THE INTEGRATED MACHINE VISION COMPANY
VEA MILESTONE 1992 - 2001

- Visione E Automazione was founded in 1992 with the aim to make artificial vision systems and automation systems.
- In 1997 the HQV (High Quality Vision) are the first vision systems that integrate in a PC, the vision system, a PLC, HMI and an axis controller.
- In 1998 start the robotic and mechanical automation machine construction.
- In 2000 the experimentation of new neural logic applied in the area of computer vision produced in 2001 the first Integrated Vision System.
- In 2001 Visione E Automazione becomes VEA S.R.L.
VEA MILESTONE 2002 - 2011

- in 2001 Visione E Automazione becomes VEA S.R.L.
- in 2002 is the first company of artificial vision in Italy to receive the quality certification UNI EN ISO 9001:2000 on design, production, sales and service
- born in 2004, the product line VEDO is easy to use and affordable
- in 2007 VEA develops a first hybrid artificial intelligence logic
- in 2009 the AI hybrid logic is used in the machine vision HQV-PPM (High Quality Vision - Part per Millions) to improve the reliability
- born in 2011, the vision system IVIS (Intelligent Vision System) with hybrid logic algorithms improve the precision in measuring
- in 2011 it started working with the research center Arelab
• in 2012 it started the project Ifo (Intelligent Forging) which controls an entire forging process using computer vision and artificial intelligence logic
• in 2012 began the production of the machines CheckBox for quality control and measurement.
• in 2014 VEA develop MSA (Micro Stabilized Accuracy) algorithm for nanometric high accuracy measurement
• in 2015 DAF (Dirty Advanced Filter) and MFR (Micro Focus Reconstruction) algorithms increase accuracy of vision measurements
• in 2016 start the CheckBox “Laboratory In The Factory” series, the high speed measurement machine for factory
• as of today we have designed and installed more than 800 machine vision systems and more than 250 automation systems
VEA NETWORK

automation
22 solution integrators
372 selected components suppliers

complete solutions

machine vision

research
universities experts
Metrological

The Lab In The Factory

- Precise but slow control machine
- Specialized operator required
- 100% inspection
- Fast and very accurate
- No operator required
- Environment insensitive

VEA
THE LAB IN THE FACTORY

AUTO-CALIBRATION

temperature and humidity variations
are correct in real time
with a certified gauge block

real time calibration
THE LAB IN THE FACTORY

EVERYTHING UNDER CONTROL

IMPROVED ACCURACY

MICRO STABILIZED ACCURACY technology performs a real time analysis of environmental vibration, uses the results to control the repeatability of the measurement and improve accuracy.
DIRTY ADVANCED FILTER

DAF technology understands the measurability of dirty or stained piece and compensates without incurring errors or report as "not measurable"
HOW DOES IT WORK AN A.I. LOGIC VISION SYSTEM?

VISION SYSTEM

- Sample image
- Algorithm choice
- Image to process
- Fixed processing
- Manual tuning of parameter

INTEGRATED VISION SYSTEM

- Sample image
- Algorithm choice
- Image to process
- Dynamic algorithm adjustment
- Adaptive and optimized processing
- Manual tuning of parameter
QUALITY CONTROL
SURFACE ANALYSIS

- detection
  - scratches and engravings
  - flaking
  - porosity
- works with any material
- automatic adjustment to color differences
- analysis of irregular areas
DIMENSIONAL INSPECTION

• high accuracy and reliability in the detection of absolute and relative dimensions with automatic compensation of the light effects on the objects edges

• vibrations measurement stabilizer

• real time calibration to compensate thermal errors

• software filters for dust you always get real measurements
DIMENSIONAL INSPECTION

**SMALL**  accuracy better than 1 micron

**LARGE**  1 mm accuracy on 20 m field of view
ROBOT GUIDANCE
reliability and precision in critical condition

• brightness variations
• conveyor dirty, damaged or wet
• heterogeneous parts
• reflective parts
• take pieces in different positions
I.A. logic benefits

- great ability to interpret and solve problems not completely defined
- repetitive and reliable results
- lower costs due to the lack of infrastructures for "remove" obstacles
a practical example of the A.I. logic

- conveyor with oil emulsion
- worn out conveyors
- ambient light is not constant