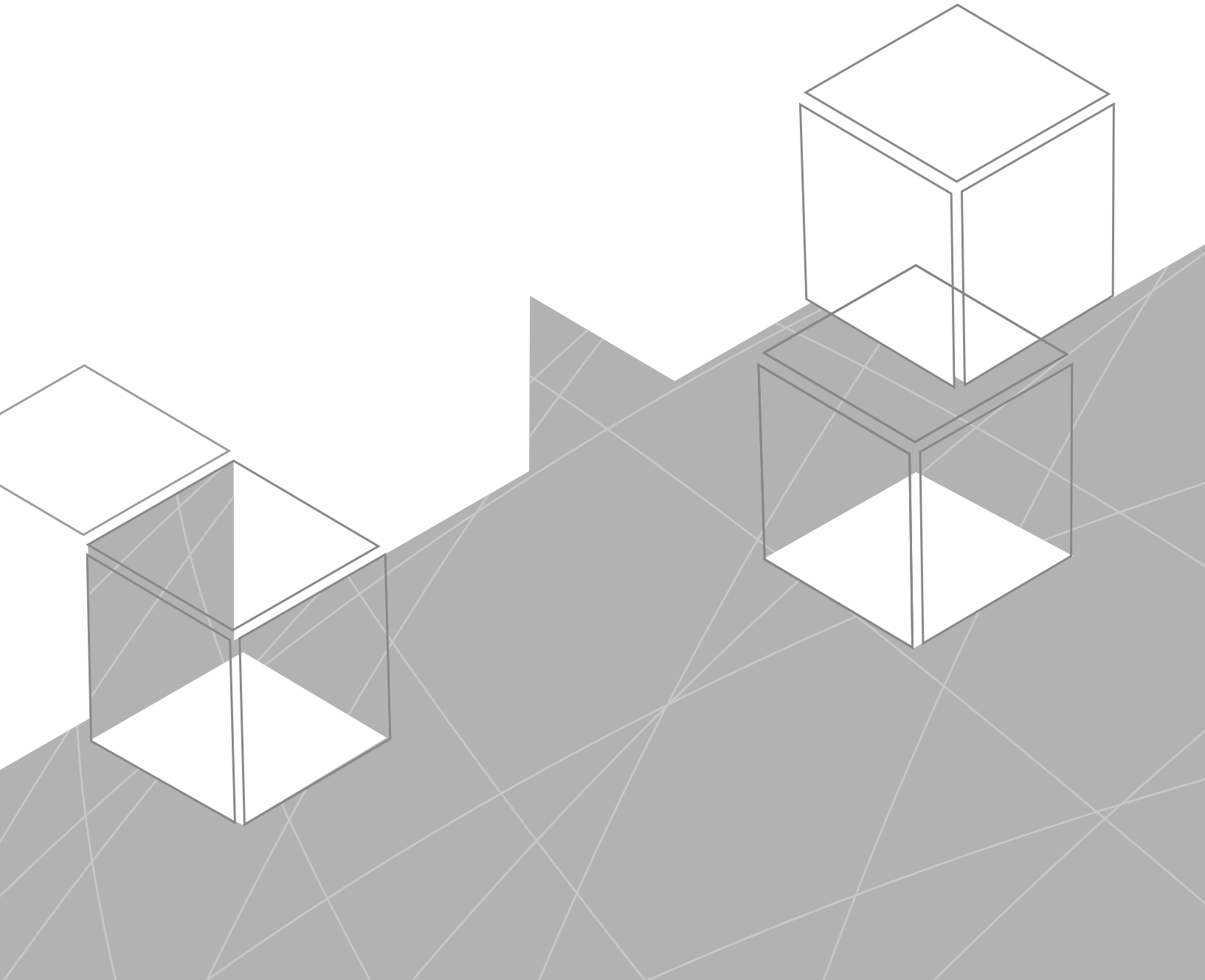
SEAVISION

English



SEAVISION

WHO WE ARE 4

01 | **HARLEQUIN** 6
BLISTERS AND PHARMACEUTICAL KITS INSPECTION

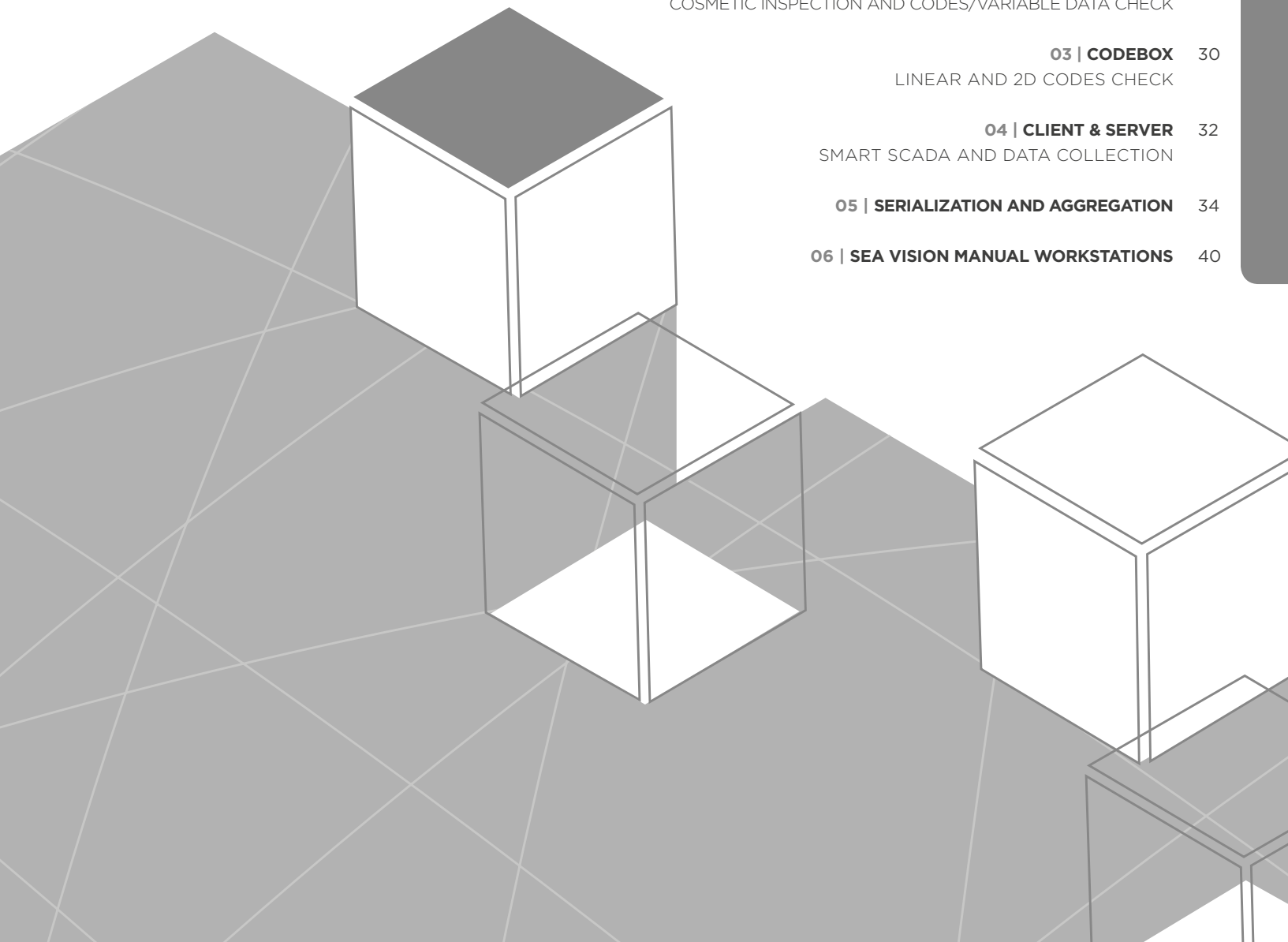
02 | **OCV** 16
COSMETIC INSPECTION AND CODES/VARIABLE DATA CHECK

03 | **CODEBOX** 30
LINEAR AND 2D CODES CHECK

04 | **CLIENT & SERVER** 32
SMART SCADA AND DATA COLLECTION

05 | **SERIALIZATION AND AGGREGATION** 34

06 | **SEA VISION MANUAL WORKSTATIONS** 40



WHO WE ARE

SEA VISION PROVIDES VISION SYSTEMS FOR THE PHARMACEUTICAL SECTOR

SEA Vision owes its success to the quality of its technological solutions.

With more than 3500 vision systems worldwide and a perspective of continuous growth in terms of turnover and dimension, SEA Vision today is a market leading player.

Through consolidated expertise and continuous commitment to research and development, SEA Vision offers tailored solutions for cutting-edge projects.

SEA VISION worldwide

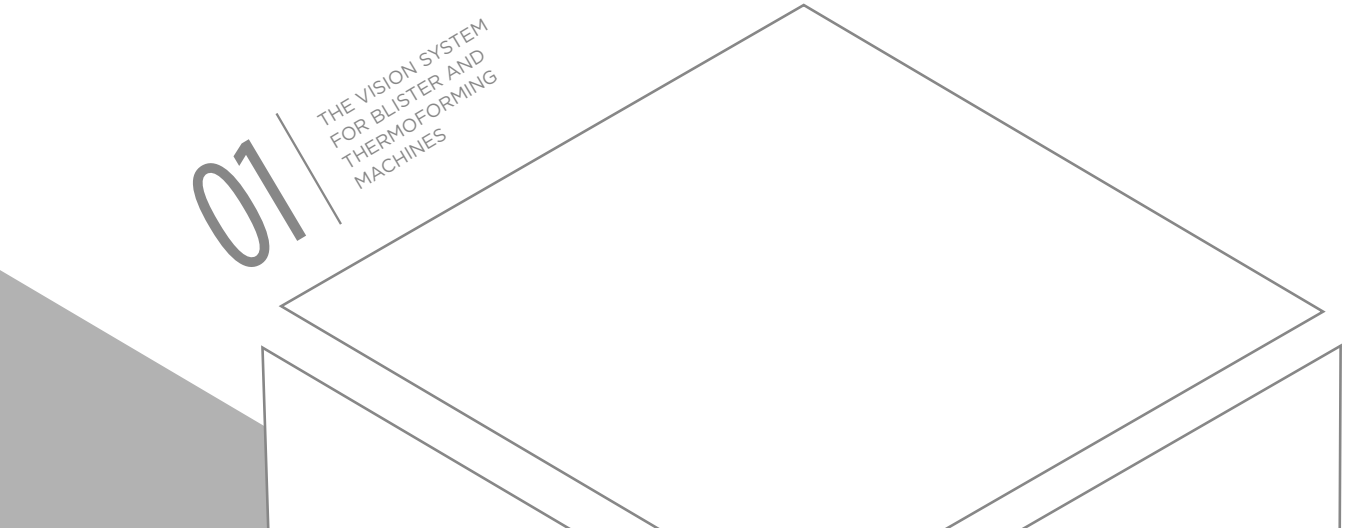
Thanks to a network of sales and service facilities located in all major global markets, SEA Vision provides its worldwide customers with technical assistance and training.

HARLEQUIN

BLISTERS AND PHARMACEUTICAL KITS INSPECTION

Harlequin is the vision system dedicated to blister and thermoforming machines for the inspection of oral solids and pharmaceutical components.

01 | THE VISION SYSTEM FOR BLISTER AND THERMOFORMING MACHINES



Harlequin's software is developed under operating system Windows 7 (64 bit) and uses PC-Based hardware devices such as: Quad & Octa core CPU's, very high resolution cameras and LED light units with custom-design. In order to simplify the system self-programming, Harlequin has a Wizard tool that allows the operator to set up both working formats and article parameters for products packaged in plastic material (white, transparent, coloured PVC) and on aluminium (ALU-ALU).

Technical information

- Unlocked HMI panel during automatic work
- Image reconstruction for a complete object view
- Graphical oscilloscope for signal error debugging
- SVM (SEA Vision Machine):
  integrated virtual PLC for machines rejection management
- Compliant to GMP and FDA 21 CFR Part 11

HARLEQUIN **Evolution and Lite**

Harlequin has two versions, **Evolution** and **Lite**, which are different in terms of their performance and scalability.

Harlequin Evolution is a complete inspection system, able to manage several packaging machines at the same time (thanks to multifunction cameras) and to grant many additional checks, for example: barcode and 2D code reading on cartoners, on line printed variable data with integrated printer management, printing artworks checks (PQV) from digital/flexographic printers.

Harlequin Lite is the system's Entry Level version, dedicated to product's presence control and code check on aluminium foil. Optional packages can be added to the system to suit more complex inspections.

HARLEQUIN EVOLUTION	HARLEQUIN LITE
CPU: Quad core **OS:** Windows 7 **Application:** 64 bit **Touch-screen** **Ram:** up to 8 GB **HMI:** unlocked during the automatic work **Interface:** Ribbon Style	**CPU:** Dual core **OS:** Windows 7 **Application:** 64 bit **Touch-screen** **Ram:** 2 GB **HMI:** locked during the automatic work **Interface:** classic
LCD TFT size: 12" **Interface:** touch-screen or trackball **I/O BASE:** 16 input + 16 output opto-coupled at 24V, watch-dog on outputs **I/O OPTIONAL:** 24 input + 24 outputs opto-coupled at 24V, watch-dog on outputs	**LCD TFT size:** 12" **Interface:** touch-screen or trackball **I/O BASE:** 16 input + 16 output opto-coupled at 24V, watch-dog on outputs **I/O OPTIONAL:** 24 input + 24 output opto-coupled at 24V, watch-dog on outputs
Light: LED **It supports BACKLIGHT for tray inspection:** optional (Components pack)	**Light:** NEON **LED:** optional **It doesn't support BACKLIGHT for tray inspection**
Max cameras for Harlequin: 2 **Tv Alucode with special Dome light** for code on aluminium foil **Max 14 cameras** can be installed on separate machine also for PQV and other checks **Image resolution and depth:** high 1376 x 1032, RGB 24 bit	**Max cameras for Harlequin:** 2 **Tv Alucode with special Dome light** for code on aluminium foil **Image resolution and depth:** standard 768 x 576, RGB 24 bit

MEASUREMENT ACCURACY (GEOMETRICAL)

HQ EVOLUTION	HQ LITE
✓ Difference in area <4%	✓ Difference in area <8%
✓ Difference in length <4%	✓ Difference in length <8%
✓ Broken or chipped tablet <4%	Broken/chipped tablet <5% with Symmetry pack

MEASUREMENT ACCURACY (PICTORIAL)

HQ EVOLUTION	HQ LITE
✓ Difference in saturation <5%	✓ Difference in saturation <10%
✓ Difference in hue <2%	✓ Difference in hue 5%
✓ Difference in value <5%	✓ Difference in value <10%
✓ Dispersion RVB extreme	

SPECIAL SOFTWARE FEATURES

HQ EVOLUTION	HQ LITE
✓ Wizard for the single product's self programming	✓ Wizard for the single product's self programming
✓ Wizard for the multi-product's self programming	Wizard for the multi-product's self programming
Cross check parameters/articles (Components pack)	

REJECTION

HQ EVOLUTION	HQ LITE
✓ Integrated PLC functions for the rejection without additional devices	✓ Integrated PLC functions for the rejection without additional devices
✓ Real time display of the shift registers	✓ Real time display of the shift registers
✓ Graphic oscilloscope for signal error debugging	✓ Graphic oscilloscope for signal error debugging
✓ Generic shift registers for tracking external signals	

WEB TYPE

HQ EVOLUTION	HQ LITE
✓ BLISTER (tablets, capsules, etc...)	✓ BLISTER (tablets, capsules, etc...)
✓ TRAY (vials, syringes, needles, kits, etc...)	

MEASURED PARAMETERS

HQ EVOLUTION	HQ LITE
✓ Area (Number of pixels of the object)	✓ Area (Number of pixels of the object)
✓ Colours	✓ Colours
✓ Shape 1 and shape 2	✓ Shape 1 and shape 2
✓ Shape 3 and shape 4: symmetry	Shape 3 and shape 4: symmetry (Symmetry pack)
✓ Black spots on the product	Black spots on the product (Extra-check pack)
✓ Presence of powder around the product	Presence of powder around the product (Extra-check pack)

EXTRA CHECKS

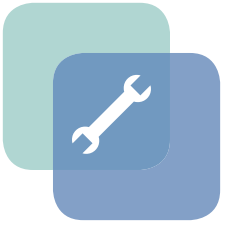
HQ EVOLUTION	HQ LITE
✓ Multi-product management	Multi-product management (Multi-product pack)
✓ Double tablet	Double tablet (Extra-check pack)
✓ Fragments in cavity	Fragments in cavity (Extra-check pack)
✓ Product out of cavity	Product out of cavity (Extra-check pack)
✓ Foil splice	Foil splice (Extra-check pack)
✓ Dirty foil	Dirty foil (Extra-check pack)
✓ Check of the machine step	Check of the machine step (Extra-check pack)
✓ Asynchronous shift register	Alucode
Multifunction checks with additional cameras: OCV, PQV, barcode, Programmable Measures	
Alucode	

User access FDA 21 CFR PART 11 compliant

Alarm signals

Events logged into a file

Audit T rails



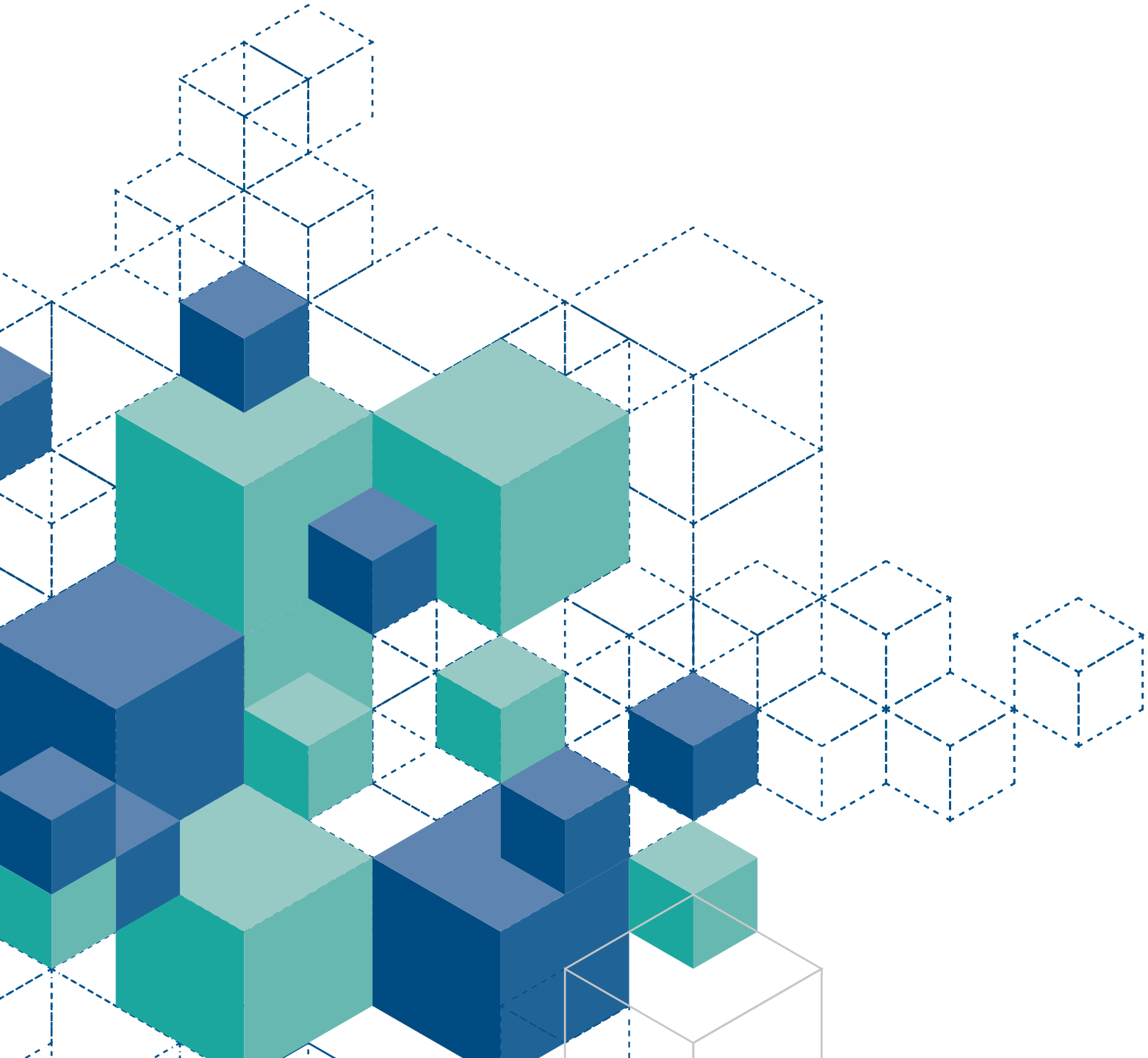
Direct modem connection

Internet connection to SEA Vision server

Compliant to GAMP 4 / 5

HARLEQUIN

BLISTERS AND PHARMACEUTICAL KITS INSPECTION

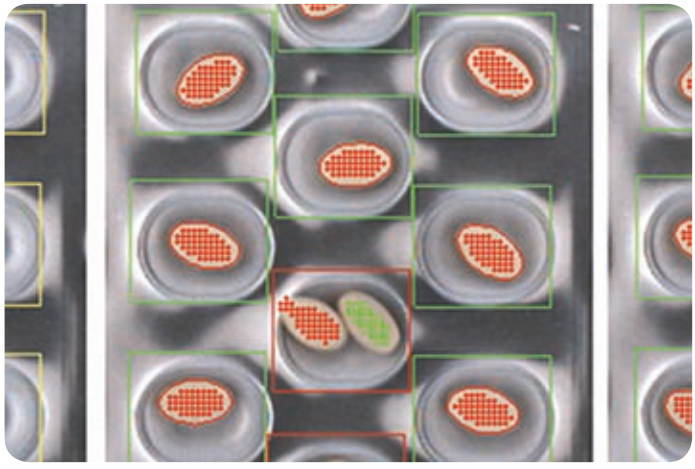


CASE HISTORY

BLISTERS AND PHARMACEUTICAL KITS INSPECTION

CHECK OF TABLETS AND CAPSULES ON ALU-ALU

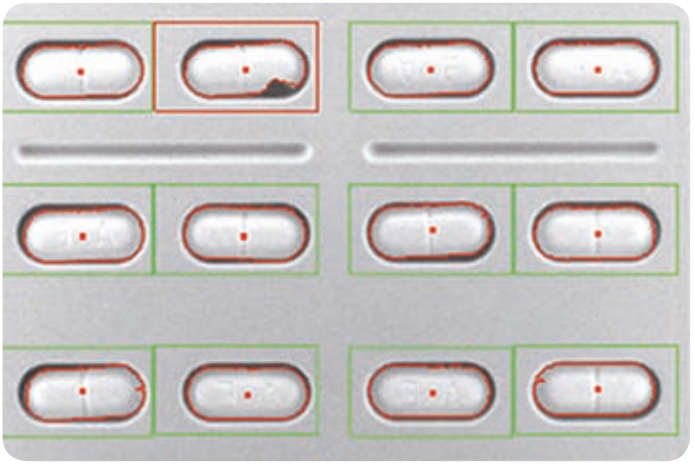
Software Licence: Harlequin



Check of presence, colour and integrity of tablets/capsules packaged on ALU-ALU material. Check of double product presence or foreign bodies in the same cavity.

CHECK OF WHITE CAPSULES ON WHITE PVC

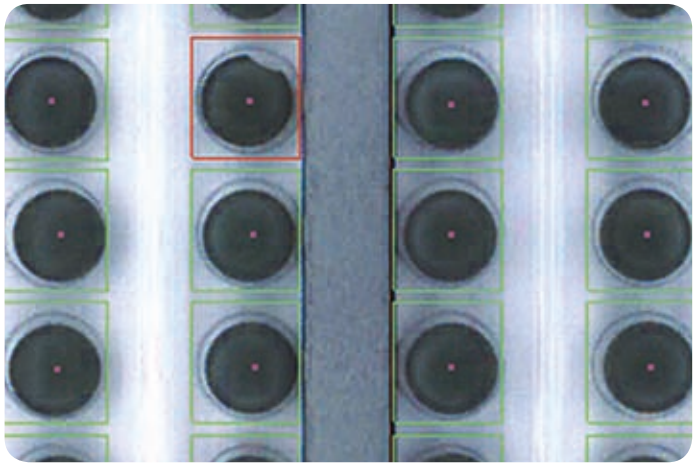
Software Licence: Harlequin



Check of white capsules on white PVC blister. The Software also performs a chromatic measurement of the object colour, black spot detections on the product surface and tablet mix-up inside the same blister.

CHECK OF TABLETS ON TRANSPARENT PVC

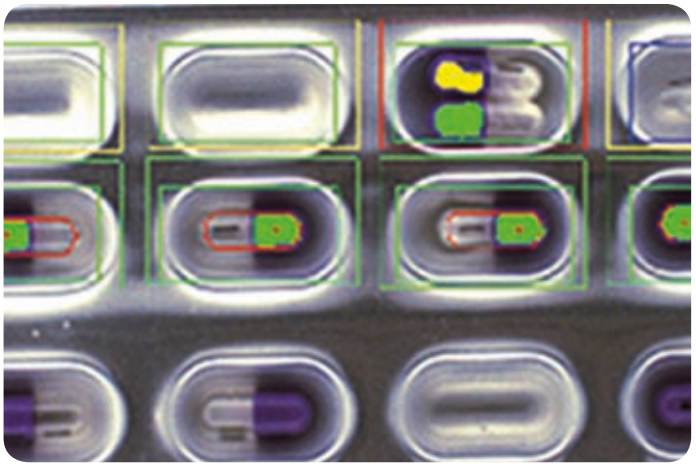
Software Licence: Harlequin



Presence, colour and defect checks on products packaged in transparent PVC (clear or coloured).

BLUE/TRANSPARENT CAPSULES IN BLISTER

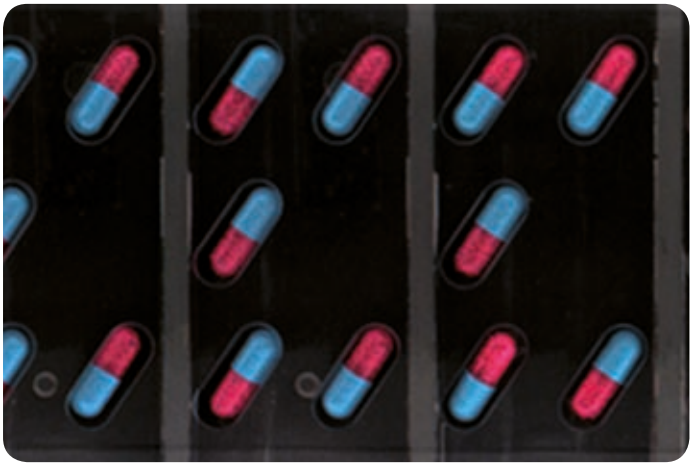
Software Licence: Harlequin



Presence check of blue/transparent capsules in blisters. The control also verifies the presence of double product in the same cavity.

CHECK OF CAPSULES ON PVC

Software Licence: Harlequin



Presence, colour and integrity check of the capsules packaged in a PVC blister. The system detects half capsules, opened or excessively closed capsules.

CHECK OF COMPONENTS IN TRAY

Software Licence: Harlequin

Check of all the different components in the pharmaceutical tray either packaged in white or transparent PVC, or in cartons.

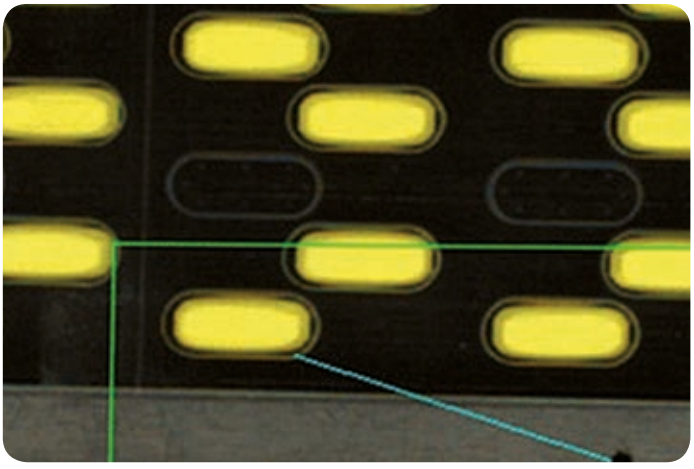
TABLETS INTEGRITY IN THE BOTTLE LOADER

Software Licence: Harlequin

Check of the presence of tablets falling through the bottle loader guide. The system controls both the tablets integrity and the correct filling of the bottle.

CHECK OF THE BLISTERING MACHINE STEP

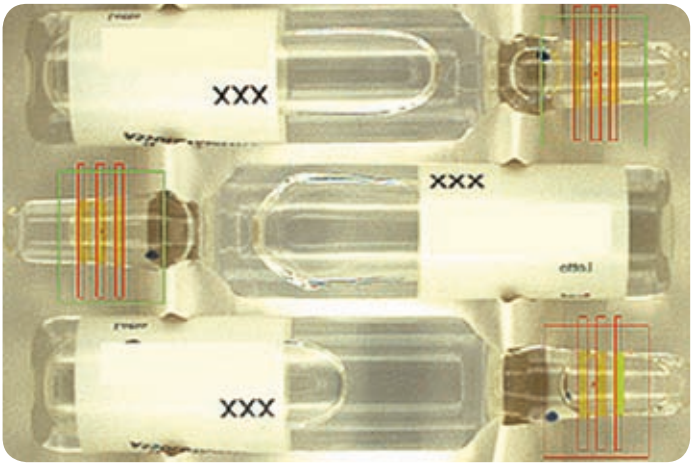
Software Licence: Programmable Measures



The blistering machine step is checked through the measurement of the distance between a fixed point of the blistering machine web and a variable point inside the blister.

CHECK OF COLOUR RINGS ON AMPOULES

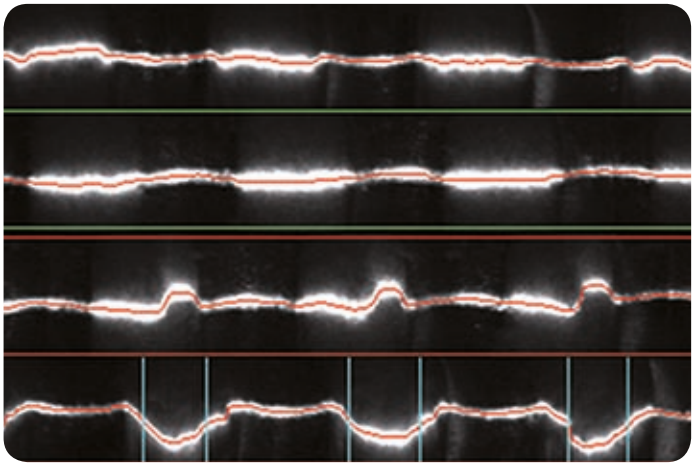
Software Licence: Harlequin



Check of presence and colour of rings on ampoules. The software detects the pixels' sizes and the distance between the rings.

3D CHECK OF POWDER FILLING IN CAVITY

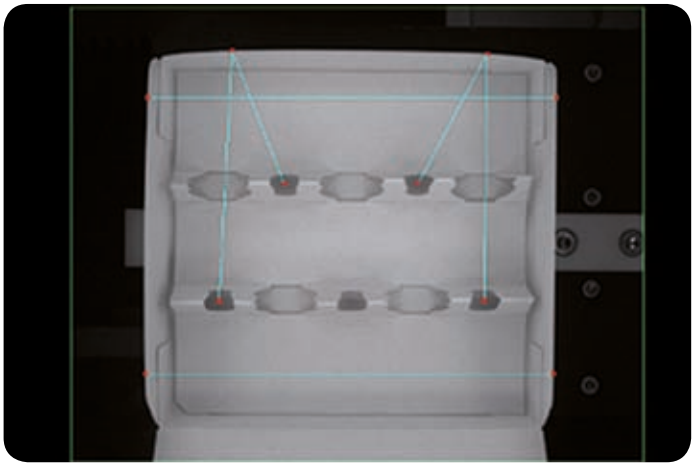
Software Licence: Programmable Measures



This application inspects the correct blister's cavity filling, using a 3D measurement of the powder inside the cavity.

CHECK OF THE CORRECT CASE FORMING

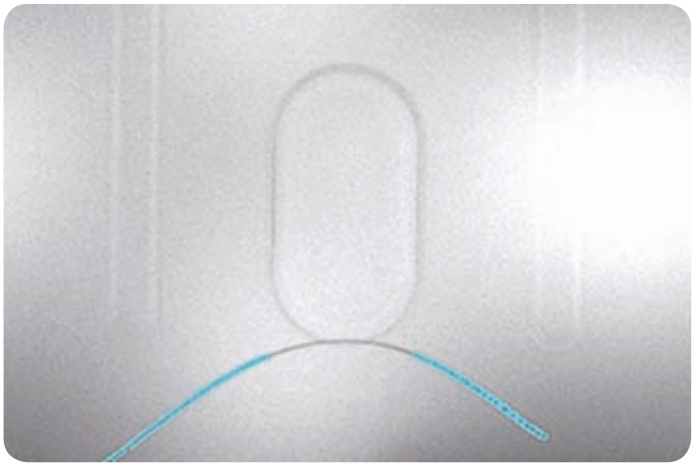
Software Licence: Programmable Measures



Check of the correct case forming and positioning of components.

BLISTER IMPURITIES CHECK

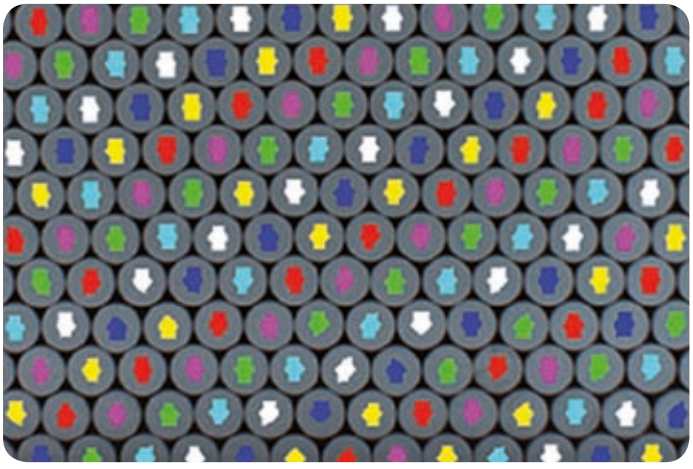
Software Licence: Programmable Measures



Check of the impurity on blisters with the usage of backlights placed under the blister.

VIALS COUNT

Software Licence: Programmable Measures



Count of the number of vials in a box (or inside cartons). The measure can refer to a value set up at batch start.

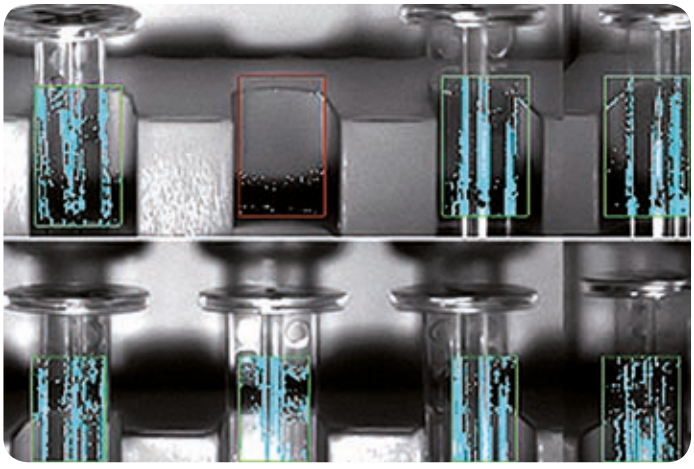
CHECK OF CASE FORMING FOR COMPONENTS INSERTION

Software Licence: Programmable Measures

This application verifies the correct case forming, and detects possible non-compliant packages.

CHECK OF TRANSPARENT SYRINGES' PLUNGER ROD PRESENCE IN CASE

Software Licence: Programmable Measures



Check of the presence of transparent syringes' plunger rod in the case.

CAVITY FORMING CHECK

Software Licence: Programmable Measures

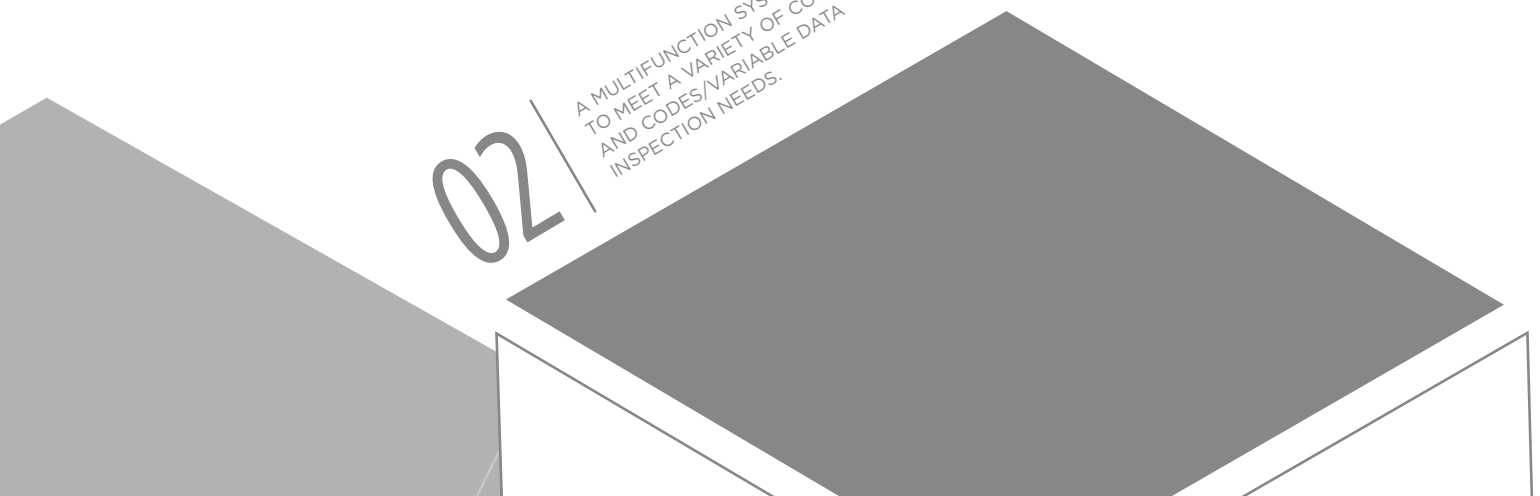
This application inspects the correct blister forming and filling (verification of the correct positioning of the tablet inside the cavity).

OCV

COSMETIC INSPECTION AND CODES/VARIABLE DATA CHECK

Conceived as an optical character's recognition instrument, OCV system has then turned into a product which is able to perform several types of controls with the highest flexibility, concerning both the cosmetic aspect of the packaging and the printed codes/characters.

02 | A MULTIFUNCTION SYSTEM ABLE TO MEET A VARIETY OF COSMETIC AND CODES/VARIABLE DATA INSPECTION NEEDS.



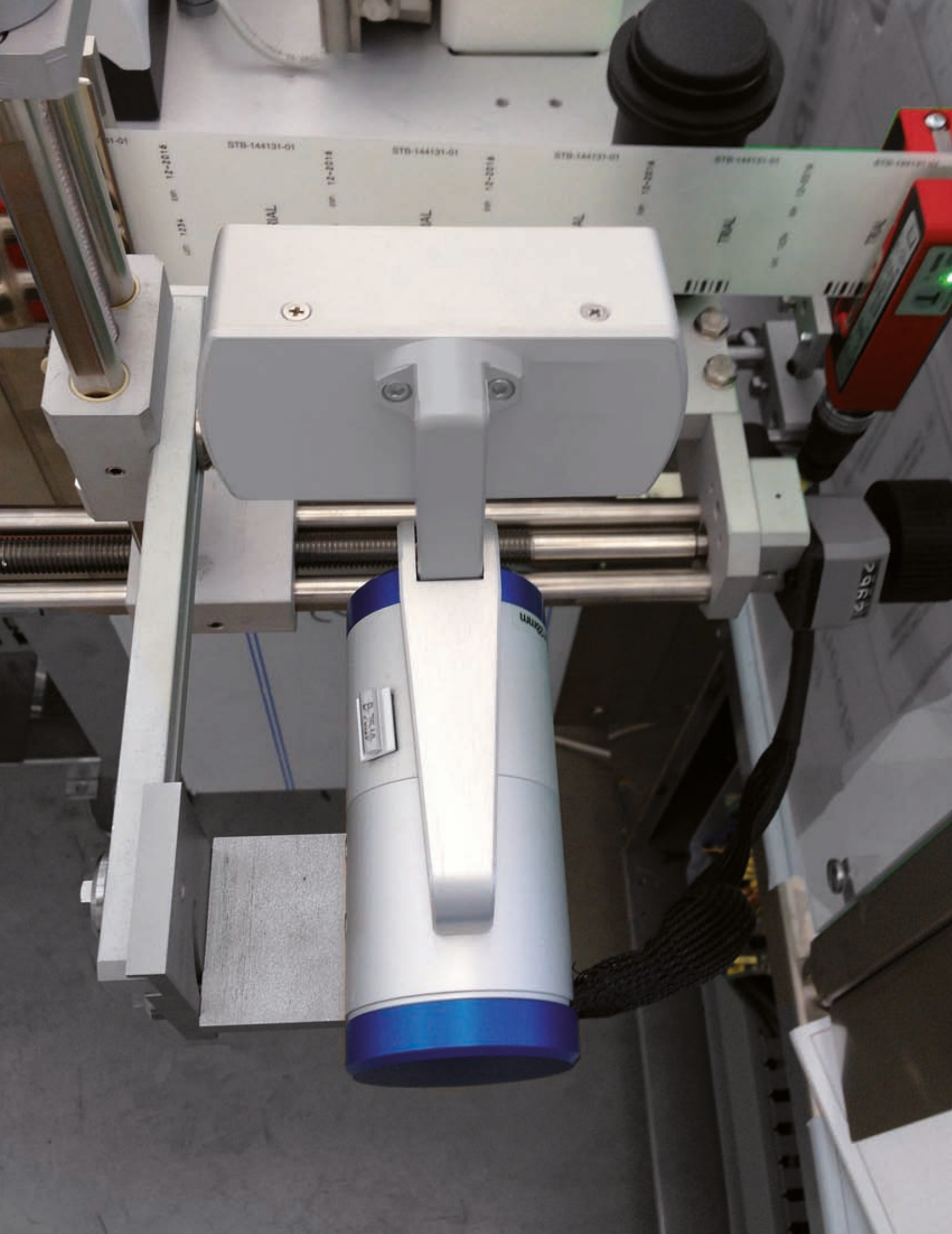
The OCV structure is modular and scalable: new software functions can be added over time, as every kind of control is associated to specific licences.
In order to simplify the system programming, OCV has a Wizard that guides the operator during working formats creation.

OCV **Evolution and Lite**

OCV is available in two versions, Evolution and Lite, which are different in terms of system expandability.
OCV Lite is particularly suitable for applications that require a maximum of two cameras, whereas OCV Evolution can perform multifunction checks without limitations to performance or expandability.

OCV Evolution can simultaneously manage multiple connected packaging machines ensuring the highest flexibility and integration on the packaging lines.

	OCV EVOLUTION	OCV LITE
HARDWARE		
CPU	QUAD CORE	QUAD CORE
RAM	UP TO 8 GB	2 GB
DISPLAY	15”	12”
CAMERAS		
MAX CAMERAS	16	2 (up to 6 cameras max. with optional package)
RESOLUTION FOR B&W AND RGB	Std RES 640x480 - High RES 1024 x 768 Very high RES 1376x1032	Std RES 640x480 - High RES 1024 x 768 Very high RES 1376x1032
LIGHT		
LED	High intensity LED lights, customized for special applications	High intensity LED lights, customized for special applications
INPUT & OUTPUT		
BASE	16 inputs+16 outputs opto-coupled at 24V, watch dog on outputs	16 inputs+16 outputs opto-coupled at 24V, watch dog on outputs
OPTIONAL	24 inputs + 24 outputs opto-coupled at 24V, watch dog on outputs	No



Typical applications

The flexibility of OCV Software allows customized solutions for every inspection requirement. OCV typical applications include: OCV/OCR printed characters check, codes check, vial's skirt, colour rings, completed cartons in a layer, print quality verification (PQV) for artwork printed online. Moreover, OCV includes a Programmable Measures tool, which is a powerful and adaptable instrument that allows to perform a wide range of special controls.

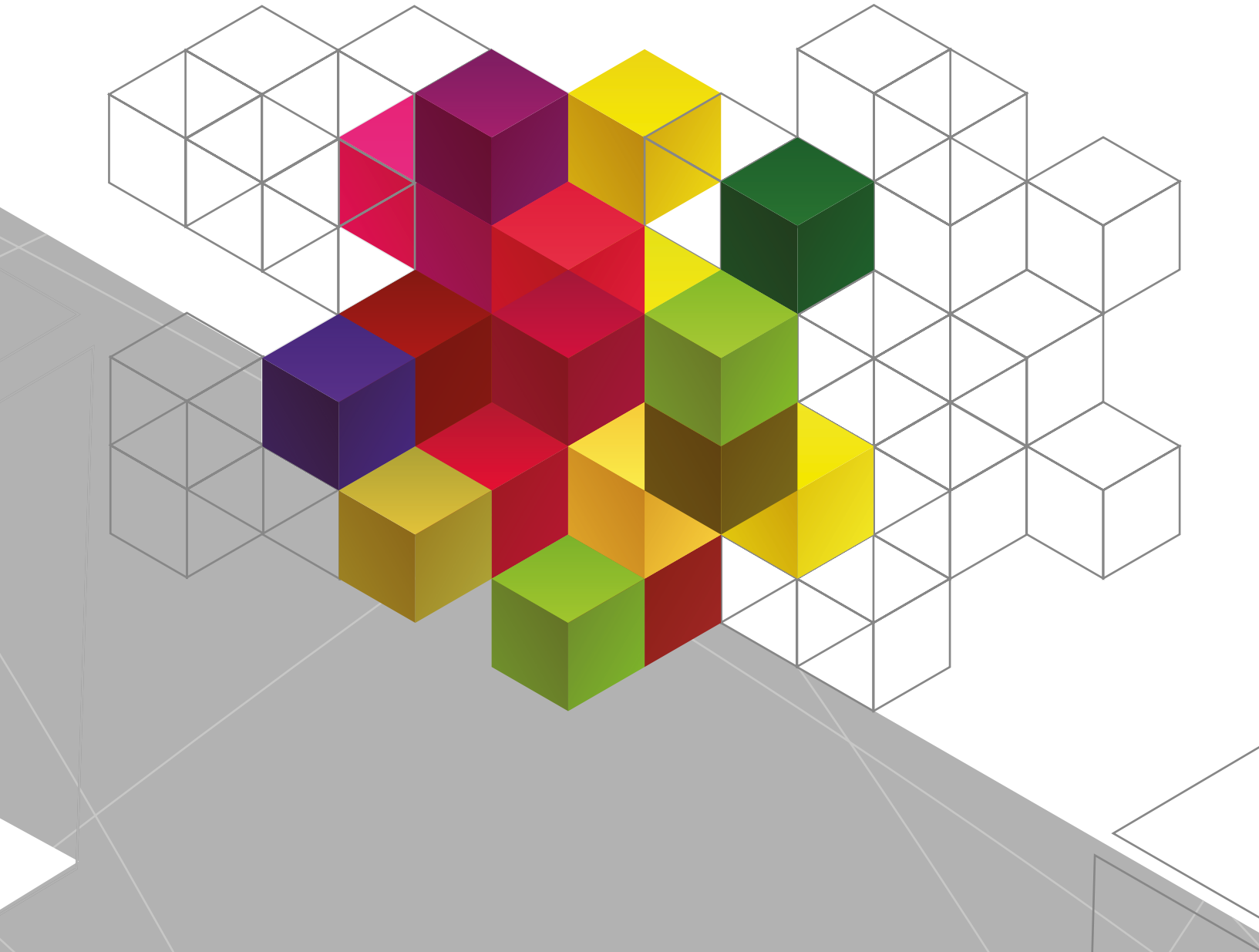
This tool is a library that integrates a set of images manipulation operations allowing the operator to create (by means of a user-friendly interface) a customized application for images analysis with specific acceptance conditions.

Technical information

- Multi-core technology
- Modular and scalable software structure
- Graphical oscilloscope for signal error debugging
- SVM (SEA Vision Machine): integrated virtual PLC for machines rejection management
- Printers management (several models supported)
- Compliant to GMP and FDA 21 CFR Part 11

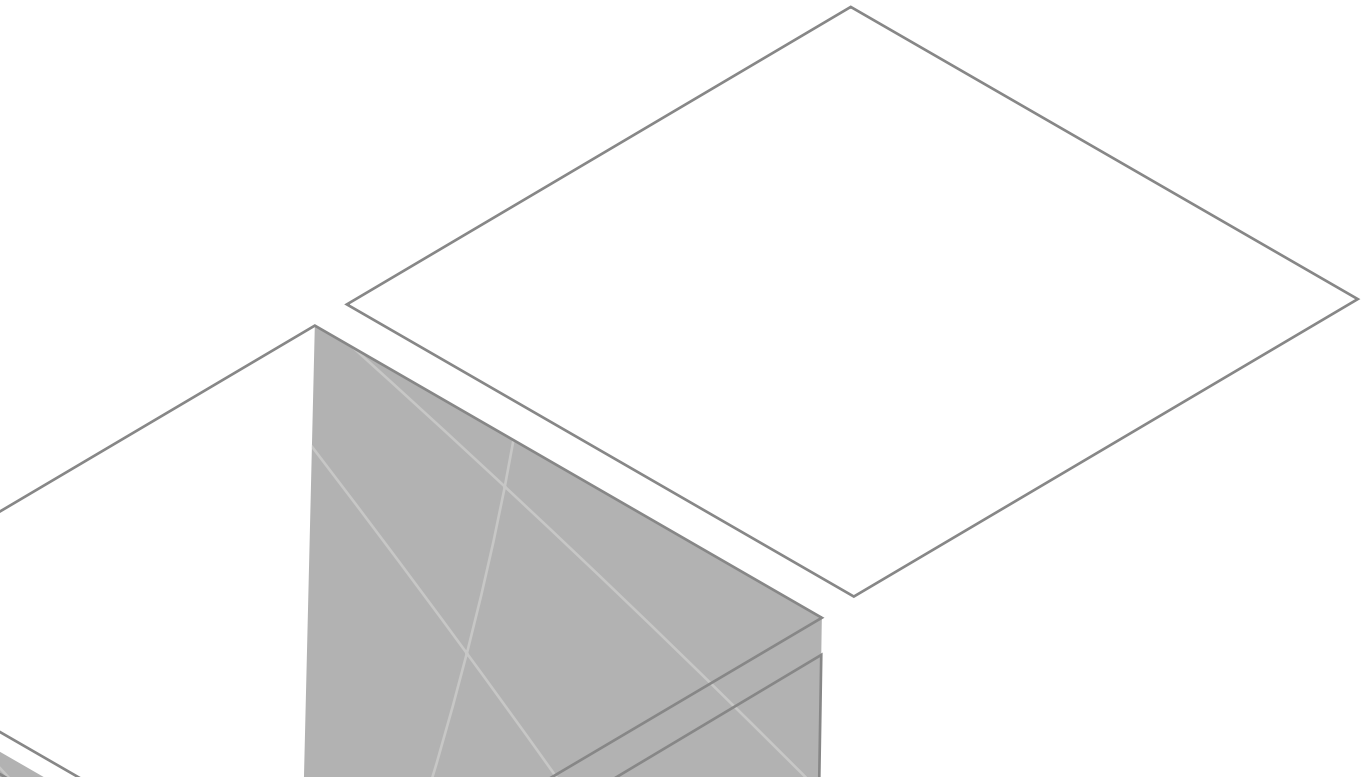
OCV

COSMETIC INSPECTION AND CODES/VARIABLE DATA CHECK



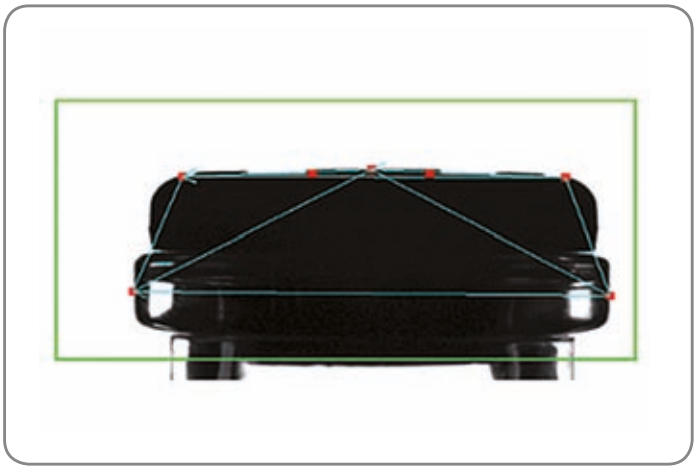
CASE HISTORY

COSMETIC INSPECTION AND CODES/VARIABLE DATA CHECK



CHECK OF VIAL'S STOPPER

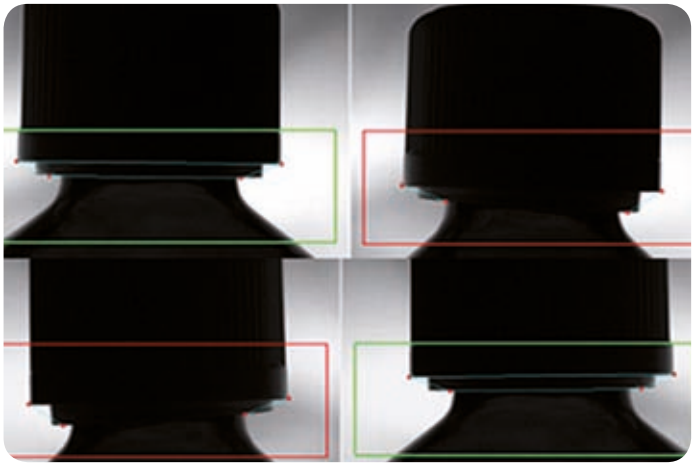
Software Licence: Programmable Measures



This application checks the correct positioning of vial's stoppers and caps. This control performs a measure of angles and lines between cardinal points on the stopper edge.

CHECK OF SEALING RING OF VIAL'S CAPS

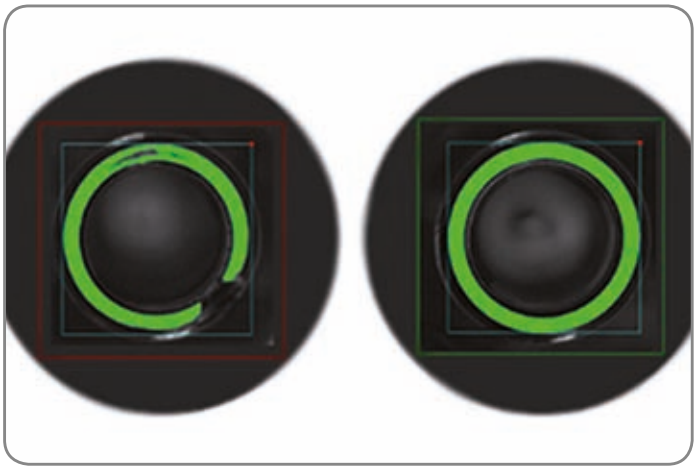
Software Licence: Programmable Measures



Check of the presence and position of the sealing ring on vials' caps. This check can be performed on conveyor belts and on rotary packaging machines.

INTEGRITY CHECK OF GLASS VIAL'S NECK

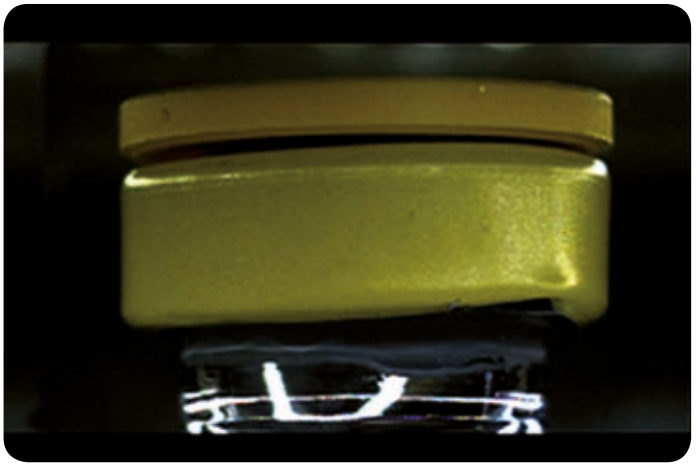
Software Licence: Programmable Measures



This application checks the integrity of the glass vial's neck for the rejection of damaged vials. This check can be performed on conveyor belts and on rotary packaging machines.

360° VIAL COSMETIC CONTROL

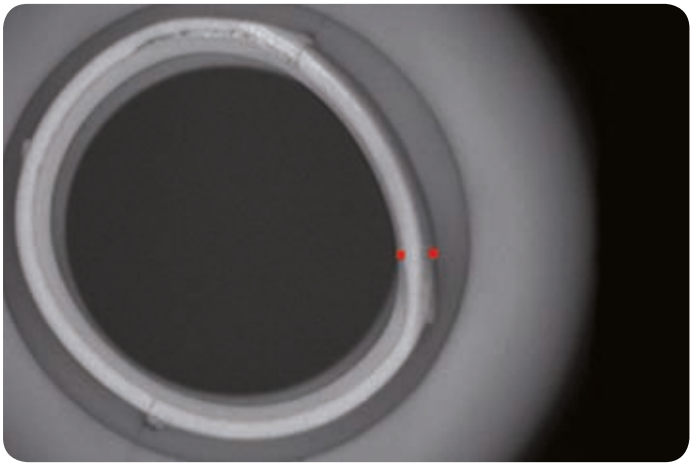
Software Licence: Programmable Measures



The vial cosmetic inspection checks the correct crimping, the presence of scratches, stains and cracks on the crimp, as well as the presence and colour of flip-off cap.

CHECK OF VIAL'S NECK SHAPE

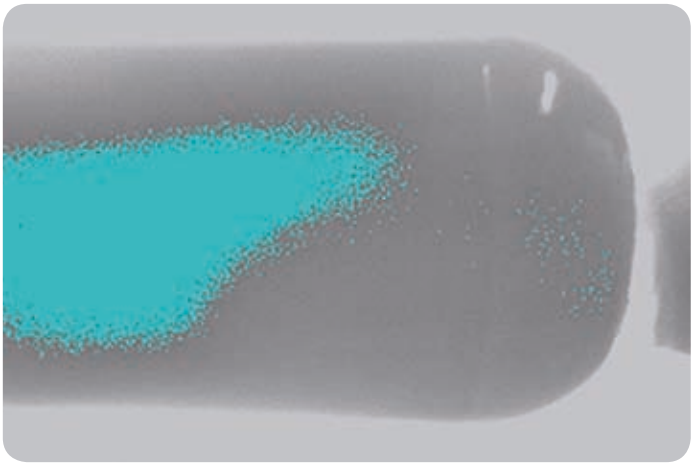
Software Licence: Programmable Measures



This application checks the correct forming of vial's neck allowing the rejection of bad vials.

CHECK OF FOREIGN BODIES IN WHITE PVC PIPE

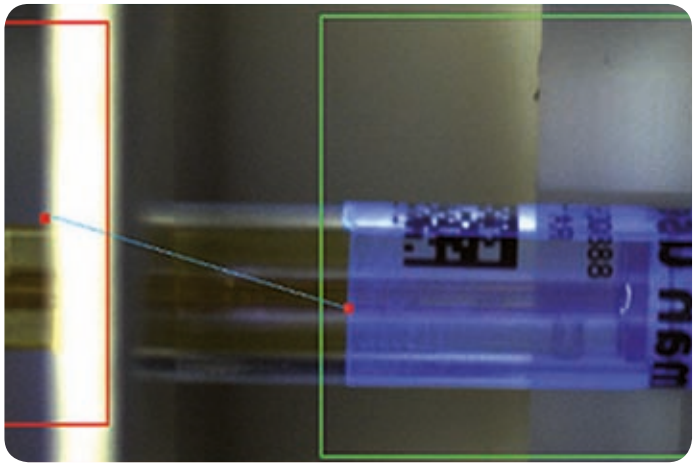
Software Licence: Programmable Measures



This application checks foreign bodies and impurities inside white PVC pipes.

CHECK OF UV LABEL ON THE SYRINGE'S BODY

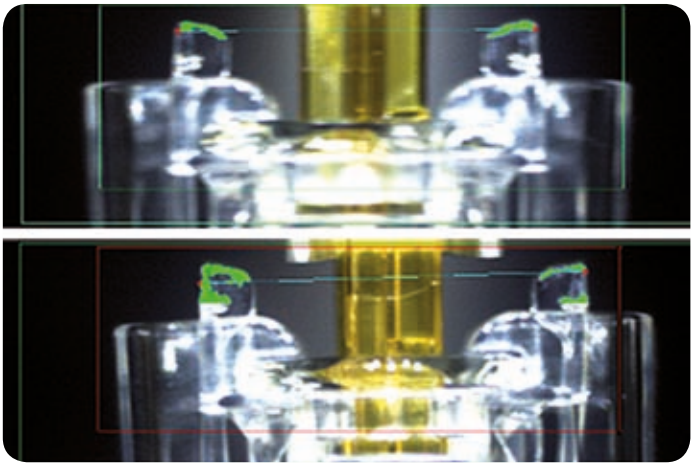
Software Licence: Programmable Measures



This application checks that the UV (Ultraviolet) label is present and applied in the correct position.

CHECK OF SYRINGE ASSEMBLY

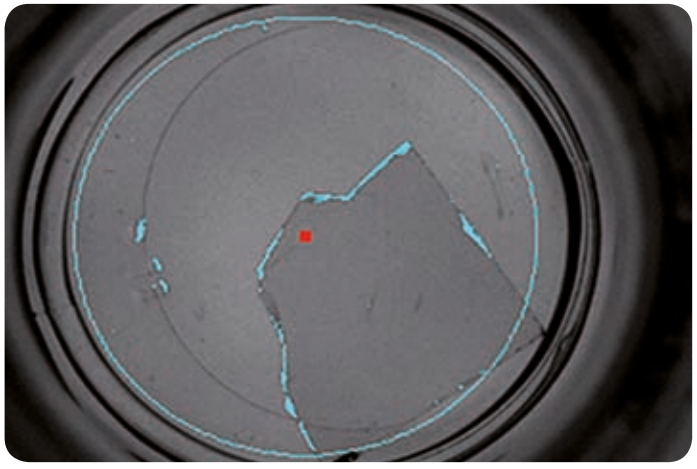
Software Licence: Programmable Measures



This application checks the correct syringe assembly. The measure of distances, angles and number of extracted points assures high quality checks providing efficient rejection of defective syringes.

CHECK OF GLASS FRAGMENTS IN THE VIAL

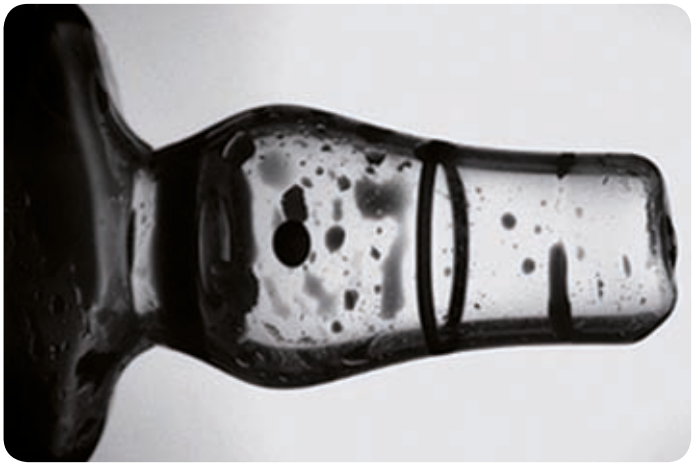
Software Licence: Programmable Measures



This application verifies the presence of glass fragments on empty vial's bottoms.

CHECK OF GLASS AMPOULES SEALING

Software Licence: Programmable Measures



This application checks the ampoule sealing to identify unsealed ampoules and ampoules with defective seals.

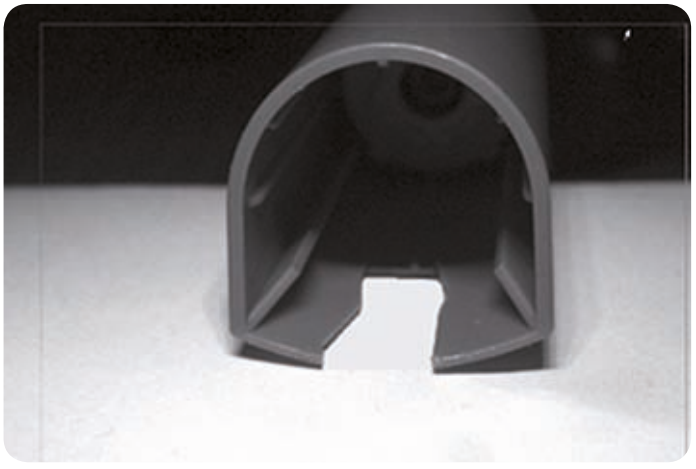
360° SKIRT CHECK

Software Licence: Programmable Measures

360°check of skirt, using a pericentic optic. This solution allows with only one camera to check splitting, bending, and flaws defects.

CHECK OF BROKEN CAPS

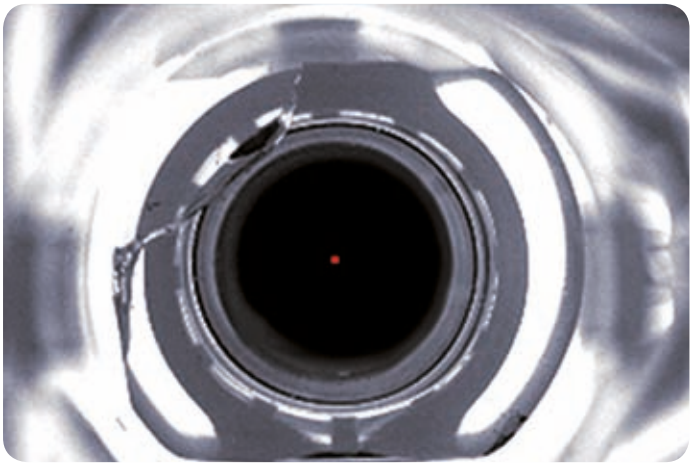
Software Licence: Programmable Measures



Inspection of the cap integrity, checking broken or missing parts.

SYRINGE FLANGE CHECK

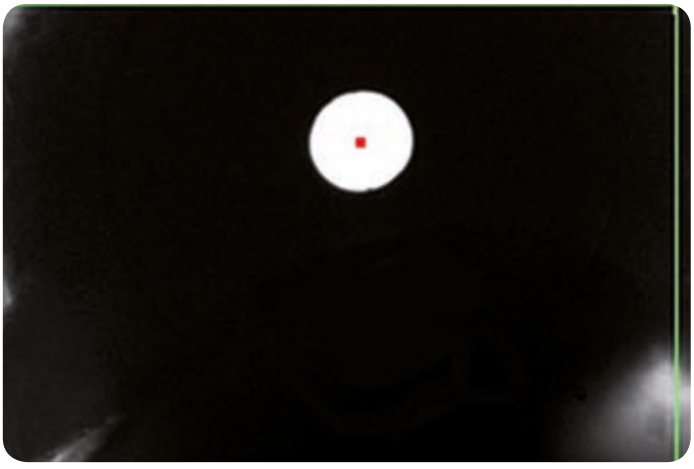
Software Licence: Programmable Measures



Check of the presence and integrity of syringe flanges. The Programmable Measure calculates the distance of multiple points on the syringe border to detect broken parts.

DROPPER HOLE CHECK

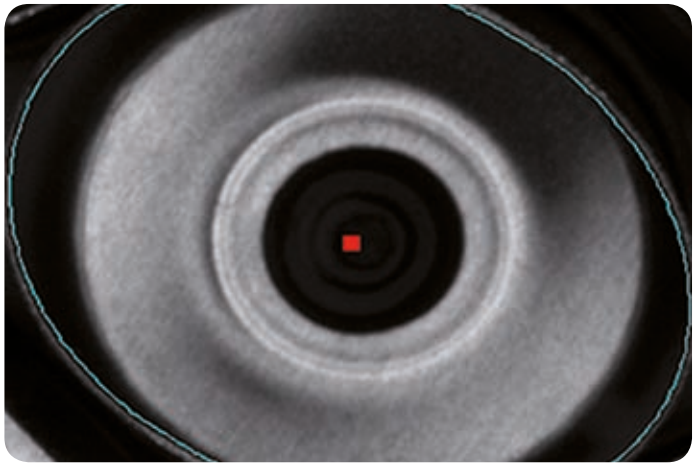
Software Licence: Programmable Measures



Detection of obstructions or flaws in a dropper hole. The application performs this check by measuring the light that passes inside the hole itself.

CAPS SHAPE CHECK

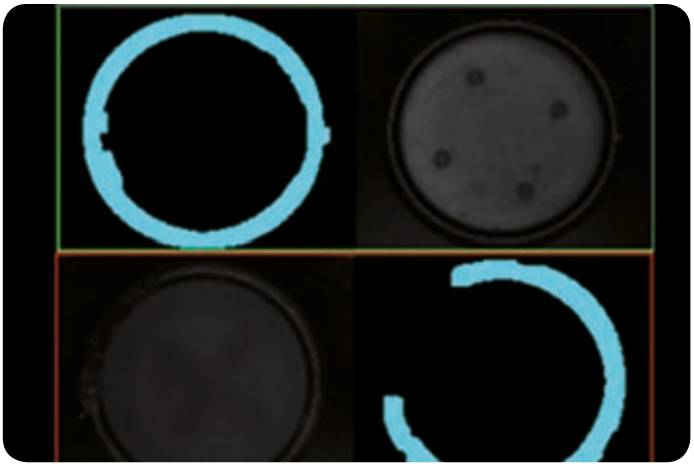
Software Licence: Programmable Measures



Check of cap defects. The Programmable Measure allows detection of flaws in the cap border due to crushing.

INTEGRITY CHECK OF BOTTOM CARTRIDGE

Software Licence: Programmable Measures



This control uses a sophisticated lighting setup that improves the borders brightness, whilst verifying the integrity and defects on the bottom of the cartridge.

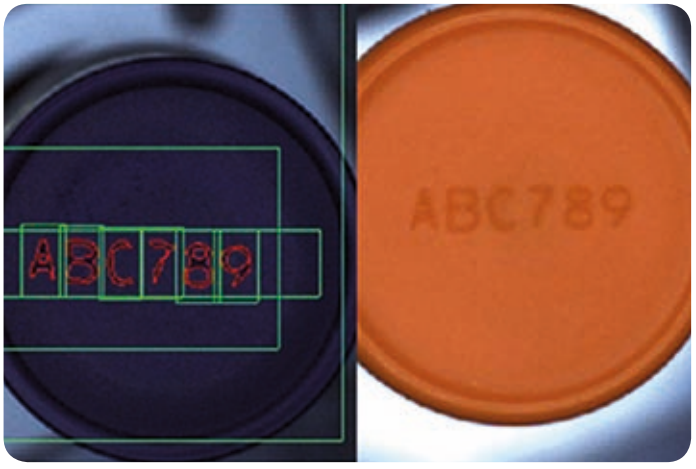
CHARACTERS CHECK ON VIAL SKIRT FROM LASER PRINTING

Software Licence: Characters

Check of laser-printed characters on vial's aluminium skirt.

LASER PRINT CHECK ON VIAL'S FLIP OFF

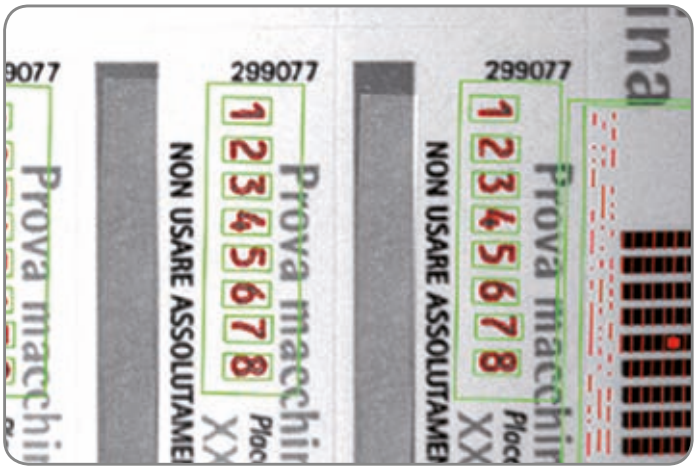
Software Licence: Characters



OCV/OCR inspection of the debossing with low contrast on coloured vial's flip off caps.

MULTIPLE CHARACTERS CHECK WITH MOBILE WINDOWS

Software Licence: Characters



OCV/OCR check of in-line printed variable data on multiple labels.

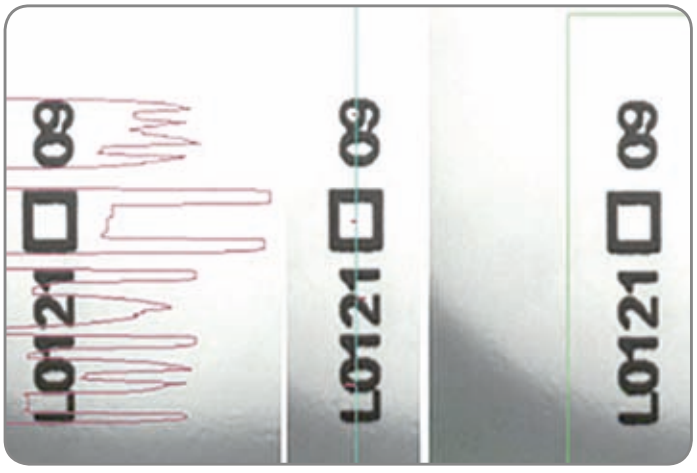
DATAMATRIX CODE CHECK ON VIAL'S SKIRT

Software Licence: Codes

2D code check on the product's skirt. This 360° inspection is necessary due to the random positioning of the DataMatrix code on the skirt.

PRINT CHECK
PROFILE CHECK

Software Licence: Print check, Profile check



This application checks the printed area and verifies possible defects. This includes exceeding or missing characters, printouts with missing zones and text lines.

CODES
AND VARIABLE DATA

Software Licence: Codes, Characters

This application checks the product identification code and any pre-printed or in line printed variable data. The OCV/OCR control performs recognition and measurement of the characters, ensuring an accurate printout.

CHECK OF PRINTED
VARIABLE DATA ON BLISTER

Licenza Software: Characters

This application checks the variable data printed on the aluminium blisters by inkjet printers, after the blister sealing.

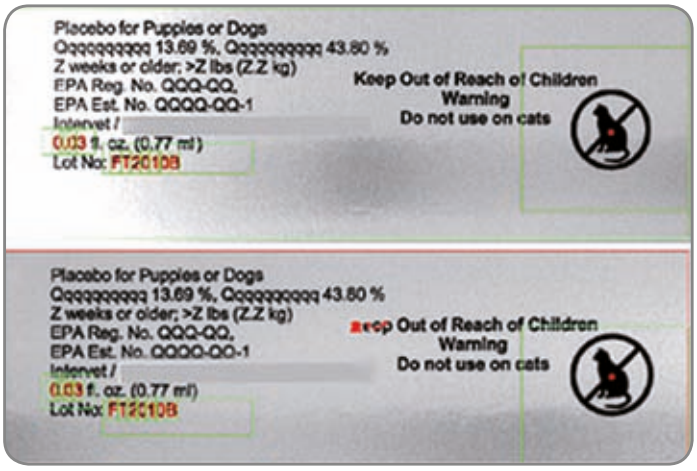
CODE CHECK ON VIAL'S CAPS
AND ROTATION IN HUMAN READABLE POSITION

Software Licence: Codes

The control is performed on the vial's label too.

PQV CHECK AND CHARACTERS READING

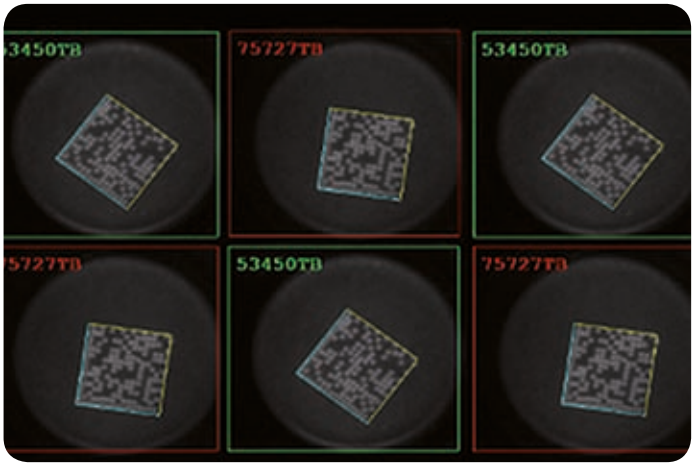
Software Licence: PQV, Characters



Quality check of the in-line printed data on multiple labels.

DATAMATRIX UV CODE CHECK ON VIAL

Software Licence: Codes



This application checks the DataMatrix UV code printed on the vial's cap.

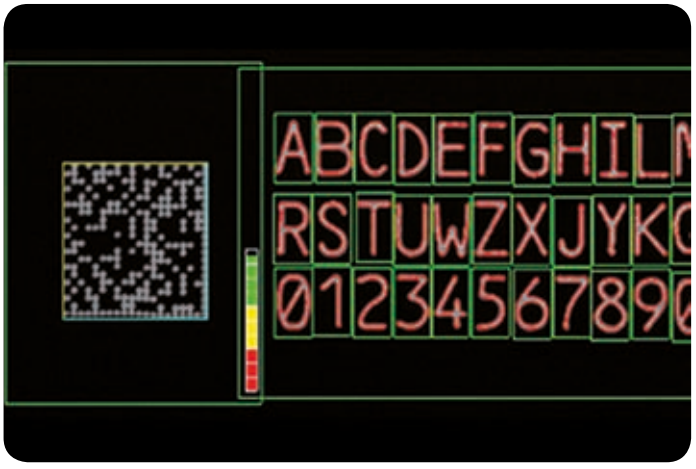
CODE READING

Software Licence: Codes

This is a comparison check between the printed code on the product and reference code inserted at production batch start. OCV supports linear pharmacodes, high density linear codes and 2D codes (Datamatrix).

LASER PRINT QUALITY CHECK OF DATAMATRIX AND VARIABLE DATA ON CARTONS

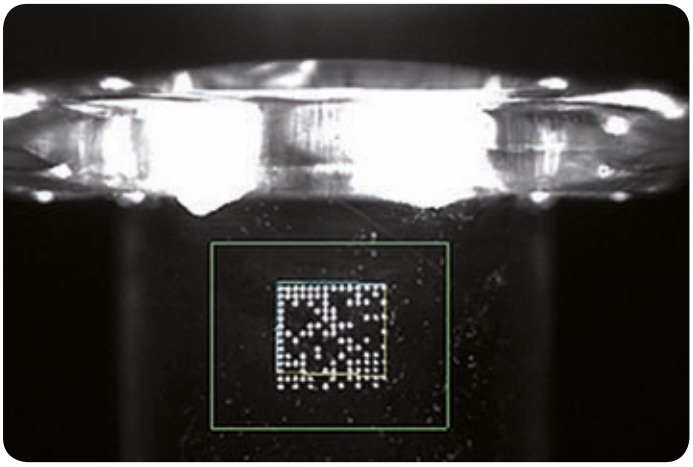
Software Licence: Characters, Codes



Check of the laser-printed DataMatrix code and variable data on the carton flap.
This provides laser printer management and programming of batch data to be printed on-line.

CHECK OF DATAMATRIX CODE ON SYRINGE PRINTED BY LASER PRINTER

Software Licence: Codes



This application checks laser printed 2D codes on syringes.

CHARACTERS CHECK ON VIAL'S BOTTOM

Software Licence: Characters

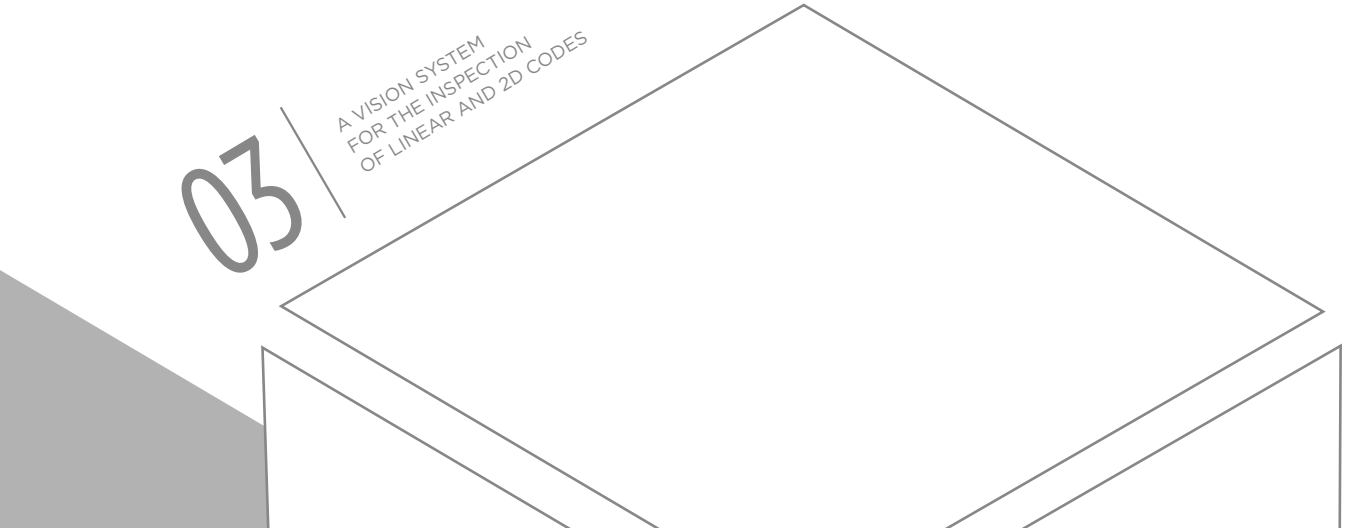
It allows characters check on the bottom of vials, this is achieved by a special optical setup that maximizes the contrast with the background.

CODEBOX

LINEAR AND 2D CODES CHECK

03

A VISION SYSTEM
FOR THE INSPECTION
OF LINEAR AND 2D CODES



Codebox is a control system developed to verify linear and 2D codes. Codebox offers a simple, intuitive and easy to use interface, with touch-screen capabilities. The code check feature can handle common problems such as rotation, reflection, code colour variations and angle of presentation. Codebox has a Wizard function for code self-programming during the machine running. Codebox is compliant with GAMP CFR 21 Part 11.

Technical information

- Independent and asynchronous cameras with dedicated virtual PLC software
- Fanless main unit, no maintenance is needed
- Industrial hardware for best performances in unfavourable conditions

TECHNICAL INFORMATION	
External size	Height 210 mm Length 280 mm Depth 198 mm
Max cameras for codes control	4
Display	8.4” touch-screen
Standard I/O	24 V DC, 5 input and 8 output with opto-coupled signals
I/O Extended (optional)	24 V DC, 16 input and 16 output with opto-coupled signals
Power input	24V DC

SUPPORTED CODES	
Codes 2D	
Linear codes	Pharmacode, Dual Track Pharmacode, 128 Code, Code 39, 2/5 Code, 32 Code EAN8, EAN13 UPCA, UPCE, RSS-14, RSS-14 Stacked, RSS Limited

CLIENT & SERVER

SMART SCADA AND DATA COLLECTION SOLUTION

In order to control and manage all the systems installed on the packaging lines SEA Vision offers a Client & Server solution that performs Smart SCADA and data collection functions.

04 | SMART SCADA AND DATA COLLECTION, THE SOLUTION FOR A CENTRALIZED MANAGEMENT OF THE SYSTEMS INSTALLED ON THE PACKAGING LINES

The Client & Server system allows the operators to interact with the packaging machines by using a Client HMI interface that displays an overall view of the line status, parameters, machine counters, batch configuration. The data collected by the systems can be viewed and included in reports.

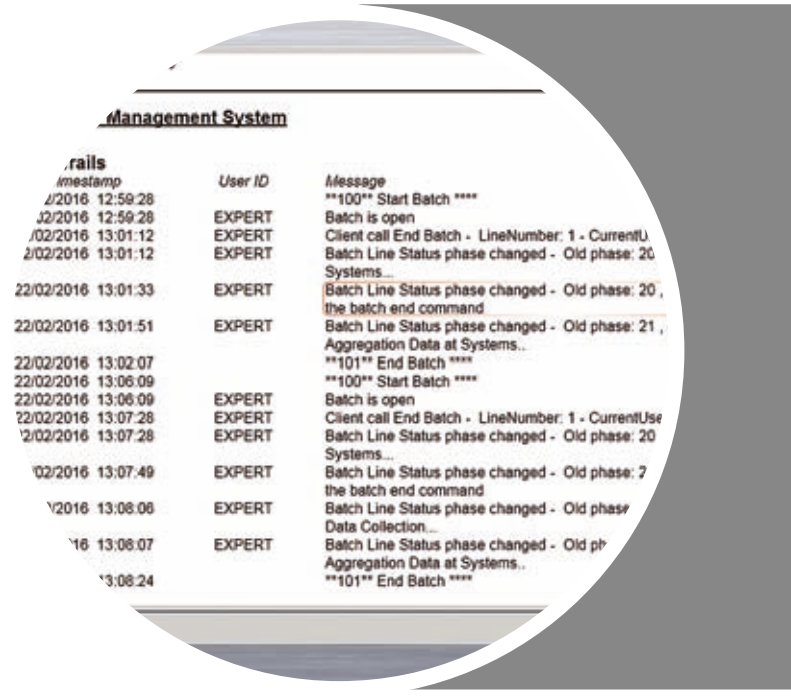
The Client is connected with SEA Vision Server, a modular application that manages the operations on the packaging line. SEA Vision Server can be installed on the customer's hardware or in virtual machine environments.

Through the data collected by the machines' PLCs (alarms, counters, events and Audit Trails) and from the vision systems installed on the packaging line, it is possible to:

› Monitor and process the line data, in order to improve machineries' efficiency, productivity and safety.

› Collect data in real time, allowing a focused intervention on the machineries reducing manual activities.

› Improve the overall efficiency of the line and provide an Audit Trail report.



SERIALIZATION AND AGGREGATION

SOLUTION FOR TRACK & TRACE
COMPLETE WITH SEA VISION MANUAL WORKSTATIONS

05

THE FLEXIBLE SOLUTION
TO MEET TRACK & TRACE REGULATIONS
IN THE PHARMACEUTICAL FIELD.

SEA Vision provides a complete solution that, thanks to a strong and configurable structure, can safely satisfy the various needs related to the serialization and aggregation of pharmaceutical products.

The modular and scalable Core is based on connectors: this approach allows the system's future expansion by adding further licensed functionalities without impacting the application core itself.

This solution is composed of 3 modules: a Server, one Line Manager for each line, vision systems for serialization and aggregation.

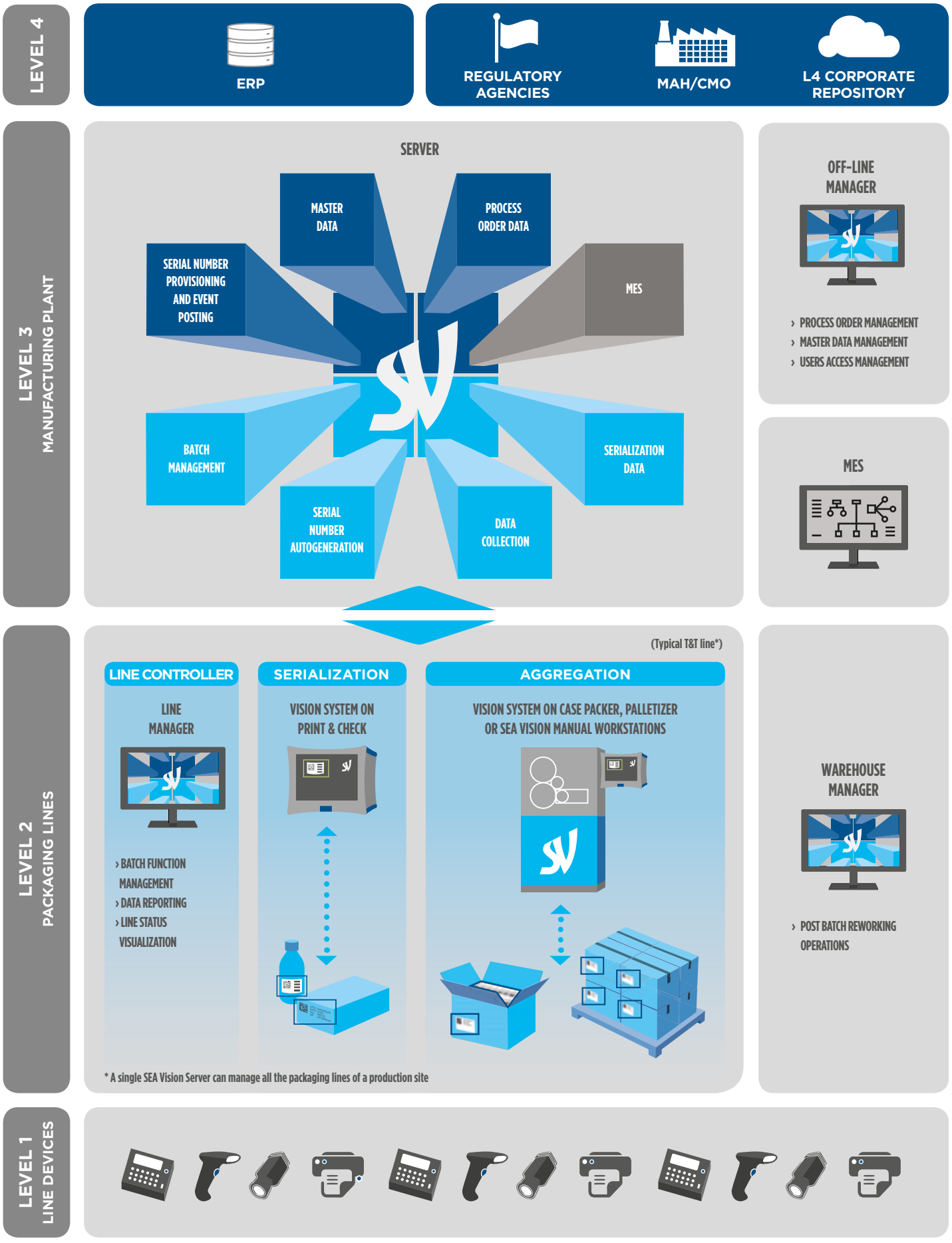
SERVER

It's a modular software application for the management of all the packaging lines of a manufacturing site (Level 3). It can be installed on the customer's hardware or on virtual environments. It's a system based on Windows Server 2008/2012 and integrates with SQL databases.

The Server's architecture consists of connectors that allow the system to communicate with IT systems along the Level 4 (Enterprise Level) including Databases, Management Systems and MES and with the line level vision systems for serialization and aggregation (Level 2).

Each functionality (batch management, serial numbers request, events exportation, etc.) is associated to a specific licence to grant the maximum system scalability. With dedicated protocols, the Server communicates with Level 4 for the exchange of in/out serialized data with the line.

FLEXIBILITY+
MODULARITY+
RELIABILITY=
EFFICIENCY


LEVEL 4
ERP
REGULATORY AGENCIES
MAH/CMO
L4 CORPORATE REPOSITORY
LEVEL 3
MANUFACTURING PLANT
SERVER
MASTER DATA
PROCESS ORDER DATA
SERIAL NUMBER PROVISIONING AND EVENT POSTING
MES
BATCH MANAGEMENT
SERIALIZATION DATA
SERIAL NUMBER AUTOGENERATION
DATA COLLECTION
OFF-LINE MANAGER
› PROCESS ORDER MANAGEMENT
› MASTER DATA MANAGEMENT
› USERS ACCESS MANAGEMENT
MES
LEVEL 2
PACKAGING LINES
(Typical T&T line*)
LINE CONTROLLER
LINE MANAGER
› BATCH FUNCTION MANAGEMENT
› DATA REPORTING
› LINE STATUS VISUALIZATION
SERIALIZATION
VISION SYSTEM ON PRINT & CHECK
AGGREGATION
VISION SYSTEM ON CASE PACKER, PALLETIZER OR SEA VISION MANUAL WORKSTATIONS
WAREHOUSE MANAGER
› POST BATCH REWORKING OPERATIONS
* A single SEA Vision Server can manage all the packaging lines of a production site
LEVEL 1
LINE DEVICES

LINE **MANAGER**

All the systems installed on the line can be managed by a single centralized workstation, providing a user-friendly touch-screen interface. Line Manager provides an overall view on the whole line status and on the current batch parameters.

SEA Vision Line Manager is a SCADA line system providing functionalities to allow the execution of the main operations on the packaging line.

- Batch functions: management of batch start/end operations on all systems and PLCs
- Recipes configuration: recipes definition with data sharing among the vision systems on the line, to avoid duplication of information
- Registry configuration: editing of the line's configuration parameters

- CFR 21 Part 11 management, centralized user permissions & Audit Trails
- Data Collection: configurable real-time line status visualization and production data collection
- Reporting function: configurable reporting of the collected data

VISION SYSTEMS
ON PACKAGING LINES

Integration of vision systems on Print & Check

SEA Vision provides a turnkey package for serialization composed of: automatic Print & Check machine with different models (equipped with conveyor belt for the application of the serialized code), printers and integrated vision system.

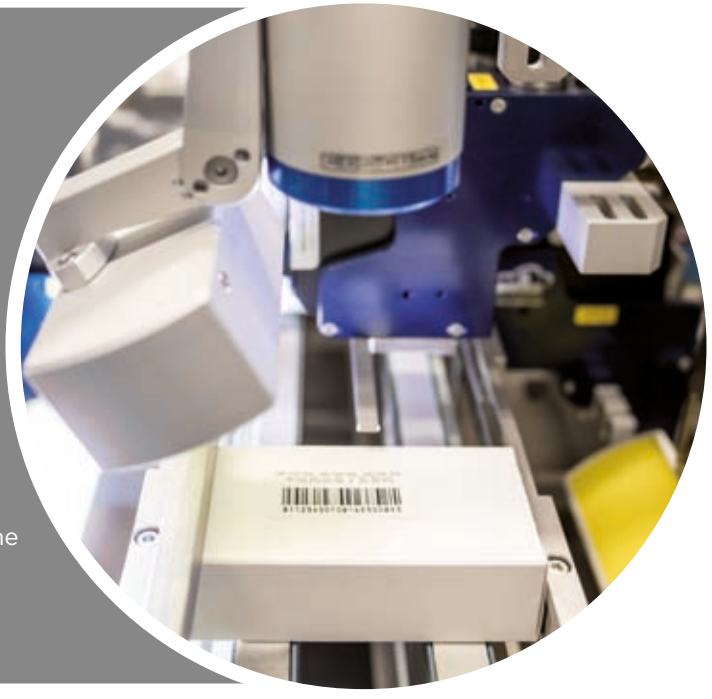
Print & Check machines features

- Application of 2D code and Human Readable data on upper side and on two lateral carton flaps, with camera verification
- Continuous motion
- Positive carton transport
- Pre-arranged for the Ink-Jet printing installation and for OCV, OCR, human readable data and 2D code verification system

- Ergonomic and easy access for machine clearance and process management
- Visibility of the process
- Code accuracy application
- Print quality ANSI grading achieving “A” and “B” grading
- Easy changeover

VISION SYSTEM’S FEATURES ON PRINT & CHECK

- Reading and checking of codes and characters OCV/OCR
- Printing grade quality control
- Printers management
- SVM (SEA Vision Machine): integrated virtual PLC for machines rejection management
- Marriage function: an helper code is printed on the carton to recognize the serialized code at the packaging line end (useful for China E-Code)
- Zombie carton function: use of the machine clock signal and the signals of «good» to recognize the good cartons chosen by the vision system, but rejected by the machine
- Images processed in real time
- Oscilloscope function



Integration of vision systems on automatic and semi-automatic case packers

Thanks to our consolidated expertise, SEA Vision can integrate the aggregation vision system on different case packers. The hardware is developed in collaboration with the main OEMs to be perfectly integrated with the packaging machines' mechanical design.

VISION SYSTEM'S FEATURES ON CASE PACKER

- Serialized code control on cartons inside the case and multilevel parent-child aggregation
- Reading and verifying of case's label code
- Printer management
- Scanner management for case-pallet aggregation, and online reworking tasks

SEA VISION
MANUAL WORKSTATIONS

SEA Vision's solution for serialization and aggregation is completed with a range of manual workstations for aggregation, commissioning and reworking operations.

06 | SEA VISION MANUAL WORKSTATIONS FOR AGGREGATION, COMMISSIONING AND REWORKING

BAW
BUNDLE AGGREGATION WORKSTATION

It's a manual workstation for reading and checking codes printed on bundles or cartons arranged manually and their aggregation to case and pallet. A Reading Station and a Case Station compose the workstation. The system shows feedbacks on the HMI panel that assist the operator's work, to ensure the maximum safety of the controls and of the aggregation operations. High-resolution cameras allow the inspection of bundles, unpackaged cartons, wrapped cartons and non-standard formats.

SAFETY FEATURES

- Fail-safe work cycle, with safety functions to avoid human errors
- Stainless steel structure with ergonomic design compliant to GMP

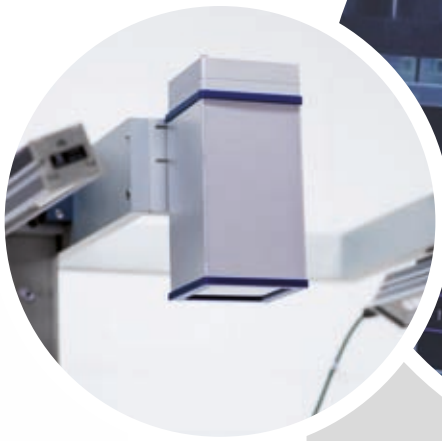
TECHNICAL FEATURES

- Integrated HMI touch-screen display with light and sound indicators
- High resolution cameras for side or corner case's label reading
- Rejection bin with rejection sensors that verify bad bundles real rejection
- Sensors automatically check the occurred insertion of good products in the case
- Easily transportable on different lines
- Top-efficient for small production batches

	LENGTH (MM)	HEIGHT (MM)	DEPTH (MM)
READING STATION	1683	1838	940
CASE STATION	CUSTOMIZABLE DESIGN	CUSTOMIZABLE DESIGN	CUSTOMIZABLE DESIGN

MAW
MANUAL AGGREGATION WORKSTATION MULTI-LAYER

The Manual Aggregation Workstation MAW Multilayer is a centralized stand alone station that allows to read cartons placed in a case in multiple layers, as well as to perform aggregation.



SAFETY FEATURES

- Fail-safe work cycle, with safety functions to avoid human errors
- Stainless steel structure with ergonomic design compliant to GMP

The integrated HMI touch-screen with an Audio & Visual Feedback System guides the operator step-by-step during the operations of check and rejection, ensuring the maximum safety through the entire work cycle. The system controls the lift position automatically, for an easy product load and an optimal inspection of all codes printed on each layer.

TECHNICAL FEATURES:

- Integrated HMI touch-screen display with light and sound indicators
- Top HR Camera FOV 550X350 mm: high resolution control of linear and 2D codes
- High resolution cameras for side or corner case's label reading
- Case presence sensors for auto triggering and position control
- Software controlled lift: easy product load and optimized code inspection
- Easily transportable on different lines
- Scanner for manual operations of reworking or pallet aggregation
- The system guides the operator during the execution of manual operations

	LENGTH (MM)	HEIGHT (MM)	DEPTH (MM)
MAW	1400	2000	930
MAX LAYER	550	n/a	350
MAX CASE	550	400	350

REWORKING
SHIPPING STATION

The Reworking Station allows shipping operations, post-packaging reworking or, if installed in production sites, also reworking operations on open batches.

Thanks to Reworking Station it's possible to generate shipment files with all the information of products ready for shipping or, if the case is damaged, it's possible to re-open the batch destroying and restoring all the aggregation levels. The Reworking Station allows the printer management and the creation of reports of all the operations performed on the station, in compliance to CFR 21 Part 11.

TECHNICAL FEATURES

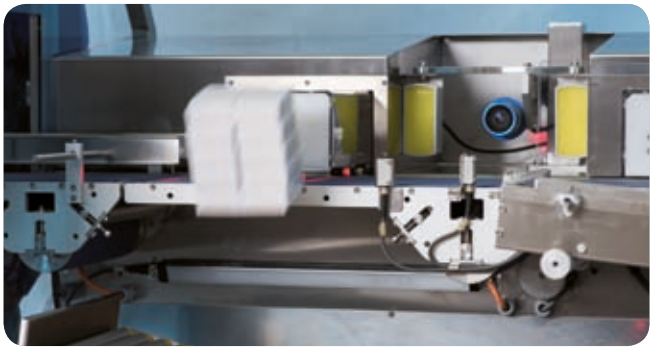
- Integrated HMI touch-screen display
- Stainless steel structure with wheels for transportation
- Dedicated slots for printers

	LENGTH (MM)	HEIGHT (MM)	DEPTH (MM)
REWORKING STATION	400	n/a	650

ACS
AUTOMATIC COMMISSIONING STATION

The automatic workstation ACS (Automatic Commissioning Station) allows re-reading/commissioning and sampling operations on cartons.

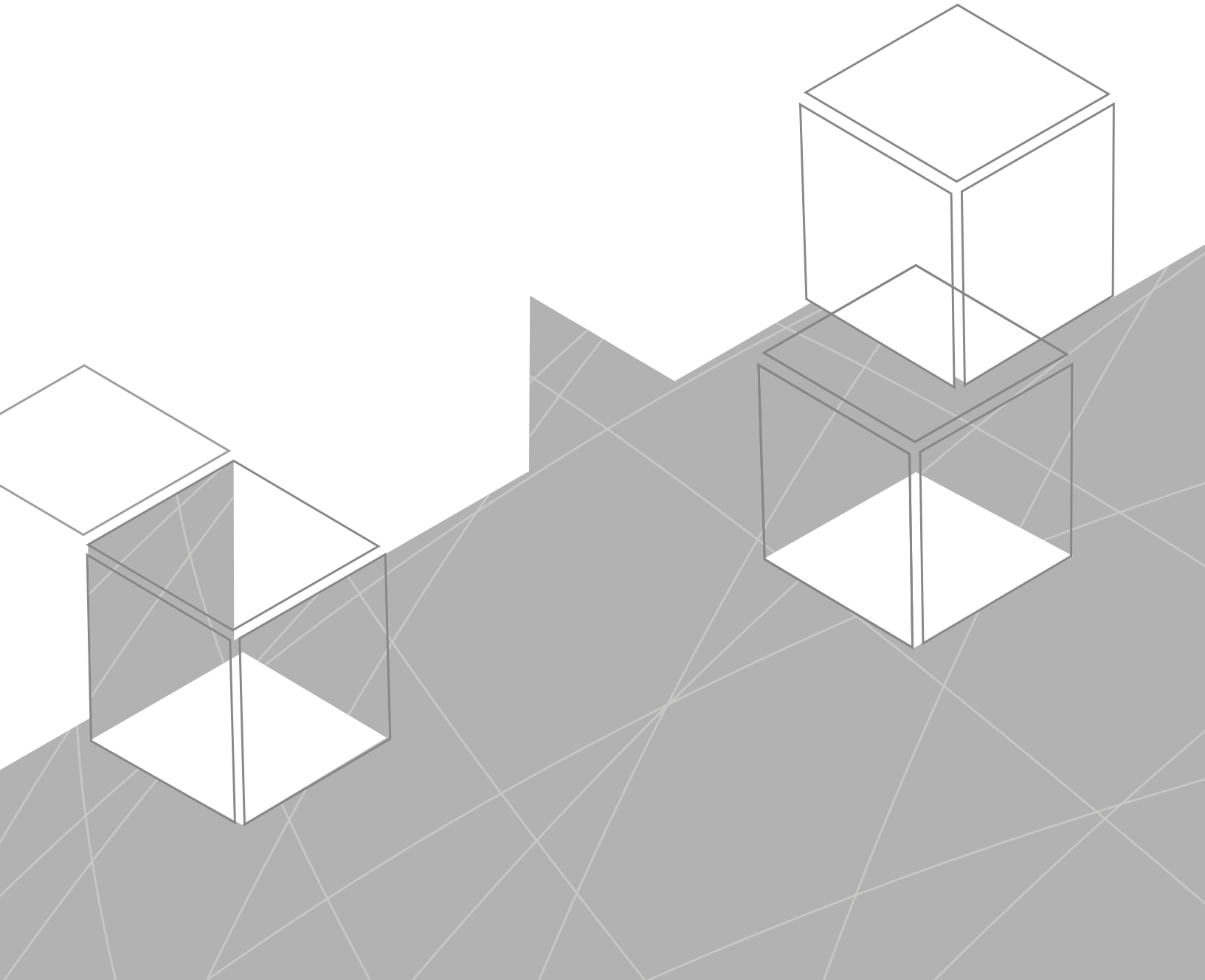
ACS, placed at the end of the packaging process, enables the validation of codes on products that come out from the line, avoiding the manual handling of rejected cartons from the previous machines. Moreover, during the work cycle, the machine can automatically sample the cartons for quality controls, decommissioning them or classifying them as rejected. The ACS structure is designed to be easily moved on different packaging lines on the same production site.

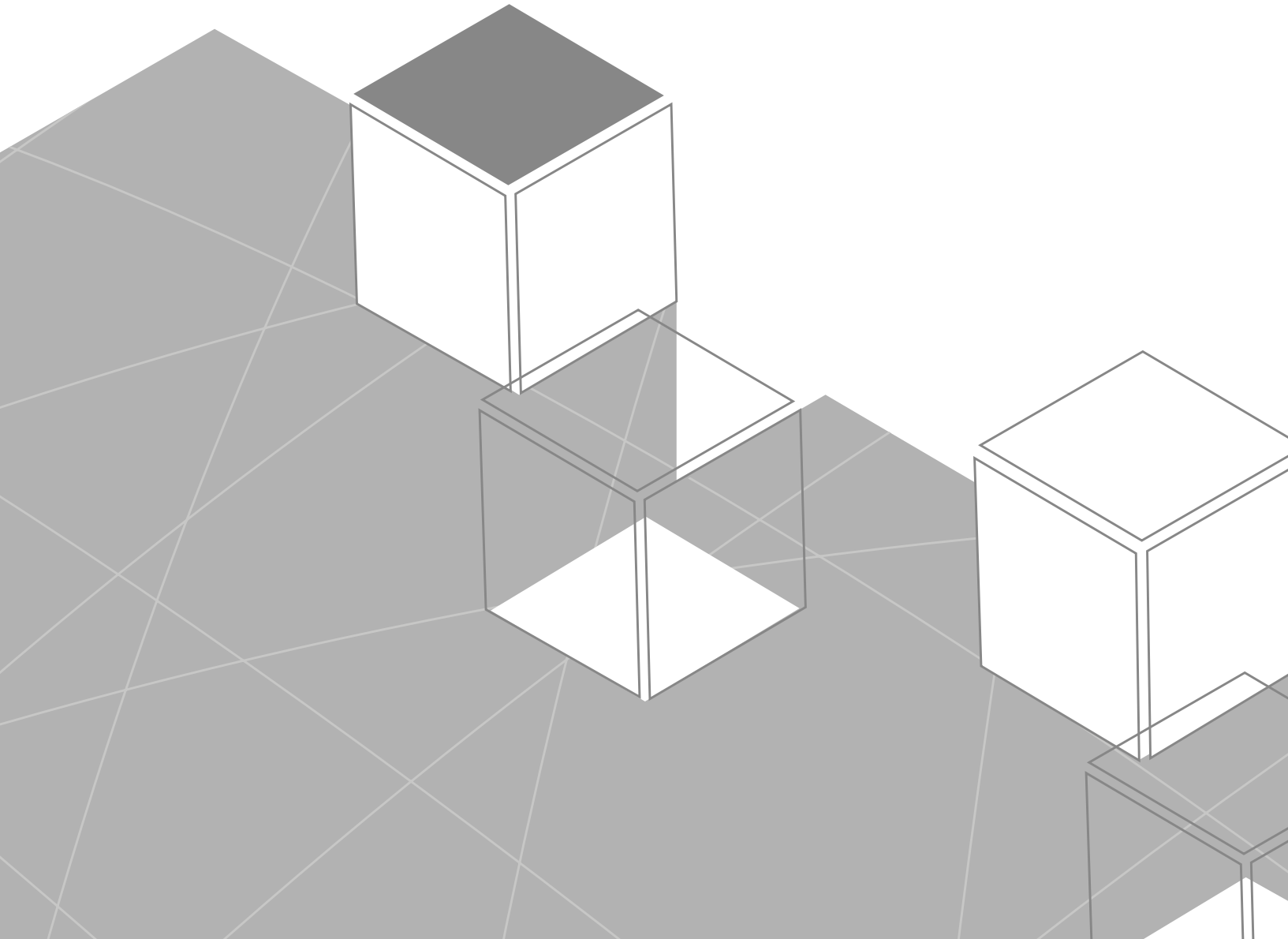


TECHNICAL FEATURES:

- Integrated HMI touch-screen display with light and sound indicators
- Positive cartons transport
- Cameras for cartons code reading on operator-side, machine-side or top-side
- Stainless steel structure with ergonomic design compliant to GMP

	LENGTH (MM)	HEIGHT (MM)	DEPTH (MM)
ACS	2244	1555	1050





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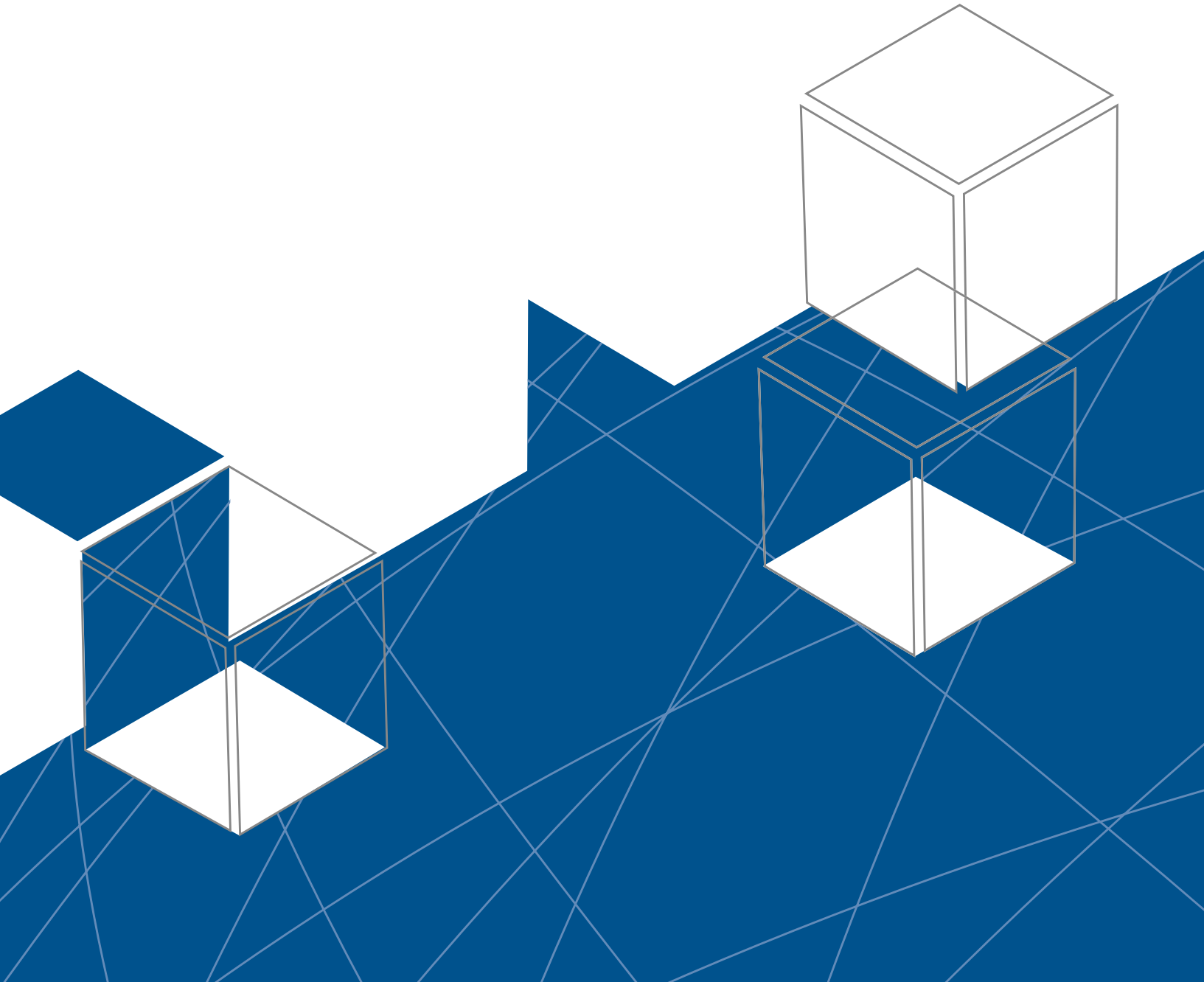
info@seavision.it

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