



DEEDS NOT WORDS

SACMI PRESENTATION FOR EURO CANTECH 2016 - BERLIN



EMILIO CHIESI – GM PARMACONTROLS
ANDREA FIORENTINI – BU DIRECTOR FOR SACMI VISION SYSTEMS



WAS BORN IN 1919.....

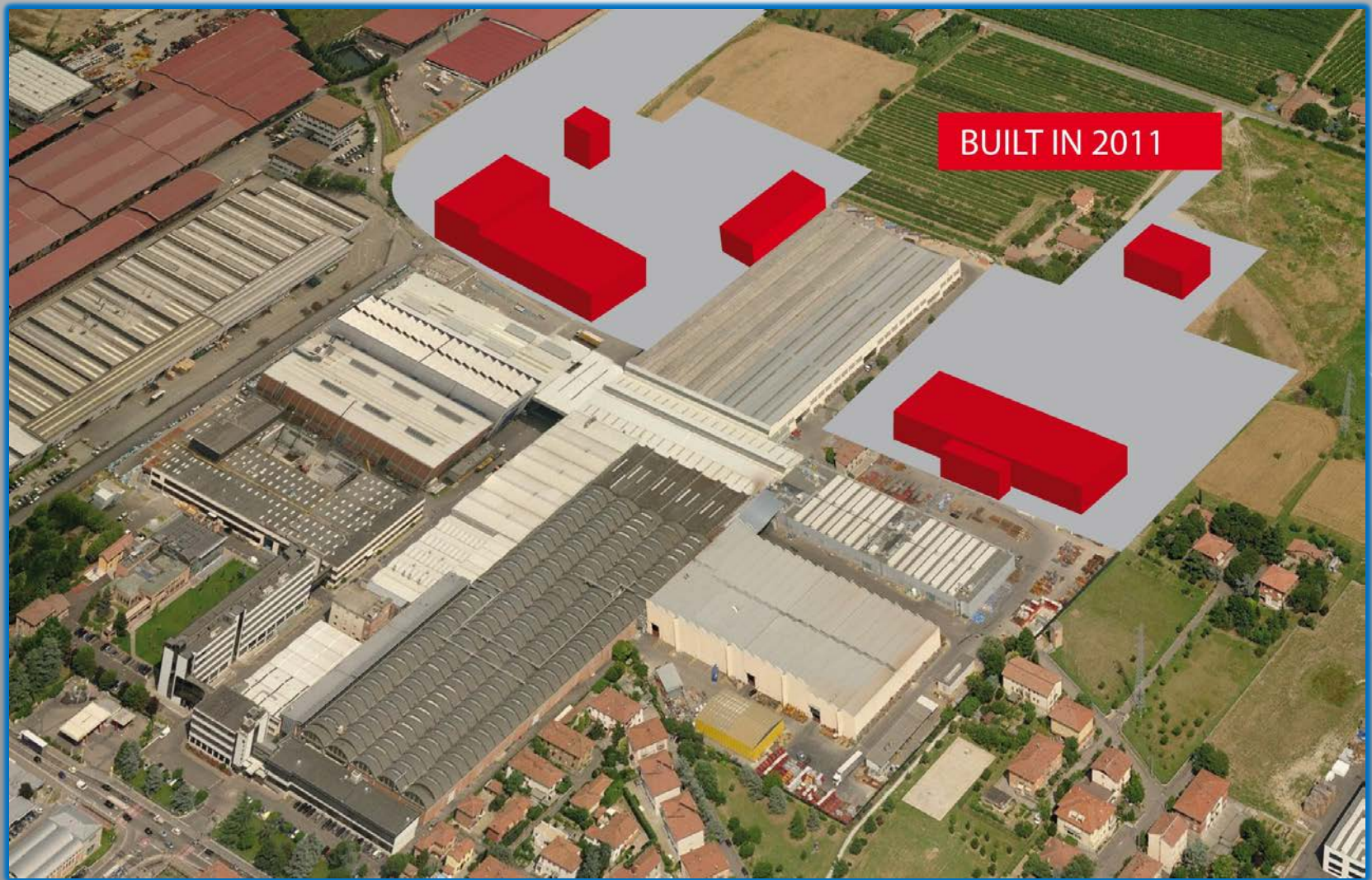




SACMI



SACMI – Headquarter in Imola (Italy)



Today: over 1000 employees and 270,000 m²

SACMI - Divisions

Ceramics



SACMI IMOLA

SACMI MOLDS&DIES

SACMI FORNI

INTESA
a company of **SACMI**

nuovafurma

SURFACE
INSPECTION

GAIOTTO

RIEDHAMMER

LAEIS

SAMA

Team

Sima

KeraTech
ITALIAN STRONG EXPERTISE

KEMAC

Packaging



SACMI IMOLA

SACMI FILLING

SACMI LABELLING

SACMI PACKAGING

BENCO PACK

Food



CM Carle & Montanari

CM Carle & Montanari
Wrapping Systems

CM OPM

CM FIMA

Services



ITALIAN SPED

PROTESA

Inspection Systems



SACMI IMOLA

SURFACE
INSPECTION

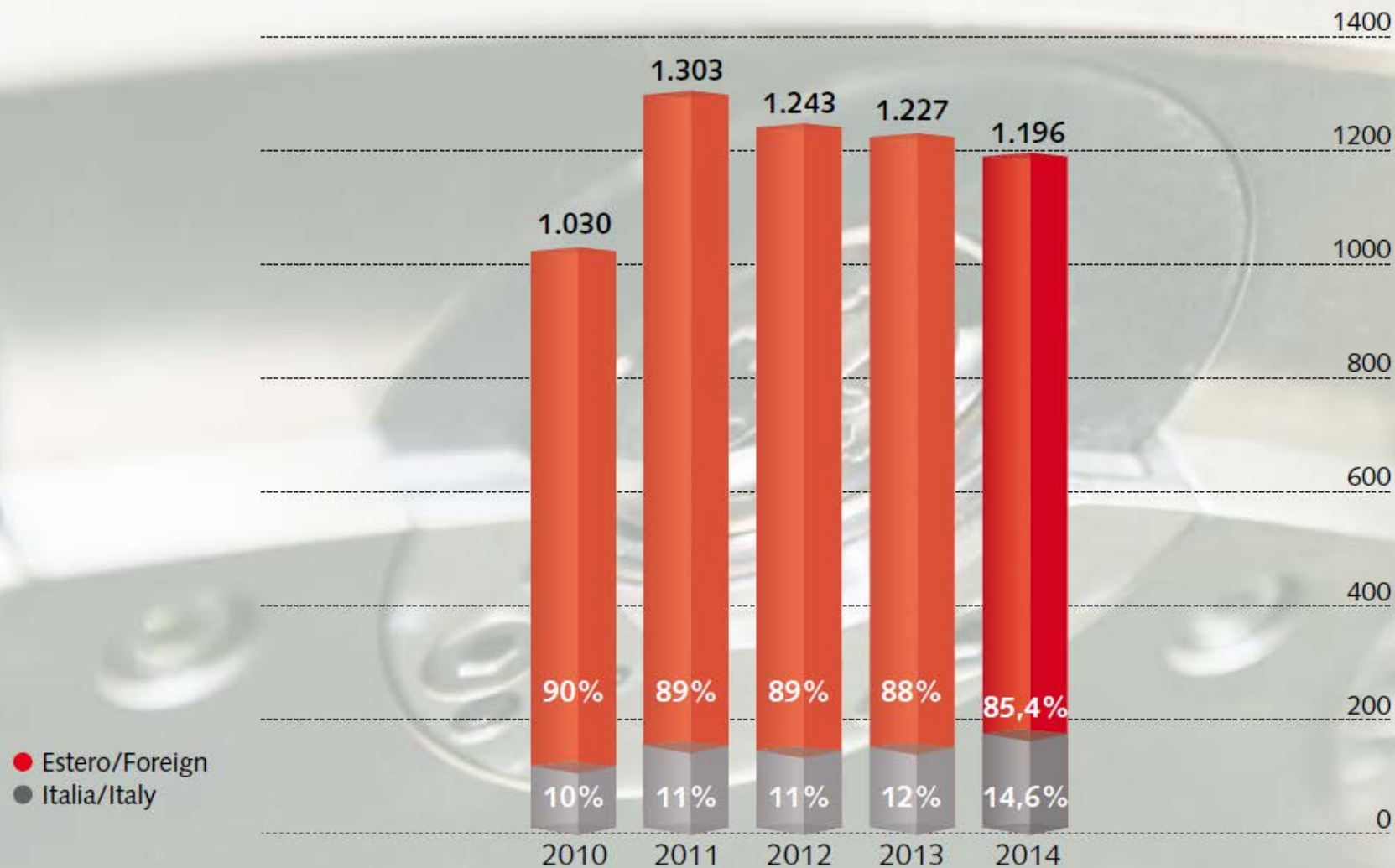


Our Vision is Your Quality

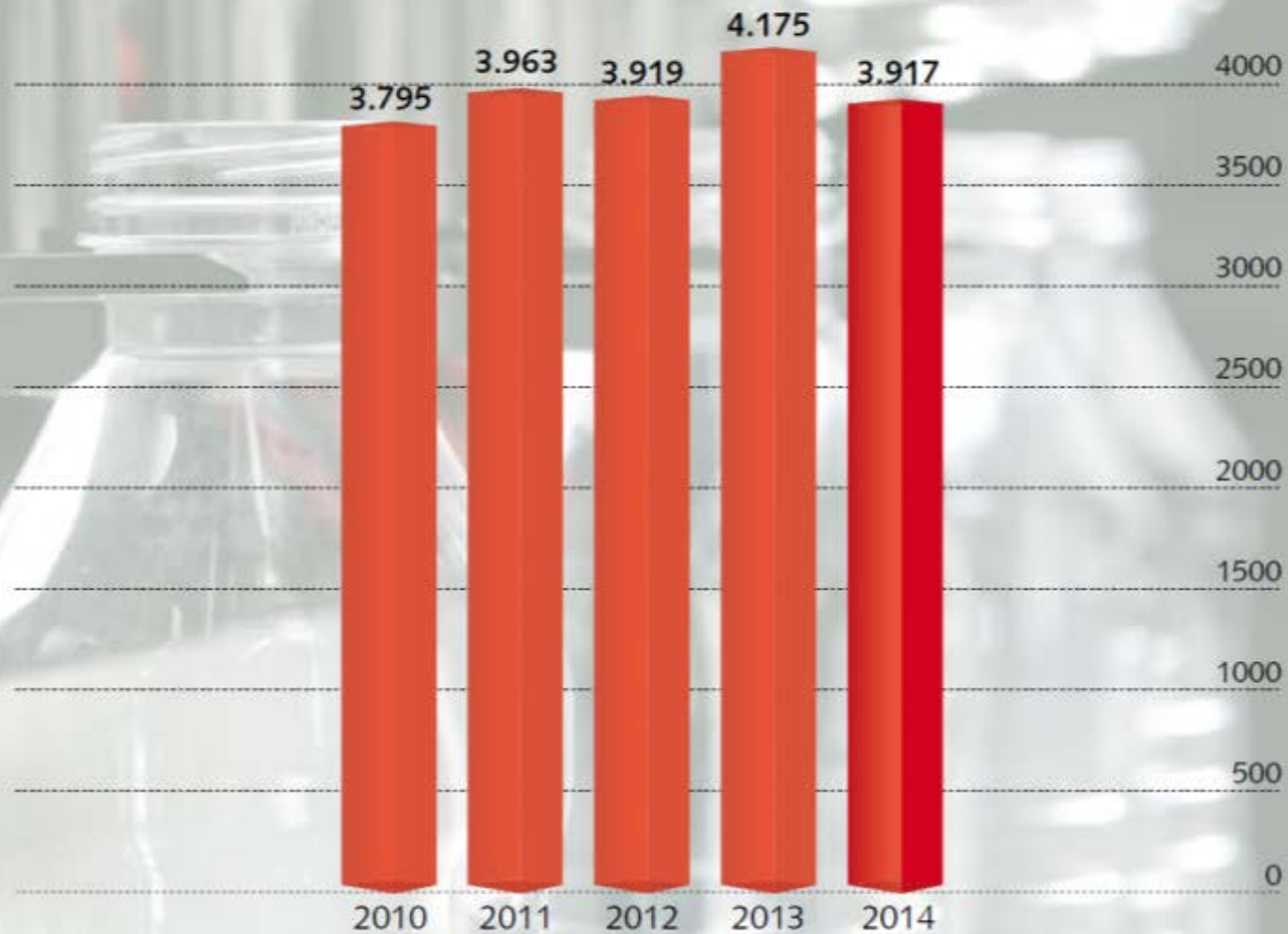


SACMI in the world employees approx. 4.000 people...





Ricavi delle vendite e delle prestazioni (in milioni di Euro)
Revenue from sales and service (in millions of Euros)



Numero dipendenti del Gruppo a fine anno
Number of Group employees at year's end



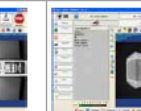


Investimenti di Gruppo (in milioni di Euro)
Group Investments (in millions of Euros)

SACMI – Vision Systems

- Sacmi started producing Vision Systems for Quality Control in 1987.
- Since then, more than 8,000 units have been sold and installed World wide.
- Its portfolio of applications covers most of the food & beverage market needs.
- More than simple vision systems, SACMI is capable to provide complete turn key solutions.

SACMI – Vision systems: LIST of applications

	CROWN CAP	ALUMINIUM CAP	PLASTIC CAP	TWIST CLOSURE	END/EASY OPEN END/PEEL OFF/ EASY PEEL	FOOD&BEVERAGE CAN	LITHOGRAPHED SHEET	PREFORM	LABEL	CONTAINER
APPLICATION										
										
										
DESCRIPTION	Complete inside and outside crown cap inspection for colour and printing. Speed up to 5000 ppm. Main detectable defects: malformation, contamination, liner defects, corrugation integrity, printing defects, colour shift, missed decorations, scratches, flash and spots.	Complete inside and outside aluminium cap inspection for colour and printing. Speed up to 3600 ppm. Main detectable defects: malformation, contamination, liner defects, printing defects, colour shift, missed decorations, scratches, flash and spots. Tamper evident band defects.	Complete inside and outside plastic cap inspection for colour and printing. Speed up to 3600 ppm. Diameter inspected from 12mm to 99mm. Main detectable defects: malformation, contamination, liner defects, printing defects, colour shift, missed decorations, scratches, flash and spots. Tamper evident band defects, incomplete caps, detection of micro-hole and micro-crack.	Complete inside and outside twist closure inspection Speed up to 3600 ppm Diameter inspected from 10 mm to 110 mm Main detectable defects: malformation, contamination, corrugation integrity, printing defects, panel defects, deco slide defects, scratches, flash and spots.	Complete inside and outside end inspection Speed up to 3600 ppm Diameter inspected from 40 mm to 150 mm. Height inspected from 30mm to 250 mm. Main detectable defects: malformation, compound and curl defects, corrugation integrity, printing and color defects, scratches, flash and spots.	Complete inside and outside can inspection Speed up to 3600 ppm Diameter inspected from 40 mm to 150 mm Height inspected from 30mm to 250 mm. Main detectable defects: malformation, contamination, compound and curl defects, corrugation integrity, printing and color defects, scratches, flash and spots.	Lithographed sheet inspection Speed up to 10,000 sheet/hour Main detectable defects: registration errors, missed colour plains, colour deviations, colour shifts, deco center to edge offset. Other visible printing defects.	Complete Preform inspection Wide Range of Necks diameter inspection 28,38, 30/25 Height Inspected from 40 mm up to 160 mm from necking Main detectable defects: malformation, contamination, corrugated surfaces, mould defects, print defects, craters, holes in body and injection point, inclusions, bubbles, colour variation, humidity, opacity, milk stripes, crystalline formations, cavity number, relevant points ecc.	Complete Roll-fed, Self-Adhesive, Hot Melt or Cold glue label inspection Speed up to 1200 ppm Diameter inspected from 160 mm Height Inspected up to 370 mm Main detectable defects: label skew, corrugated surfaces, label misappliance or unsticking, print defects, contamination and dirt, barcode readings, wrong label reference reading, label orientation, label position in relation to main relevant point in the container.	Container Inspection Speed up to 1000 ppm Diameter inspected from 40 to 160 mm Height Inspected from 150 to 370 mm Main detectable defects: contamination before filling and dirt, container integrity, wrong filling level, bottle leak or bad capping, filling level, relevant points
	In line: it can fully fit into the lining machine Stand alone CAT300: it can inspect crown caps as a stand alone inspection system.	In line: it can fully fit into the lining machine Stand alone CHS-AC: it can inspect aluminium caps as a stand alone inspection system.	In line CVS-PC: it can fully fit into the lining, slitting and folding machine; into compression moulding machine and into injection moulding machine Stand Alone CHS-PC it can inspect plastic caps as a stand alone inspection system. Spark Tester: Option for microholes detection on caps moulded by injection	In line CVS-TWCL: it can fully fit into customer conveyor Stand alone CVS-TWCL: it can inspect cans as a stand alone inspection system.	In line CVS-ENDS: it can fully fit into customer conveyor Stand alone CVS-ENDS: it can inspect ends as a stand alone inspection system.	In line CVS-CAN: it can fully fit into customer conveyor Stand alone CVS-CAN: it can inspect cans as a stand alone inspection system.	In line: it can be fully fit into existing decoration line	In line PVS001: it is an integrated inspection system integrated in multi brand labelling machinery to inspect the label attached to the container with high precision In line LVS002 vision system integrated in multi brand labelling machinery to orientate the container in the right position before the label attachment process Stand Alone LVS360 Vision system to inspect containers in conveyors	In line LVS001 vision system integrated in multi brand labelling machinery to inspect the label attached to the container with high precision In line LVS002 vision system integrated in multi brand labelling machinery to orientate the container in the right position before the label attachment process Stand Alone LVS360 Vision system to inspect containers in conveyors	In line: it can be fully fit into existing bottling line Stand Alone LVS360 Vision System to inspect containers in production conveyors
SPECIAL FEATURES	<ul style="list-style-type: none"> Prearrangement for promotional printings inside crown caps 	<ul style="list-style-type: none"> External side wall inspection by 360°degrees Lateral Inspection Advanced pericap detection Cavity recognition 	<ul style="list-style-type: none"> External side wall inspection by 360°degrees Lateral Inspection Advanced pericap detection Cavity recognition Microholes detection 	<ul style="list-style-type: none"> Printing Inspection Color Inspection 	<ul style="list-style-type: none"> Printing Inspection Color Inspection 	<ul style="list-style-type: none"> External side wall inspection by 360°degrees OCR/OCV features Barcode detection 	<ul style="list-style-type: none"> Colour inspection LAB or other spaces 	<ul style="list-style-type: none"> Cavity recognition Preform weight Thread inspection Quick format changeover 	<ul style="list-style-type: none"> Vertical/horizontal label position Parting line alignment OCR/OCV features Barcode detection 	<ul style="list-style-type: none"> External side wall inspection by 360°degrees OCR/OCV features Barcode detection

**First
Vision
Inspection
System
installed**

1987



1995



CVS100
First
Windows
based
vision
system

CVS2000
First
PC
based
vision
system

1999



2006



CVS3000
First
vision
system
breaking
5,000
inspected
caps/min

**First
CVS360
3D
for the
inspection
of LABEL**

2009



2011



CHROMETRIQ
New high
performance
lighting
equipment for
METAL
CLOSURES

**NEW
MVS360
3D
for the
inspection
of CAN**

2015



SACMI MACHINE VISION

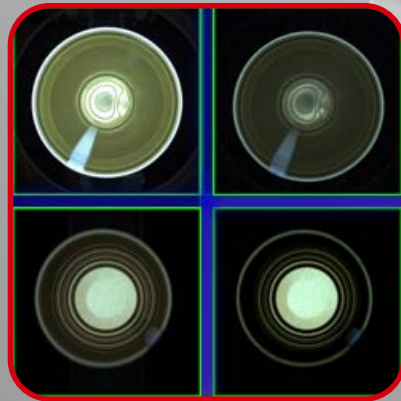
4 PILLARS: DEEDS not words

- 1 – HW: Camera Link platform
- 2 – SW: CVS 3000 Plus
- 3 – Lenses: Dedicated & Customized
- 4 - Lighting systems: Chrometrix
– 360 3 D

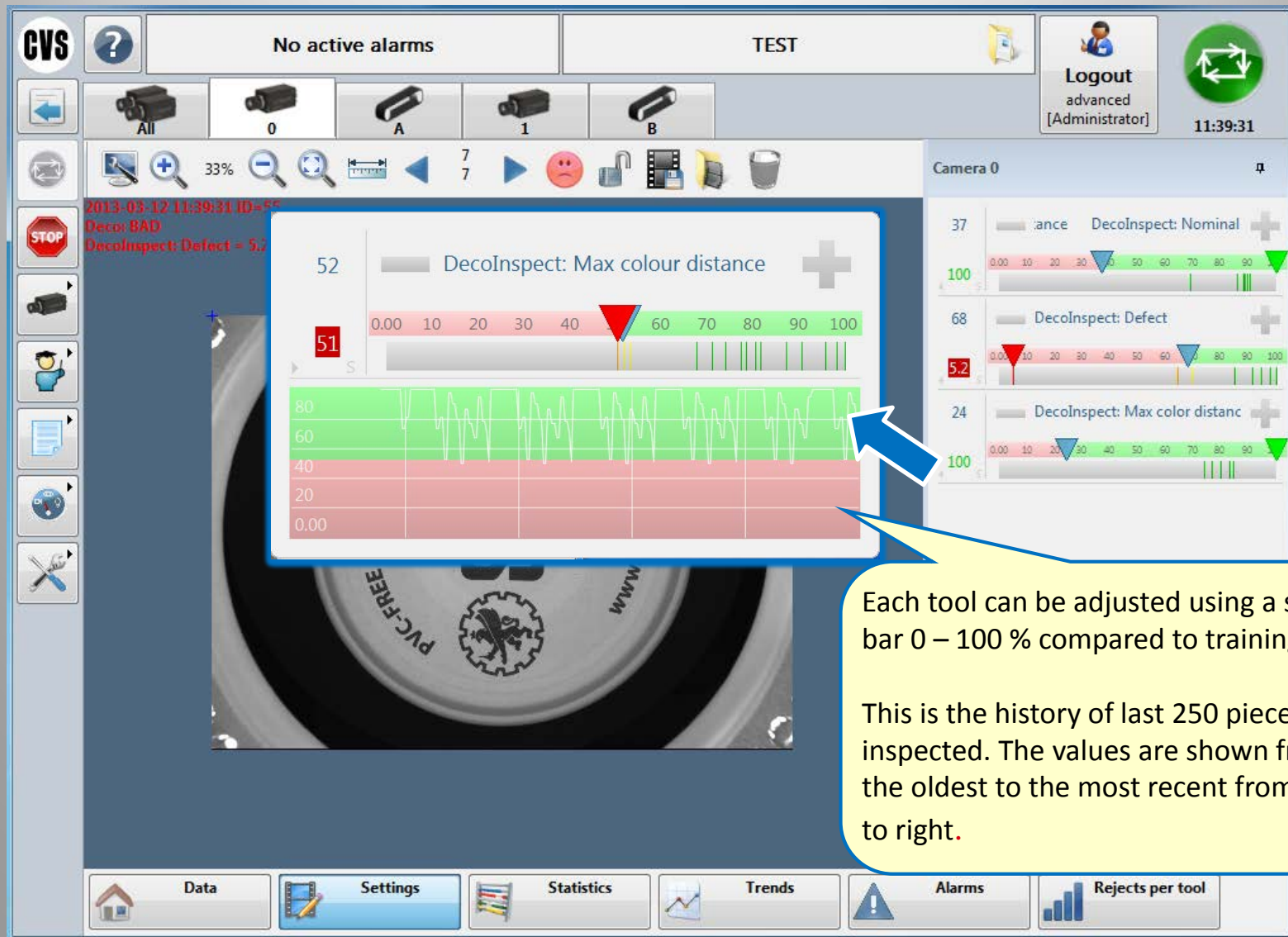
HW: Camera Link platform



CAMERA LINK platform with a 1" CCD
Up to 120 Hz Color 5 MPX CAMERA + PIV
DOUBLE EXPOSURE
Real PIV approach for dual image technology



CVS3000 – User Interface

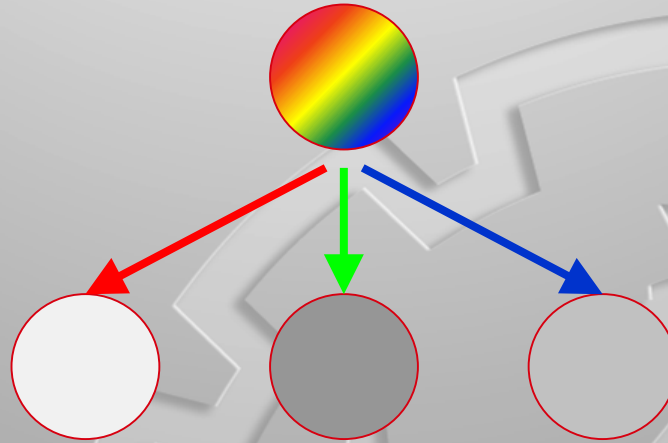


Chrometriq: new Lighting approach



CHROMETRIQ - Concepts

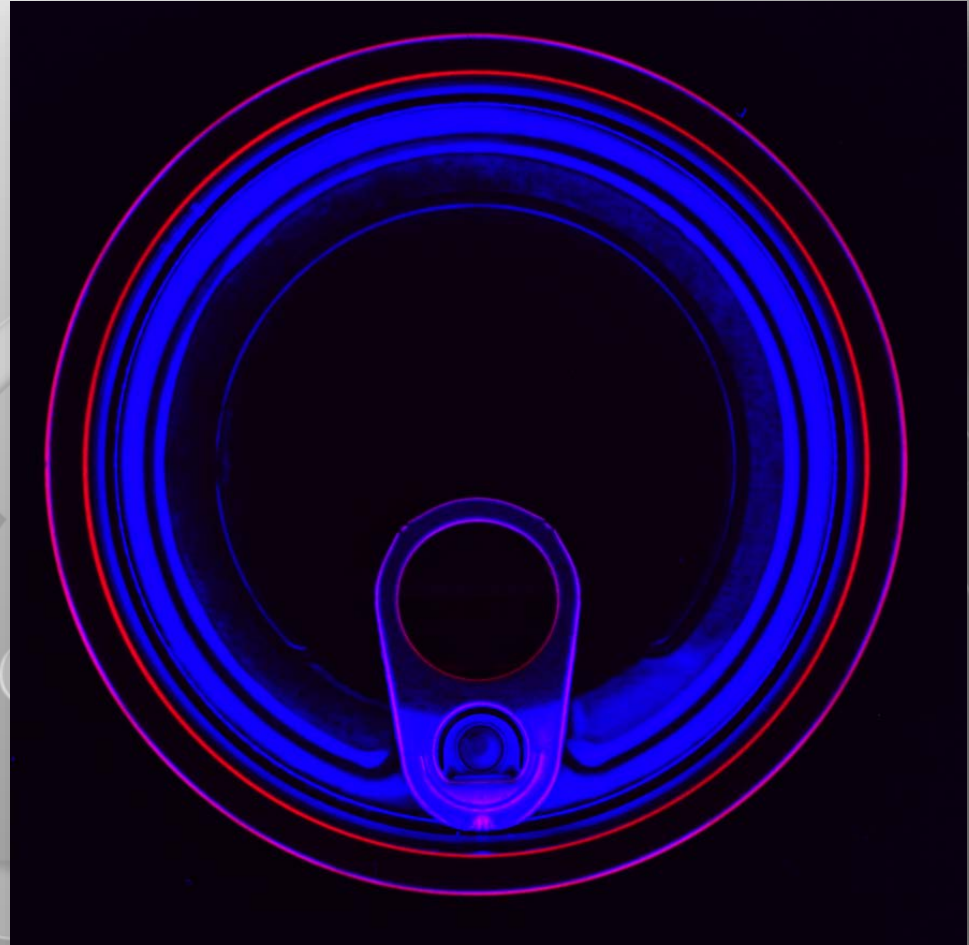
- The color image acquired by the CVS will be split into three different monochrome images, one for each color plane



- Each monochrome image is specialized to improve the contrast of the visible defects in every single RGB
- Each “specialized” monochrome image will be inspected using its own and appropriate task list

Chrometriq-UV:

Specifically designed for EOE ends, Chrometriq-UV adds a UV light source to highlight postrepair varnish.



Camera resolution: benefits

Standard



640 x 480

New 5M pixel camera



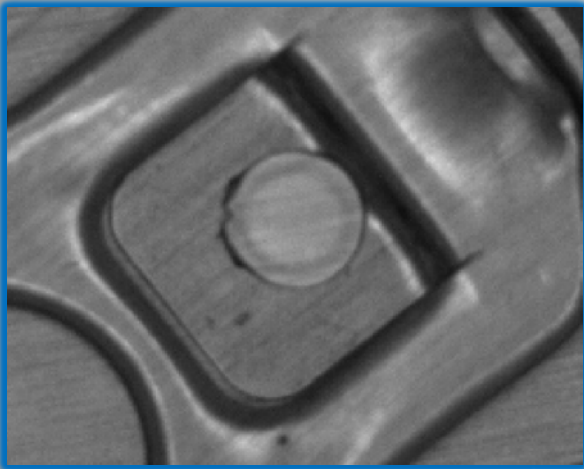
2500 x 2000

REAL PROPORTIONS!!!

Advantages:

- small defects becomes visible or more visible
- strongly reduces the false rejection

Camera resolution: benefits



**The 5 MP camera coupled
with a 1" CCD gives
enough resolution to have
an EXCELLENT rivet
inspection with only one
camera!!!!
At FULL speed!**

What is CVS360-3D for The FULL decoration Inspection of cans?



CVS360-3D

**is a hardware/software
module developed by
SACMI R&D capable to
reconstruct a 2D image of
a 3D object..**

LVS Inspection Systems for labelling

LVS360 3D : Vision System for the inspection of non-oriented containers

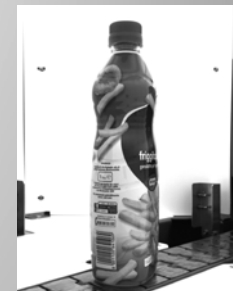
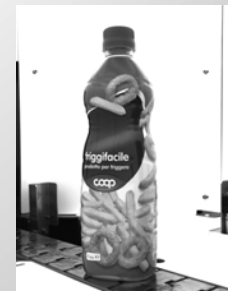


4 images
acquired by 4
cameras

2D envelope reconstructor based on 3D model
of the container



2D image of lateral envelope (repeated 3 times)

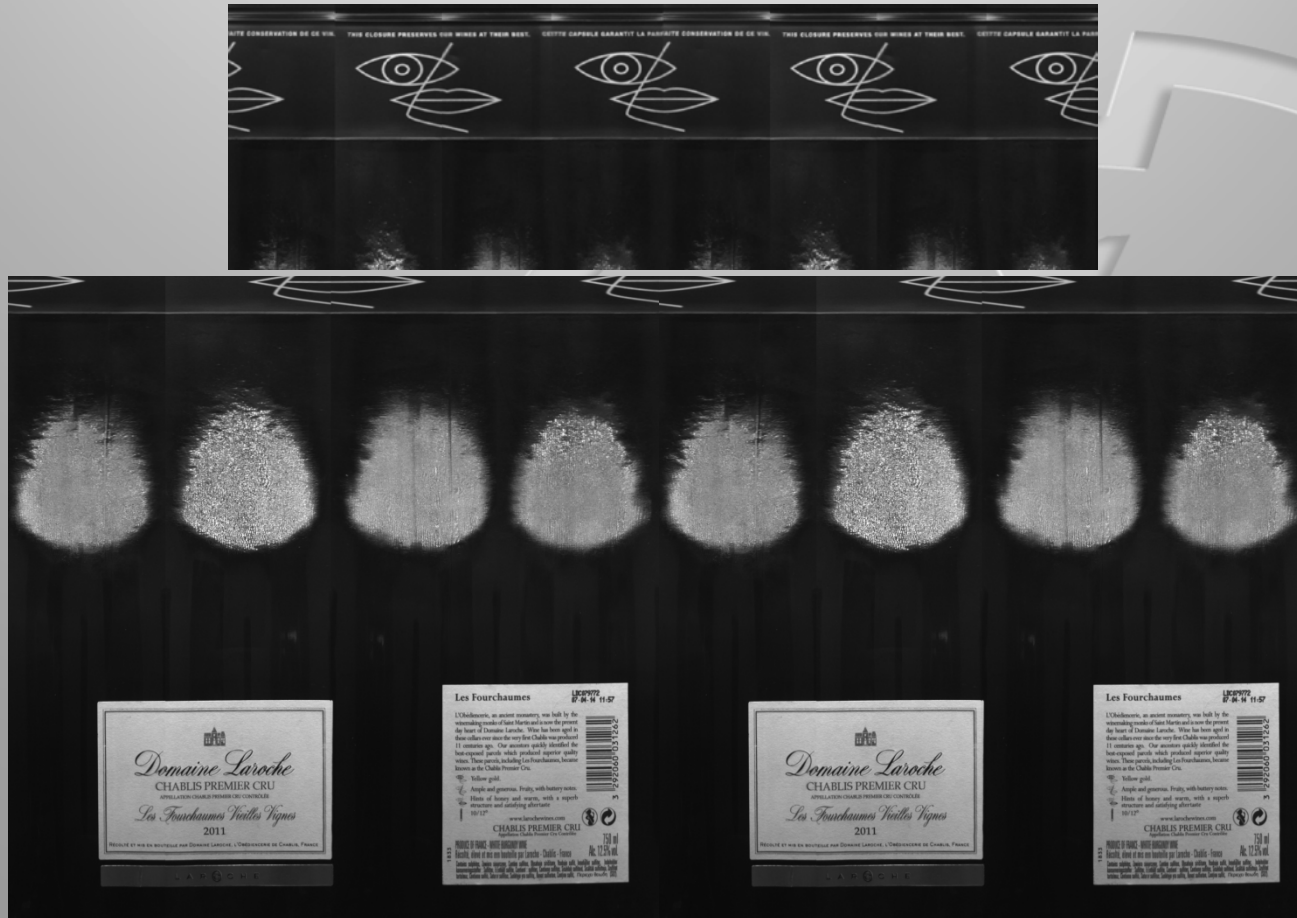


2009

It was initially developed to control labeling quality on in unoriented bottles having **any shape**, where a perfect 3D reconstruction is the key success

2 Different Inspection for Body & Neck labels

- The inspections of the labels and of the cap covering the cork are made in different unwrapped images



How is it possible?

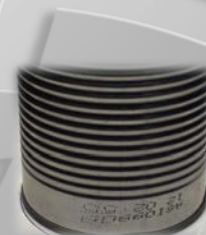
SETUP – CVS360



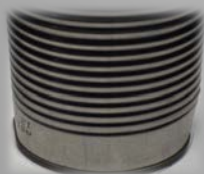
View 1 –
0°



View 2 –
90°



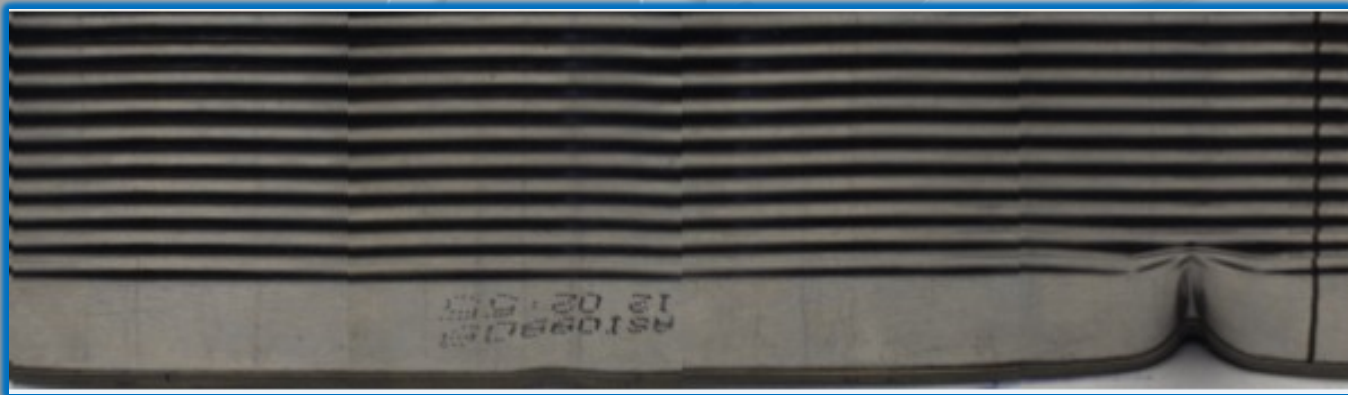
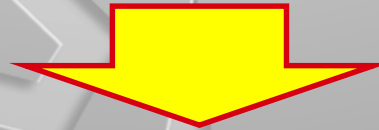
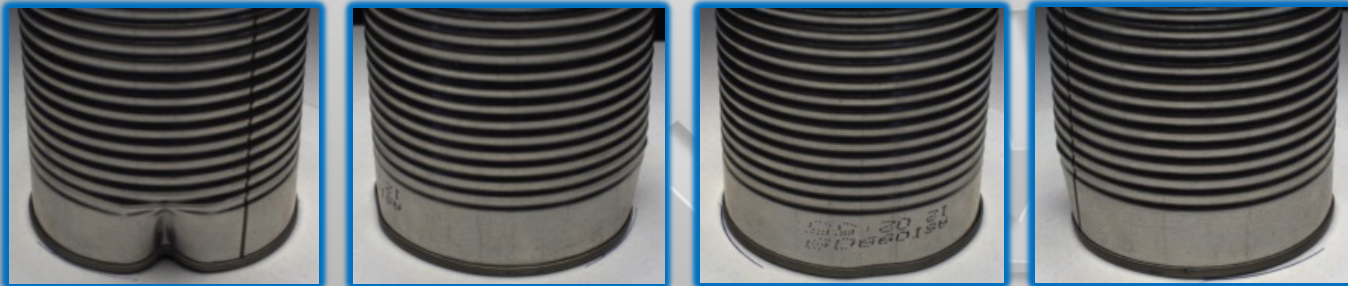
View 4 –
270°



View 3 – 180°



APPLIED ON FOOD CAN FOR SEAMING INSPECTION



APPLIED ON
FOOD CAN
DECORATED

2009-2015



The new CVS360-3D ElioSCAN

Full decoration
inspection
for cans



Our Vision is Your Quality



ElioScan for 2 PIECES CAN



Print inspection of Decorated and Coated metal sheets

For both new line scan cameras and new lighting system by mid 2016!!!

• Print inspection in decorated metal sheets – Key features

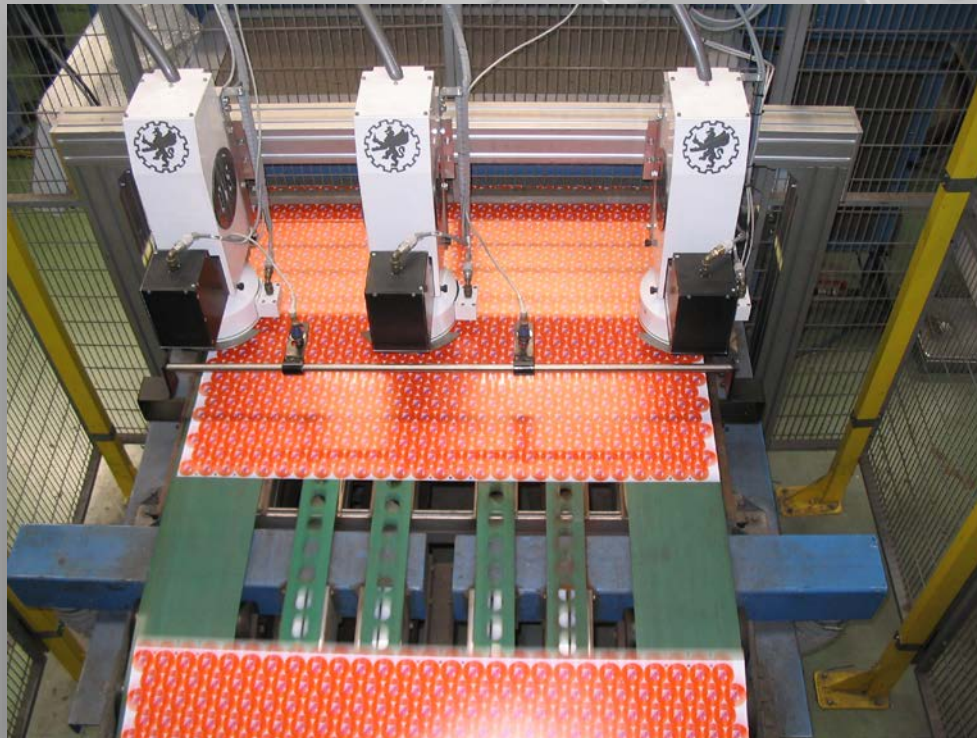
- ✓ In line to any new or existing printing line
- ✓ Statistical inspection of every printed sheet
- ✓ Controls color quality in LAB color space
- ✓ Capable to detect the most common and diffused printing defects, such as:
 - ✓ Off registration
 - ✓ Off square
 - ✓ Color planes presence
 - ✓ Color shade, hue and saturation in LAB color space

- **Print inspection in decorated metal sheets – Key features**

- ✓ Installs 3 area scan color cameras

(BY JUNE 2016 NEW 2 LINE SCAN CAMERAS UNIT!!!)

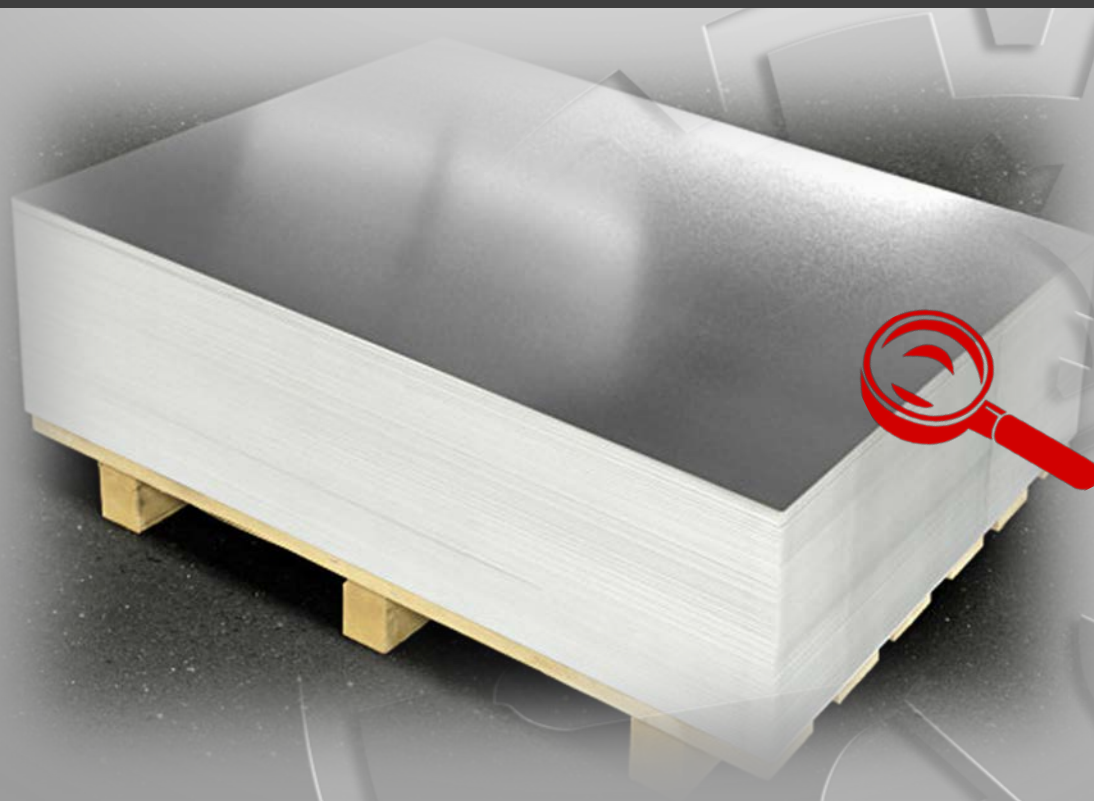
- ✓ Less influence of poorly done conveyors
- ✓ Less influence of fluttering or vibrations
- ✓ Covers up to 80% of sheet surface



- Print inspection in decorated metal sheets – Some detected defects

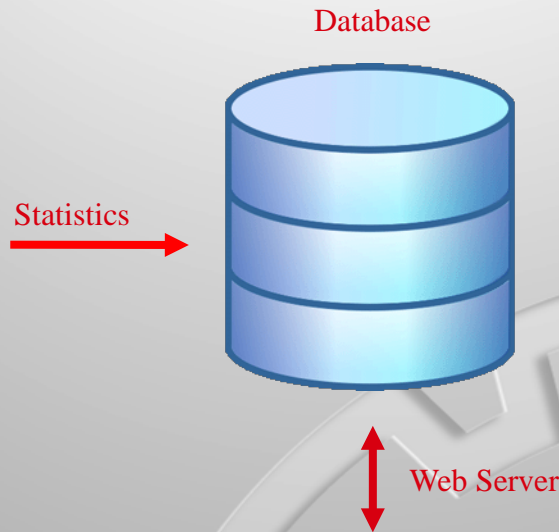


MVS-S-I/E: COATED SHEETS INSPECTION



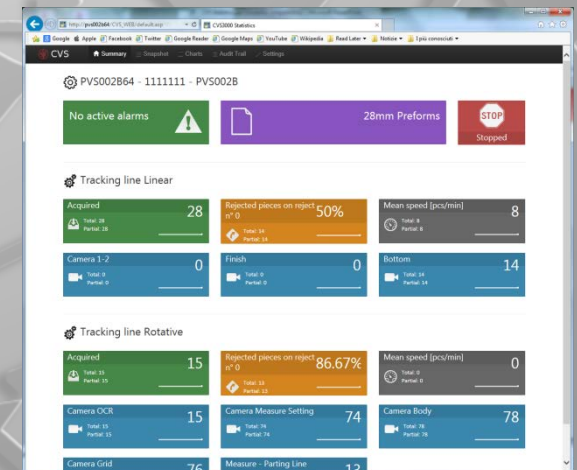
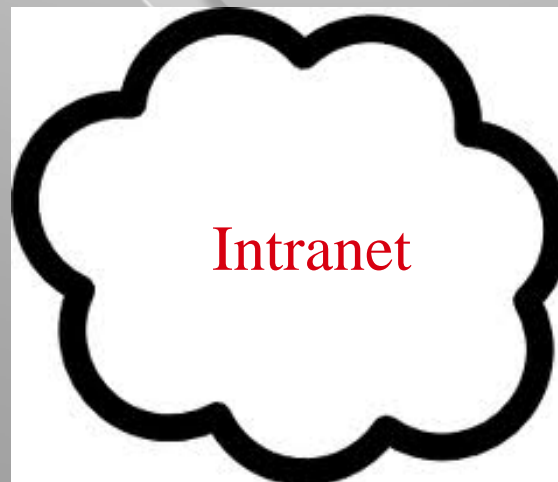
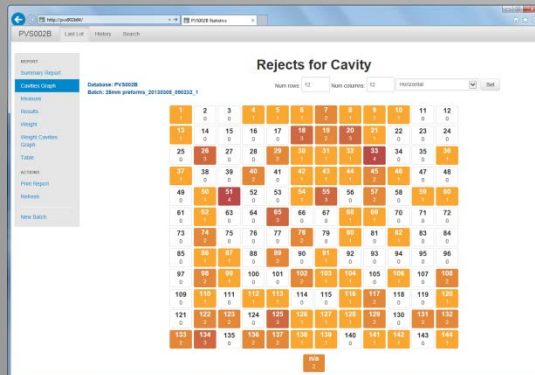
CVS 3000

- **Interconnectivity
& Statistics**
- **Remote Control**

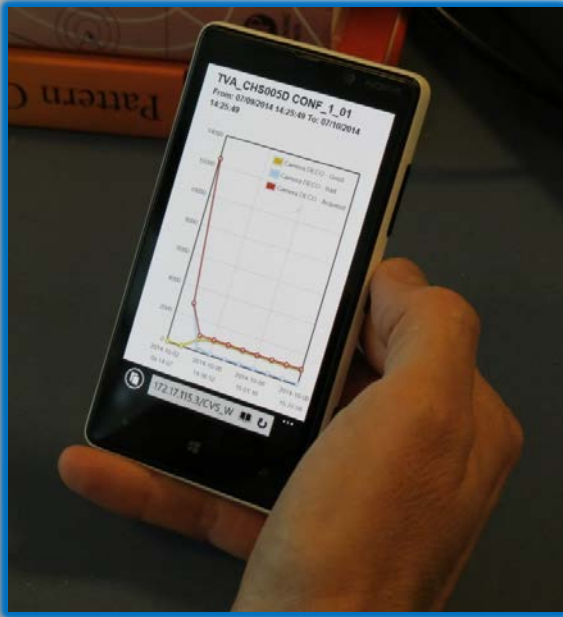


CVS3000 records and provides *statistical information* through a **database**.

The statistics can be easily read on the corporate network through the **web server** provided.



CVS3000 – Statistics and interconnectivity

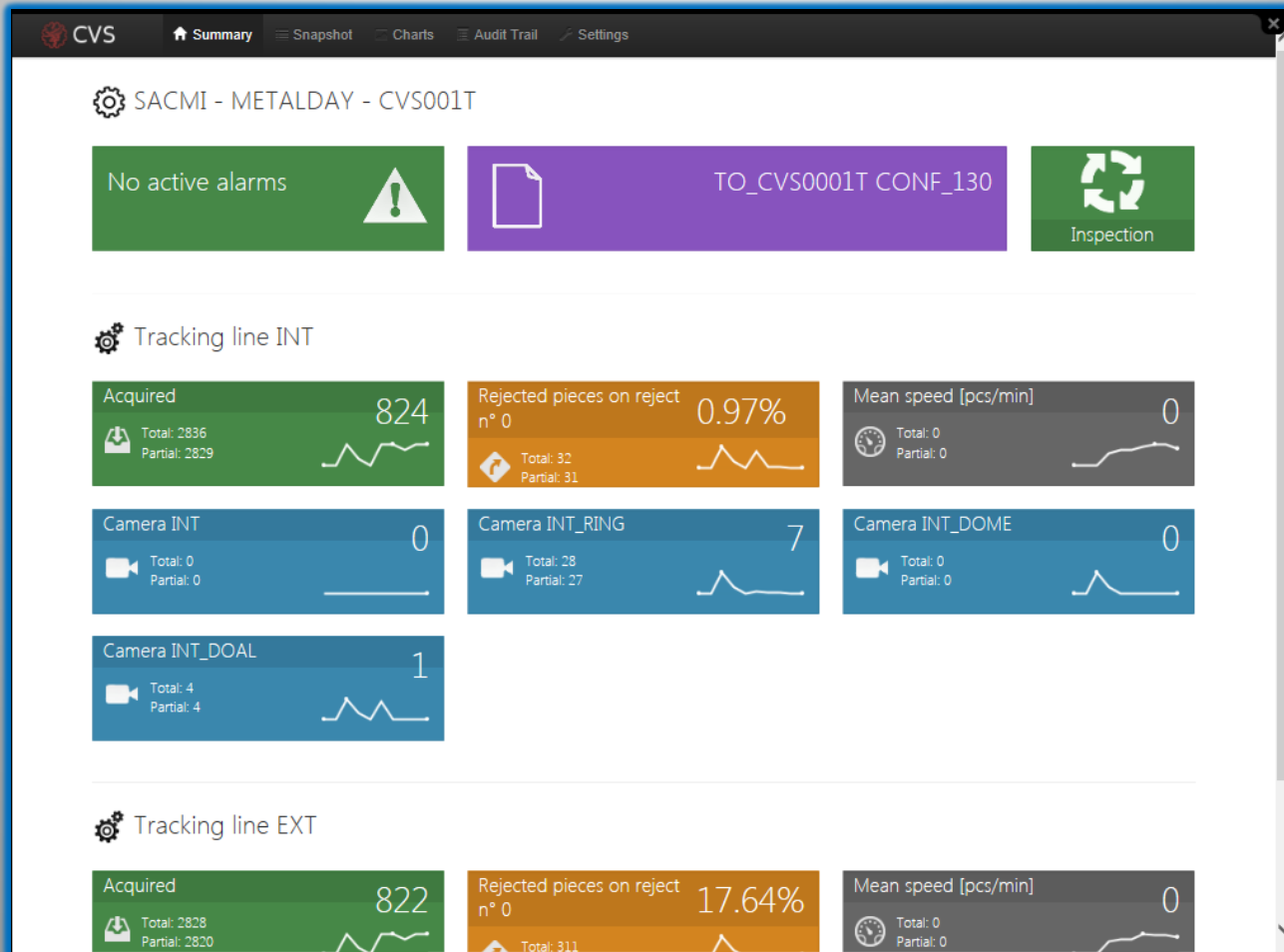


***SACMI Quality Control Data Center
via a WEB SERVER APPROACH
One WEB Page only!!***

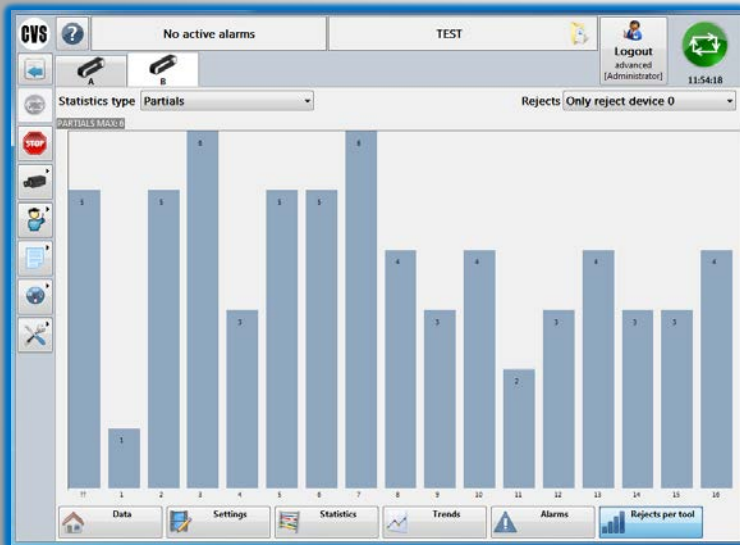


Any connected CVS has ***One web page***, visible in any browser (Internet Explorer, Google Chrome, Apple Safari...) of any computer connected to the Corporate Network, resuming the main information of ***ALL*** the CVS installed in a production shop

The Home Page provides real-time info about a specific CVS.

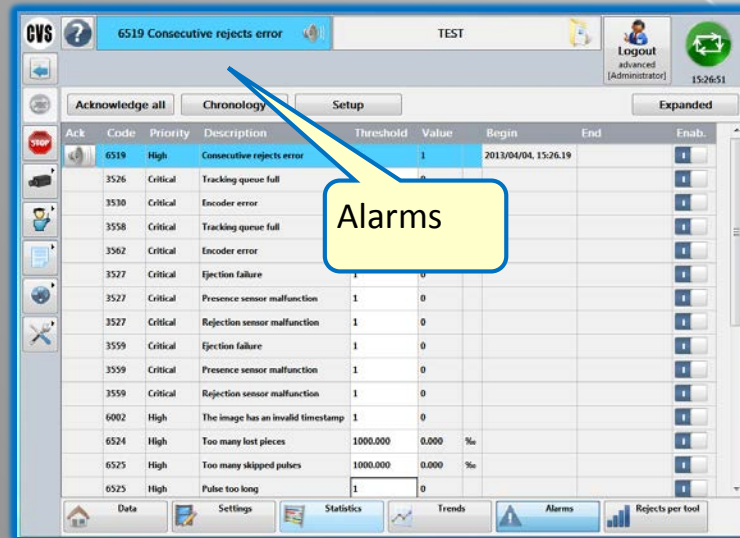


CVS3000 – Statistics and interconnectivity

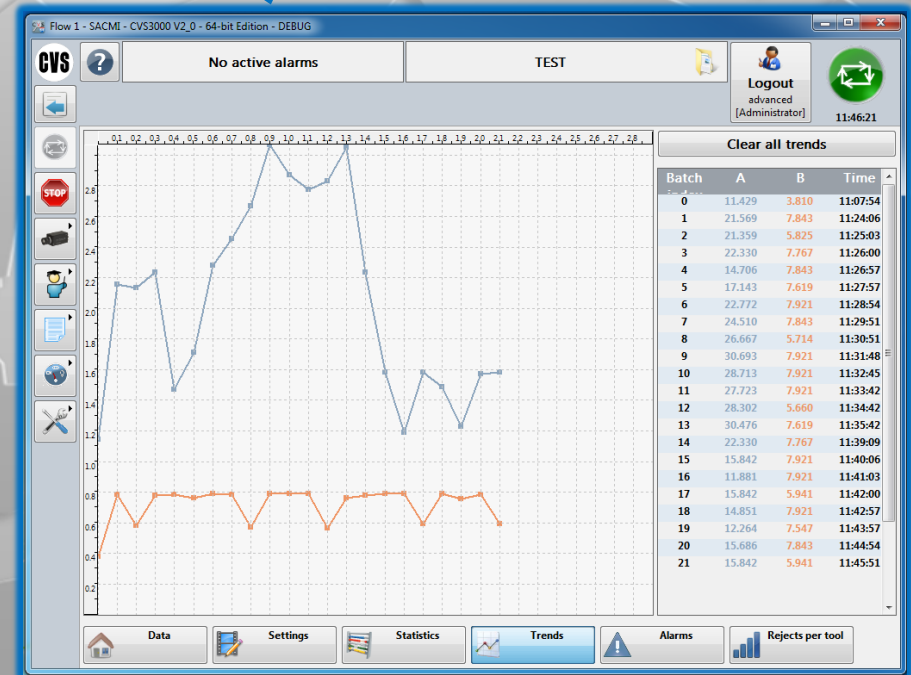


Statistics reject per tool

Trends



Alarms



CVS3000 – Statistics and interconnectivity

The screenshot shows the CVS3000 Audit Trail page. On the left, there's a sidebar with 'TEST' (No active alarms) and a 'Date' filter set to '04/04/2013 11:19:43'. The main area is a table with columns: Time, User, and Message. The table lists various system events. Three callouts are present: 'WHEN' points to the 'Time' column, 'WHO' points to the 'User' column, and 'WHAT' points to the 'Message' column.

Time	User	Message
less than a minute ago 2013-04-04 11:19:28	supervisor	Sensitivity "Decolnspect: Defect" changed 0.625 → 0.574219
6 minutes ago 2013-04-04 11:13:30	No User	The user logged in is changed. Now the current user is supervisor. No User → supervisor
6 minutes ago 2013-04-04 11:13:25	advanced	The user logged in is changed. Now the current user is No User. → No User
6 minutes ago 2013-04-04 11:13:11	advanced	CVS3000 in Inspection
7 minutes ago 2013-04-04 11:13:08		CVS3000 in Stop
7 minutes ago 2013-04-04 11:12:57	advanced	Sensitivity "Decolnspect: Defect" changed 0.574219 → 0.625
7 minutes ago 2013-04-04 11:12:26	advanced	New recipe on Camera 1 C:\Log\2013\soft_2_040413110048_.xml → C:\Log\2013\soft_2_040413111226.xml
7 minutes ago 2013-04-04 11:12:26	advanced	New recipe on Camera 0 C:\Log\2013\soft_2_040413110048_.xml → C:\Log\2013\soft_2_040413111226.xml

The Audit Trail Page provides all the information about activities on a specific machine.

CVS3000 records information about :

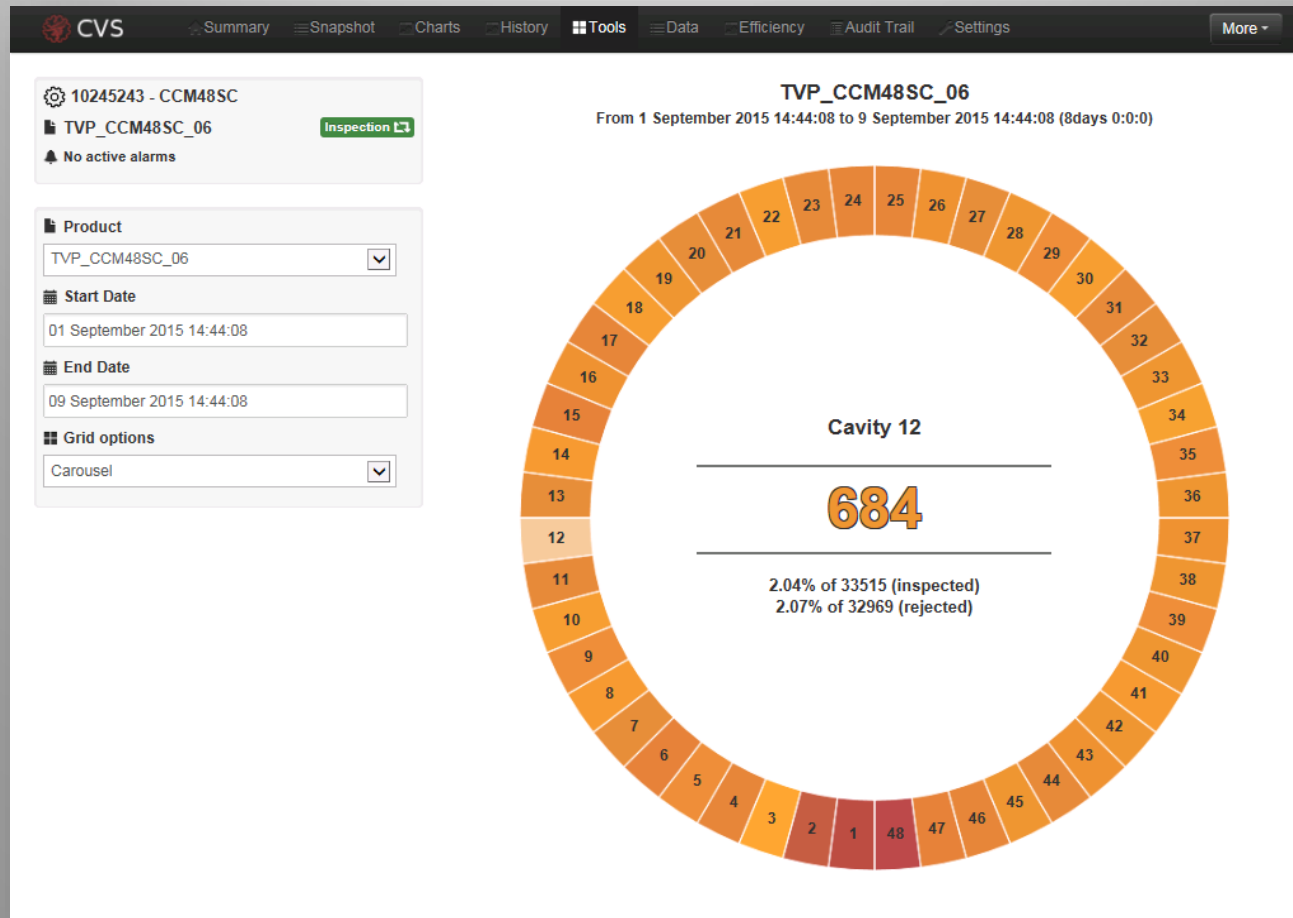
WHEN: date and time of the access

WHO: the person who accessed the system

WHAT: Operation carried out: parameters modification, recipe loading and saving, or any other action on the system

Correlation with upstream units by position of the related tool/device

This page shows statistics of defects by a determined position of a unit upstream. The phase defect/position is maintained with specific sensors

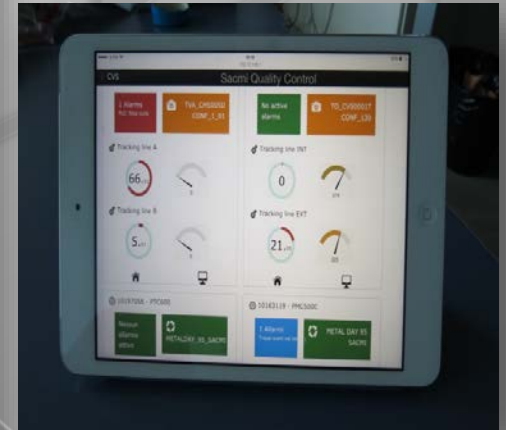
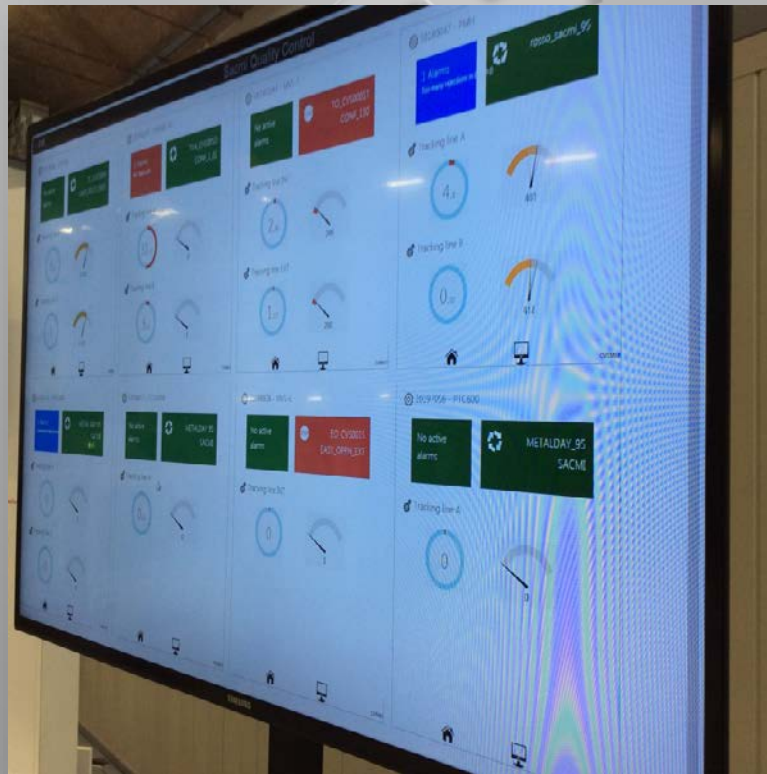


PANORAMA SACMI VISION SYSTEM SUPERVISOR

Panorama Supervisor

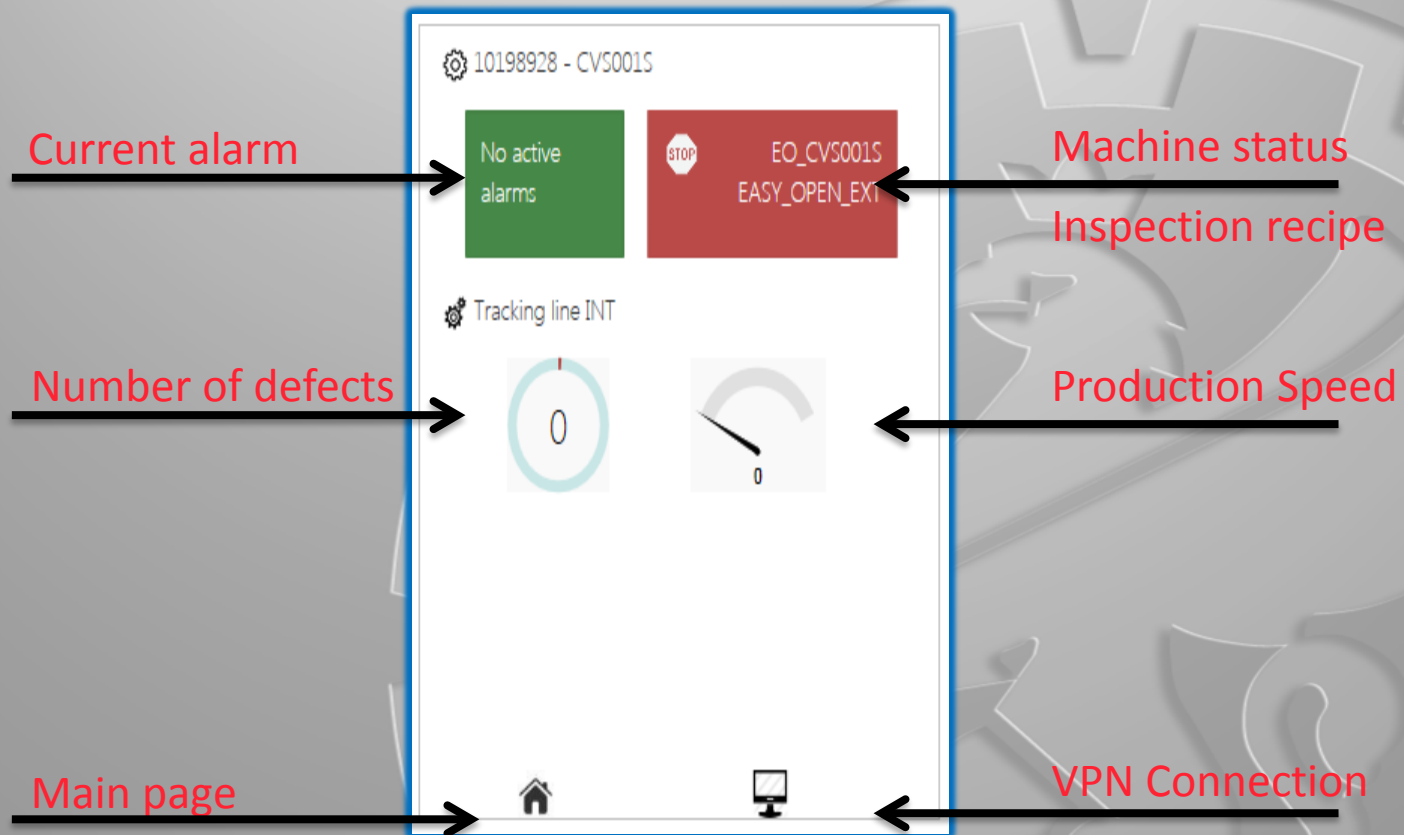
In case of many Sacmi Vision Systems installed in a plant, **PANORAMA** can be used to give real-time information over all the systems: active alarms, main statistical data, current inspection recipe, OEE

This page can also be displayed on any PC connected to a LAN (CVS3000 PC must be connected to the same network)



Panorama

Each tile represents a specific SACMI VISION SYSTEM installed in a production plant. It shows the main production information and allows to connect directly to the CVS to show statistical data. It also permits to modify inspection parameters through a VNC connection



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CONTACT US

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Phone: +39 0521775064

Email: service@parmacontrols.it



Our Vision is Your Quality



SACMI MACHINE VISION: DEEDS not words. WHY?

- 1 – HW: superior platform for cameras coupled with high speed, HiRes cameras with Double Exposure. Possible inspections up to 6.000 ppm
- 2 – SW: very simple slider approach to adjust every tool
- 3 - Lighting system: more intense and distributed leds devices dedicated to each RGB channel
- 4 – Lenses: Dedicated & Customized lenses
- 5 – Sacmi dedication to innovation with huge investment in R&D, this coupled with an engineering Staff of 80 people only for the vision systems BU
- 6 – The partnership with Parmacontrols is putting together an experienced and strong technological structure as is Sacmi with the soft approach and great care to customers' needs typical of a small company



THANX !!



Our Vision is Your Quality





1972-1980



1984-1995



1995-2008



Avion Mudry CAP10^B

GE 05/315 Cognac-Chateaubernard
1980-1984



Nel 1966 Auguste Mudry, proprietario della CAARP (Coopérative des Ateliers Aéronautiques de la Région Parisienne) decise di costruire il successore dello Stampe. Si sarebbe trattato di un velivolo monoplano a due posti affiancati la cui base progettuale era il Super-Emerald di Clude Piel. Il CAP100. Il n° 01 venne costruito ma, purtroppo, in un incidente causato dal superamento dei limiti di volo persero la vita i due piloti a bordo. Per determinare le cause dell'incidente, nell'inchiesta che ne seguì il n° 02 venne distrutto completamente e quindi Mudry decise di passare alla costruzione di un terzo esemplare, che assunse il nominativo di CAP (Construction Aéronautique Parisienne) 10 ed il n° 01. Il prototipo F-WOPX effettuò il primo volo il 22 agosto 1968 ai comandi di Gerard Tabon. In realtà l'aeronautica militare francese aveva già dimostrato il proprio interesse su questo velivolo fin dal 1967, ordinando i n° 01 e 03; in seguito ordinarono anche i primi due CAP10B di serie (n° 01 e 02, modificati, rispetto al CAP10, nella deriva, nei freni, nelle carenature, ed in numerosi altri dettagli) e quindi, il 25 marzo 1970 (ordine n. 70.7100), commissionò altri 26 esemplari (n° da 03 a 28). Il primo volo di un allievo dell'Armée de l'Air su un CAP10B venne effettuato l'11 luglio 1971. Altri velivoli vennero acquistati dalla forza armata negli anni seguenti (n° da 100 a 104, da 115 a 122, da 125 a 130, da 133 a 138) portando il totale dei CAP10B in linea con l'Armée de l'Air a 53 esemplari. Altri 10 velivoli vennero messi in linea nell'aviazione di marina francese (n° da 107 a 112 e da 212 a 215), mentre 20 esemplari vennero ordinati dall'aeronautica messicana (n° da 153 a 172),



uno dall'aeronautica marocchina (n° 184), tre da quella coreana (n° 273.274.281). Il CAP10B n° 20 venne costruito nel 1972 ed inviato all'Armée de l'Air il 15 giugno dello stesso anno, per essere assegnato alla neo costituita EFIPN 307 (Ecole de Formation Initiale du Personnel Navigant) di Clermont-Ferrand-Aulnat (costituita il 01 luglio 1970) con codice 307 SR (oltre al numero dello squadrone, venivano portate sulla fusoliera le ultime due lettere del radio call-sign, in questo caso "SR" da F-SESR). Alla chiusura della EFIPN 307 (avvenuta l'1 luglio 1977) tutti i velivoli vennero versati alla EFIPN 313 "Gévaudan" sempre a Clermont-Ferrand-Aulnat, facente capo al GI313 (Groupeement d'Instruction 313). Il reparto prese in carico i velivoli dalla disciolta unità della quale ne conservò lo stemma sulle derive (la "Bête de Gévaudan" ossia la bestia di Gévaudan). Il 13 marzo 1980 venne poi preso in carico dalla GE315 (Groupeement Ecole 315, costituita il 06 giugno 1980) di Cognac-Chateaubernard con codice individuale 315 SR ed il simbolo del "dragone cinese" sulla deriva. Il velivolo proseguì poi la sua carriera militare con l'Equipe de Voltige Aérienne del 312 Groupeement d'Instruction (GI312), sulla base di Salon de Provence, con codice individuale "VL" (derivante dal nuovo radio call-sign F-TFVL) ed il simbolo dell'"aquila che nutre gli aquilotti" sulla deriva, reparto nel quale transitò in data 22 novembre 1984. Il 26 gennaio 1995 lasciò il servizio operativo ed in seguito, dopo la radiazione dalla forza armata, ricevette le marche civili F-GKJI. Occorrerà aspettare il settembre 2008 per rivedere il velivolo n° 20 indossare nuovamente la livrea militare, con riprodotte le insegne della EFIPN 315.