tight tolerances of the materials. Line operator has to check every glued elements and measure if there is a gluing error.

Our solution: Development of a 2-step artificial vision system which:

1. checks if the gluing has been performed correctly, and
2. when detecting an error, the system communicates to the robots to rectify position before gluing further elements. The challenge is that the distance to cameras must be from 1,6 m and precision required is 300 µm.

Line installation

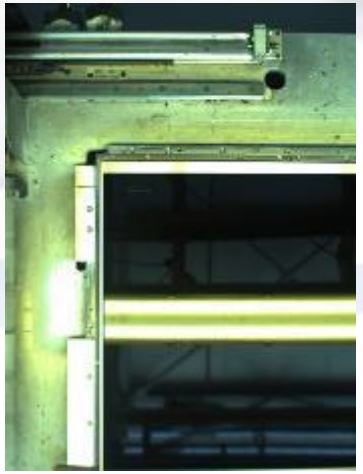
IDS Cameras (UI-3590CP-CHQ 1/2" + Optics 8mm HR 2/3" F1.4 C Ctor)



Software for measuring

Python [1] Open Source License Version 2.7
OpenCV [2] Image processing library. Version 2.4.13

PLC Communication



Sensorization for remote process monitoring of flour parameters

Customer's problem: need of remote monitoring of critical processes through real-time visualization.

Our solution: implementation of artificial vision cameras and sensors in the factory for taking data and images.

- Measurement of extruded flour strands
- Display of grain dispersion in the dryer and in the storage chamber
- Continuous humidity measurement

Development of vision algorithms, integration, communications and interface design.

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