



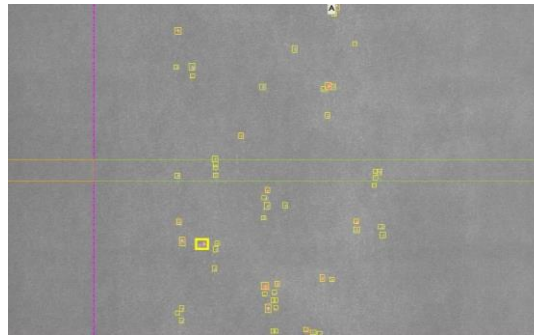
# ROLL INSPECTION VISION SYSTEM

## KEY BENEFITS



### ✓ Efficiency

enhances efficiency by identifying, rectifying defects and **reducing downtime**



### ✓ Quality Control

ensuring consistent detection of defects, maintaining product integrity, meeting **top quality standards**



### ✓ Cost savings

**early defect detection** minimizing the risk of faulty products reaching the market

## VISION SYSTEM

System to be installed on the production line consisting of:

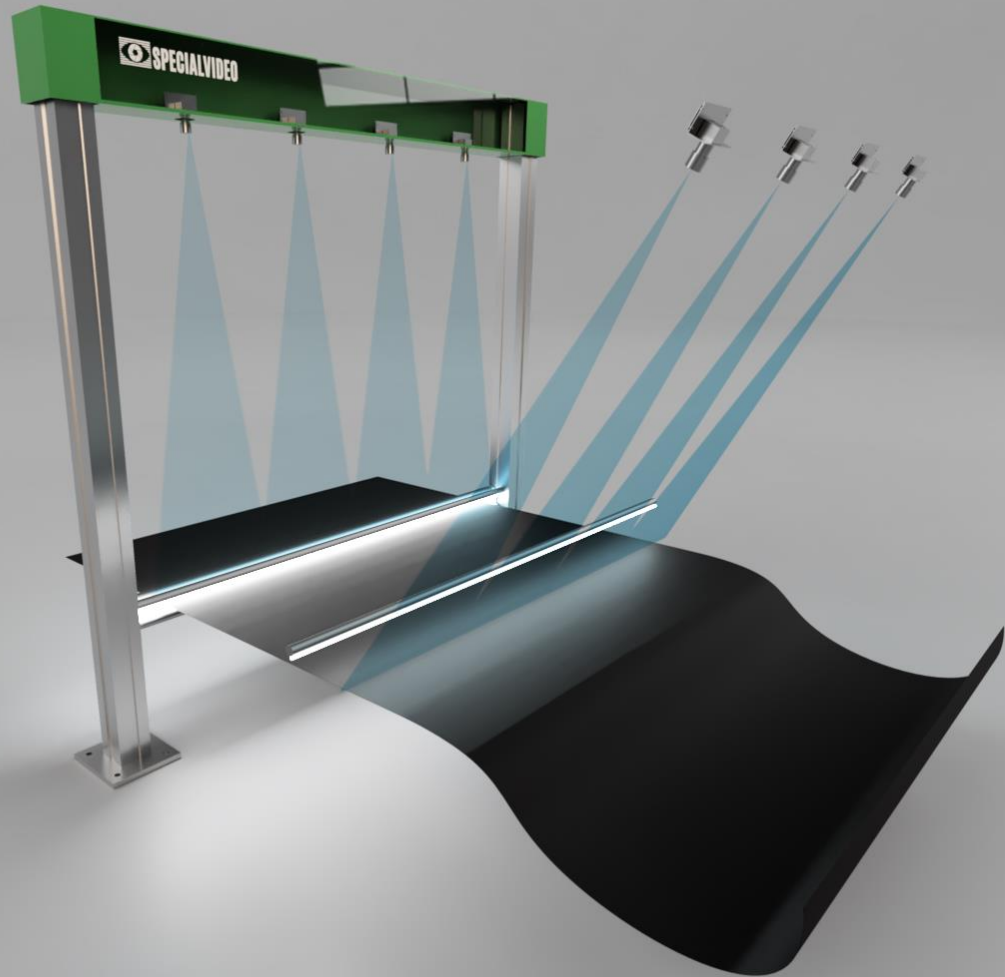
- High resolution B/W cameras
- illuminators
- PC with Specialvideo software
- portal frame

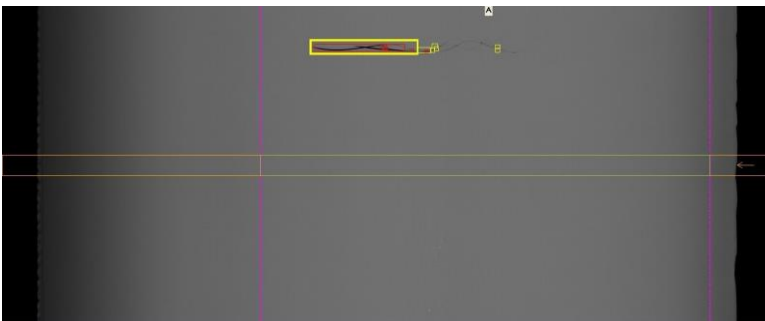
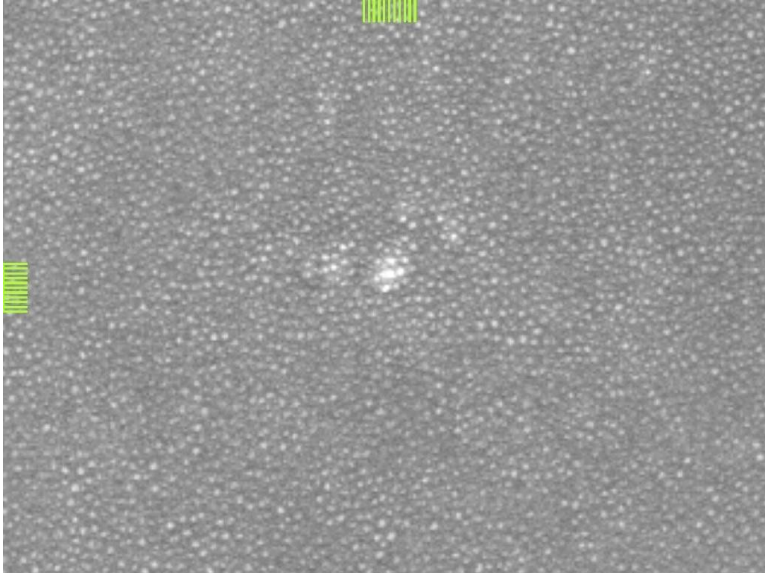
## ROLL INSPECTION

The vision system is capable of detecting defects and impurities on **material of different colors, transparent and embossed.**

The inspection can cover the upper and/or lower surface and can search for particular reflecting defects, by setting multiple vision stations.

# SYSTEM REPRESENTATION





## SYSTEM OVERVIEW

### KEY FEATURES AND CAPABILITIES

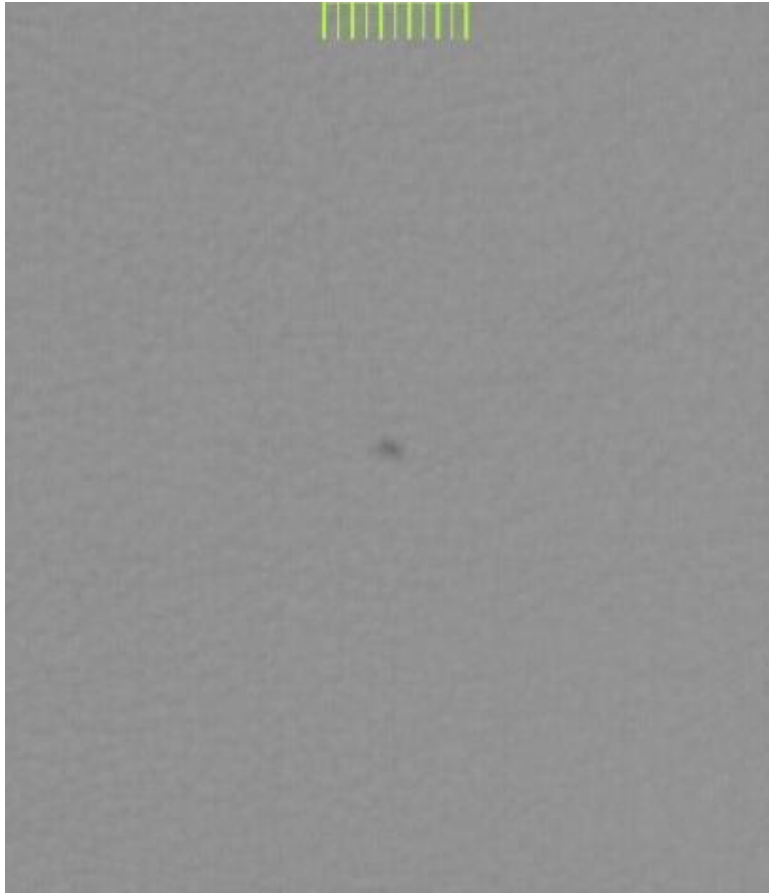
The system is capable of conducting the following **inspections, recorded in the Logbook:**

- Position of the edges (for proper rolling)
- Detection of spots and foreign bodies
- Pass-through holes, lacerations, cuts
- Creases, wrinkles

The system also **alarms in case of:**

- Density/extension percentage of defects over threshold
- Repeated defects in the same line

# DEFECT DETECTION



## SPOTS DETECTION

The system can detect any spots, whether they are light or dark (black spot on the left)



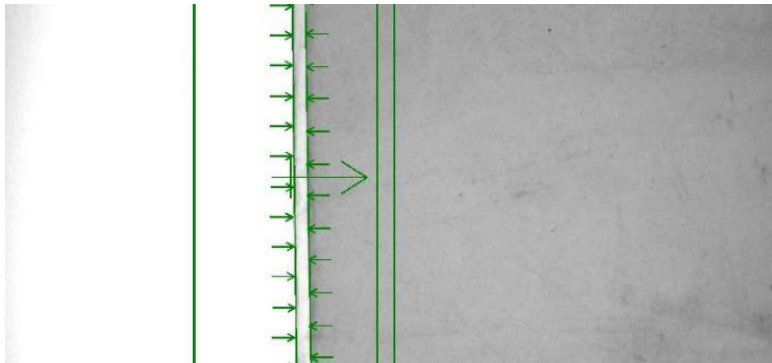
## FOREIGN BODIES

Visualization of any defects or foreign bodies detected (above and on the left)



## KEY SPECIFICATIONS

Specification	Note	Value
N° of cameras	Depending on roll width	1 - 4
Maximum speed		100 m/min
Height of cameras	From the material	1800 mm
Maximum roll width		3600 mm
Material thickness Omogeneity	Thickness difference between different materials	1 mm
Resolution		0,25 mm/px
Minimum defect		0,5 sq mm
Material Color	Solid color only	black, white, gray, colored, transparent
Material Surface		Plain or embossed

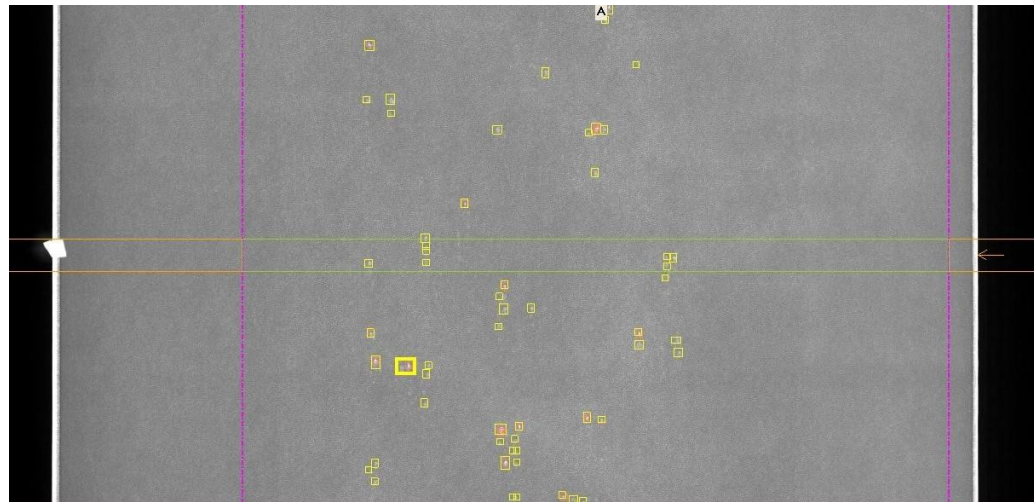


## EDGES CONTROL

The system is able to detect the edges of the material, or any bands, in order to ensure that the spool is rolled up correctly.

## DEFECT CHART

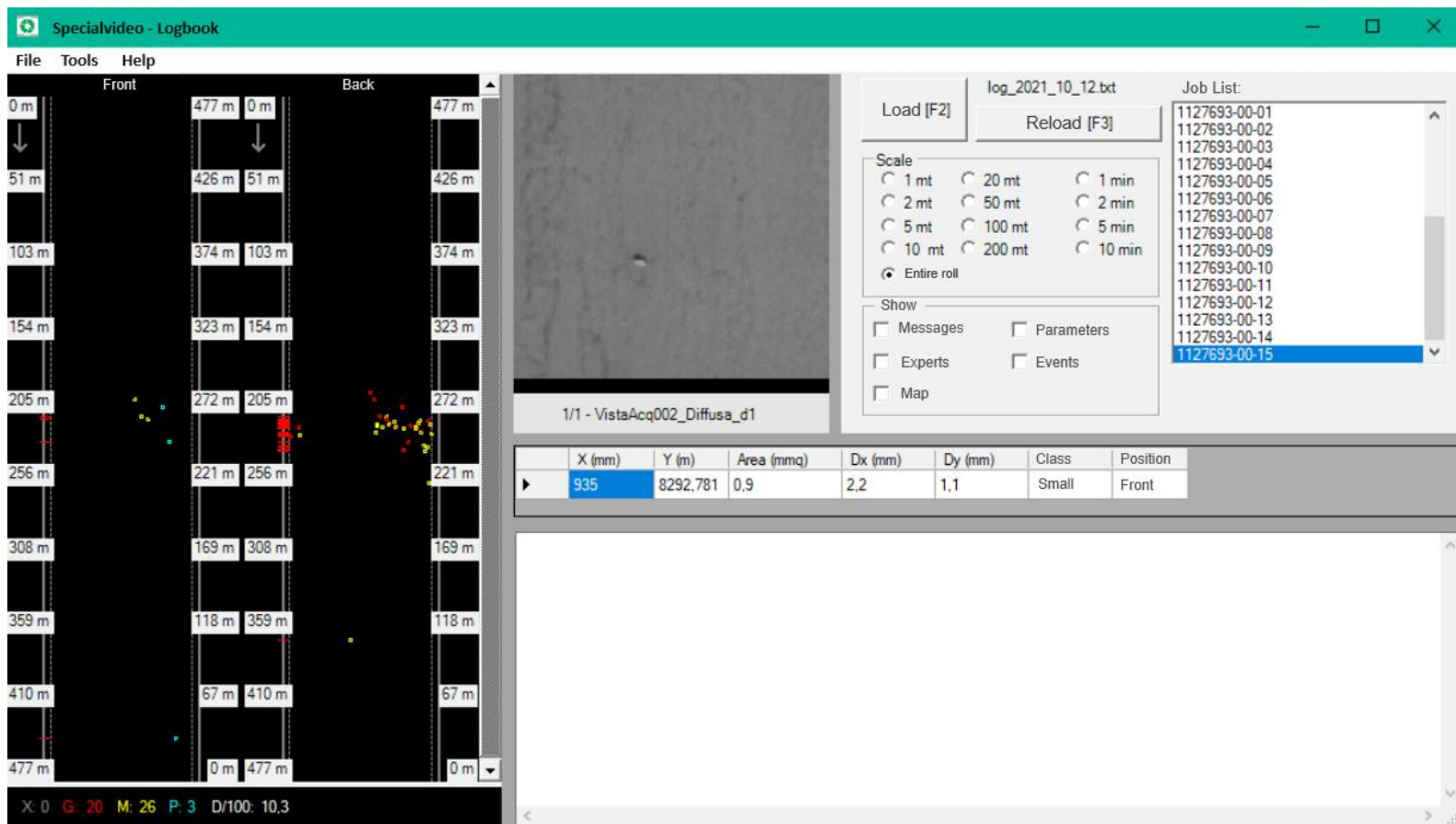
The system will detect the presence of defects along the material, and report their location via the screen of the station monitor, allowing and facilitating eventual rejection or fixing (e.g., foreign bodies).





# DEFECT/MEASURE MAP

The map of defects/asures and various statistics are automatically saved to system PC **viewed offline thanks to the Logbook application**. When the system is connected to the factory network it is possible to store the files in a server.



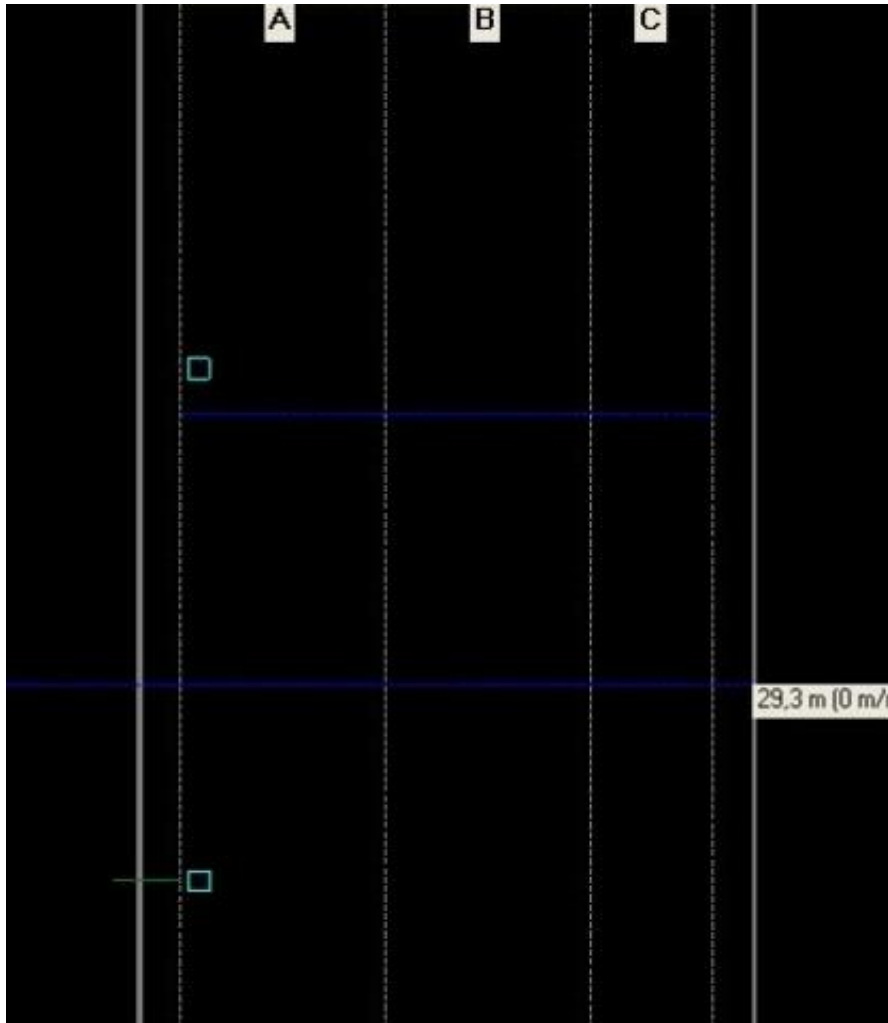
The screenshot shows the 'Specialvideo - Logbook' application window. The interface includes a menu bar (File, Tools, Help), a main display area with a defect map on the left and a central image viewer, a control panel on the right, and a data table at the bottom.

The defect map on the left shows a grid of measurements for 'Front' and 'Back' views. The central image viewer displays a grayscale image of a surface with a small defect. The control panel on the right includes buttons for 'Load [F2]' and 'Reload [F3]', a 'Scale' section with radio buttons for various magnifications (1 mt, 2 mt, 5 mt, 10 mt, 20 mt, 50 mt, 100 mt, 200 mt) and durations (1 min, 2 min, 5 min, 10 min), and a 'Show' section with checkboxes for Messages, Parameters, Experts, Events, and Map. A 'Job List' on the right side of the control panel shows a list of job IDs, with '1127693-00-15' selected.

The data table at the bottom displays the following information:

	X (mm)	Y (m)	Area (mmq)	Dx (mm)	Dy (mm)	Class	Position
▶	935	8292,781	0,9	2,2	1,1	Small	Front

At the bottom left of the application window, the status bar displays: X: 0 G: 20 M: 26 P: 3 D/100: 10,3

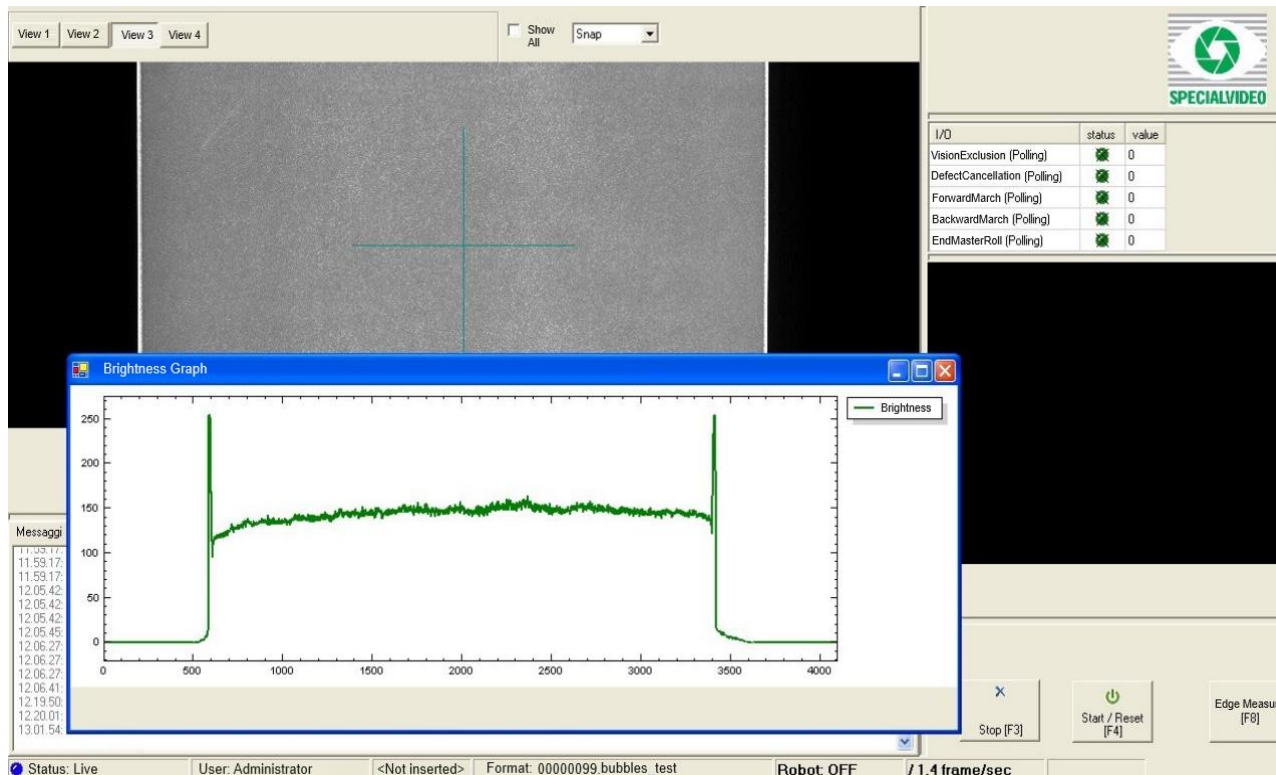


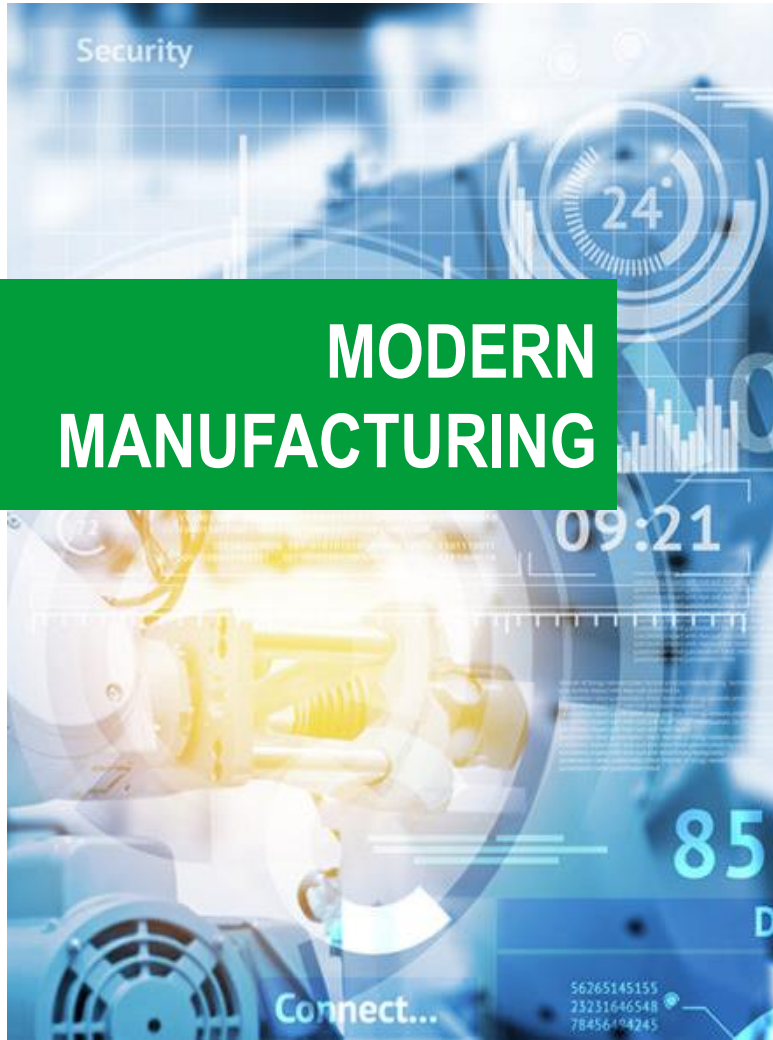
## CHILD ROLLS

Depending on subsequent processes of cutting, a feature of this system is to enable the operator to establish the **subdivision of the master roll into numerous child rolls (A – B – C in the figure)**. These subdivisions can then be promptly showcased on the monitor in real-time, providing the operator with immediate visual feedback.

# BRIGHTNESS ADAPTATION AT START UP

At system startup, the image acquisition adjusts the brightness based on the product being inspected. By modifying camera parameters, it ensures a medium gray-level image regardless of material color and the disomogeneity of the light. Runtime, material brightness is continually monitored to correct for minor fluctuations of the lightning.





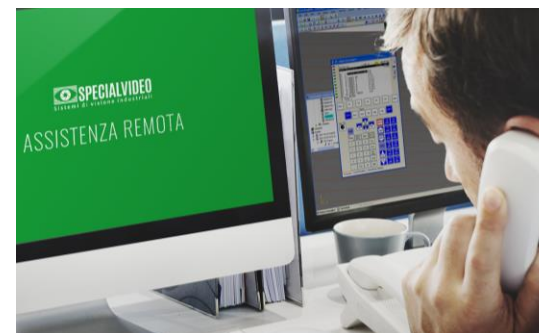
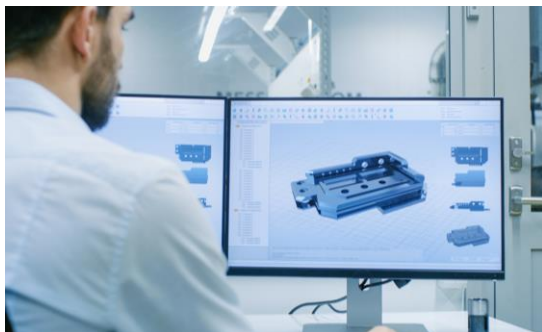
## MODERN MANUFACTURING

# TRACKING OF DATA AND STATISTICS

The vision system is able to record counts and statistics that are **beneficial for modern manufacturing contexts**.

We can integrate into the system into the plant network, providing artificial vision data useful for the customer's specific production tracking needs.

## SERVICES



### ✓ Design

Choice and configuration of the hardware.  
Vision software design and development.

### ✓ Test

Testing at Specialvideo.  
Commissioning and testing at the customer.

### ✓ Technical support

Remote assistance included for the entire warranty period. Field interventions with specialized technicians.  
We're structured to follow our customers all over the world.

## SPECIALVIDEO Srl

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