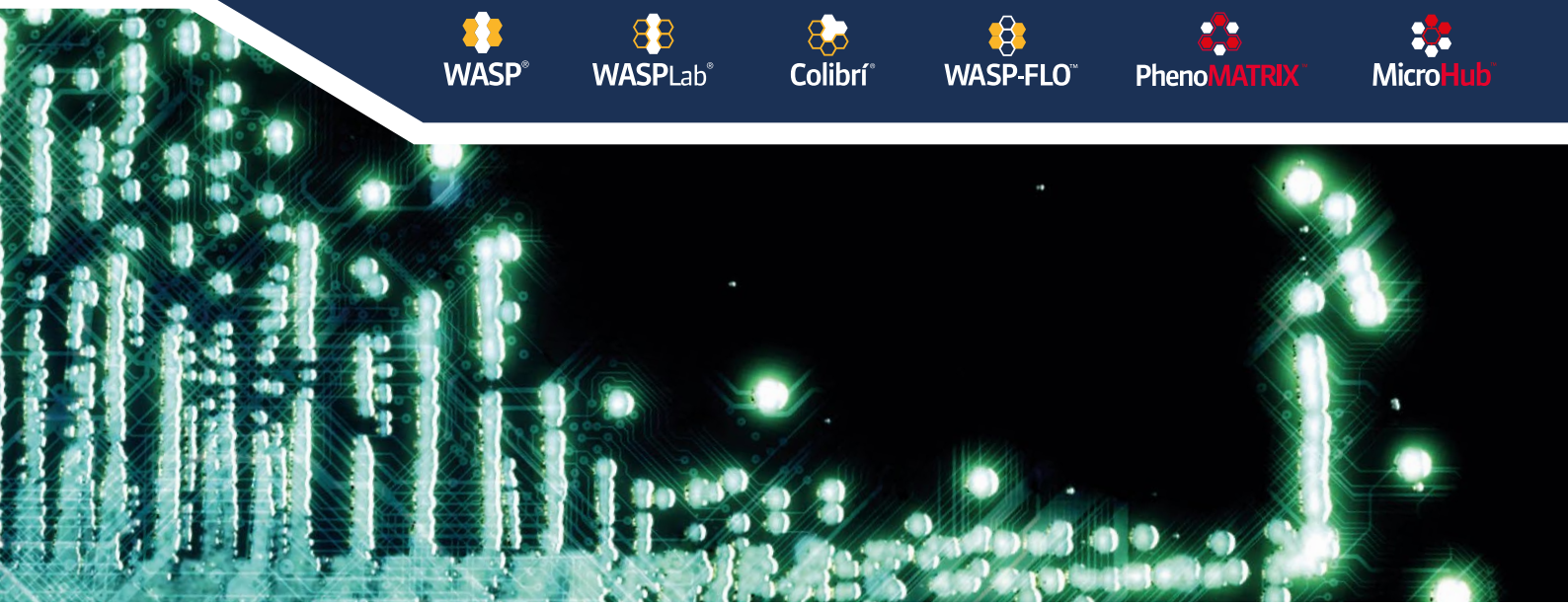
WASP® WASPLab® Colibrí® WASP-FLO™ PhenoMATRIX™ MicroHub™



EVOLVING PREANALYTICS

COPAN
Innovating Together™

copangroup.com

OUR FOCUS POINTS

INNOVATION

Copan is committed to a continuous innovation. New ideas, creativity, internal know-how in microbiology, engineering and image analysis are our main focuses.

MODULARITY

Modularity is the key of flexibility: all our automations are designed to meet any expectation in workflow, sample volumes, and protocols.

PRODUCTIVITY

Productivity sets the dimension of growth. Automatization is the answer, especially when based on a scalable solution that is in itself the driver of a measurable advancement in lab's TAT and throughput.

QUALITY

As volumes raise, as the laboratory grows, Copan's automation systems becomes fundmental to boost the quality and level of service.

TRACEABILITY

We process hundreds of thousands of samples per day and everything is under control: all our products are made to seamlessly integrate with your LIS and keep track of everything.

ENHANCEMENT

The know-how, the experience, the commitment of your staff are your most valuable assets.
Give value to your human capital by letting them focus on tasks that matter, for them as for the patients.

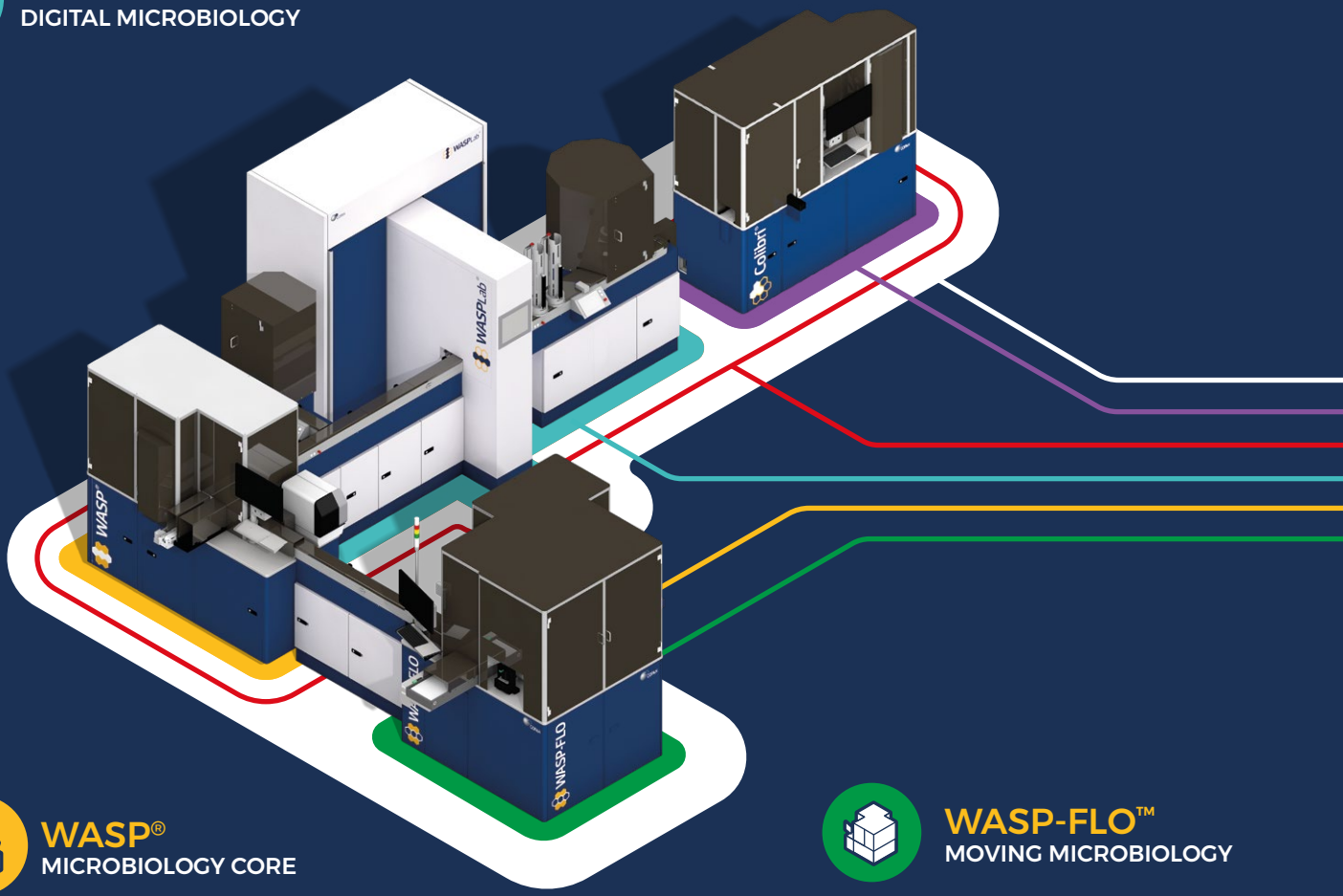
THE WASPLab® WORLD

LEADING MICROBIOLOGY

COLIBRÍ™
PRECISION MICROBIOLOGY

PhenoMATRIX™
MICROBIOLOGY BRAIN

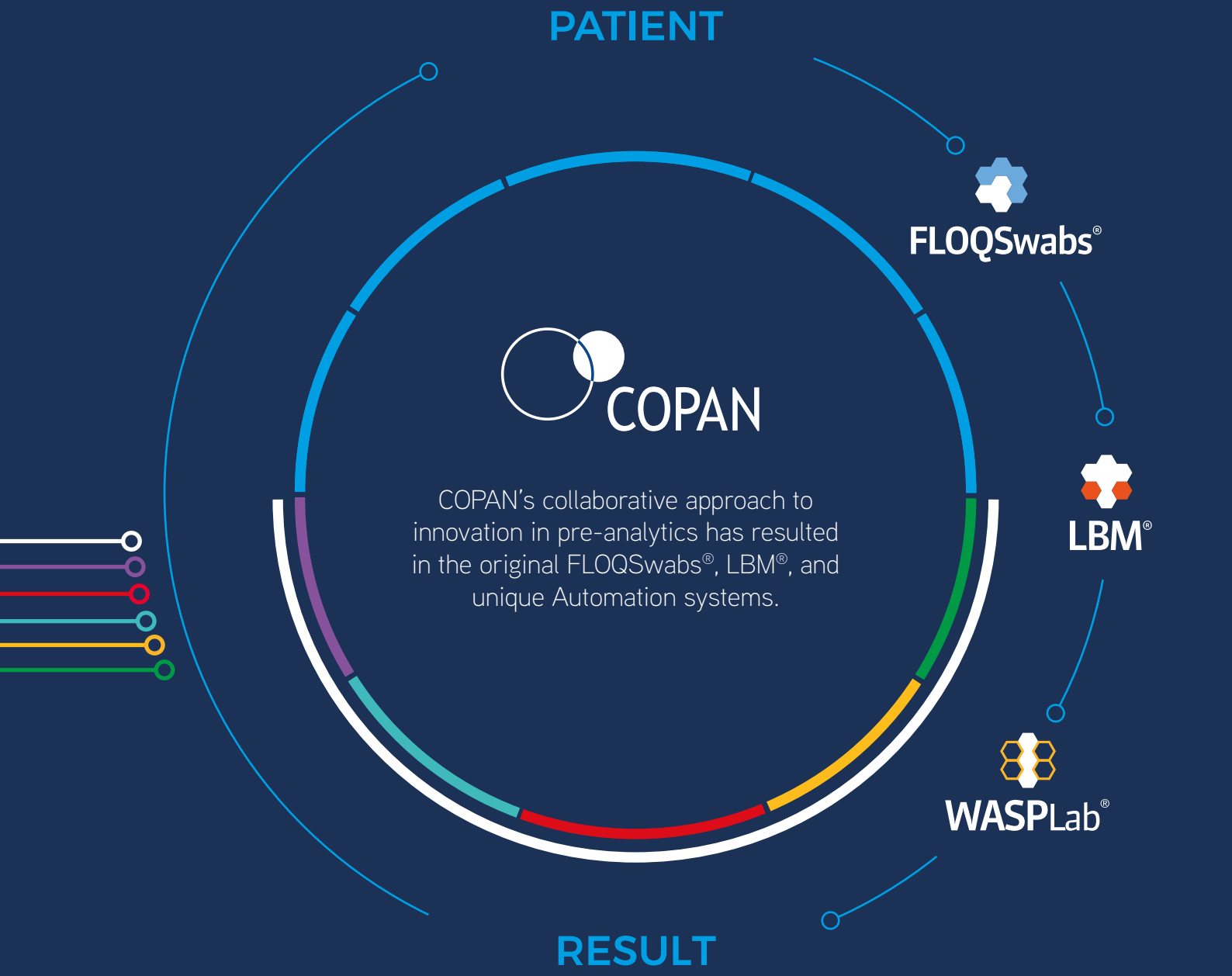
WASPLab®
DIGITAL MICROBIOLOGY



WASP®
MICROBIOLOGY CORE

WASP-FLO™
MOVING MICROBIOLOGY

MicroHub™
MICROBIOLOGY STRING


PATIENT
FLOQSwabs®
LBM®
WASPLab®
RESULT
COPAN
COPAN's collaborative approach to innovation in pre-analytics has resulted in the original FLOQSwabs®, LBM®, and unique Automation systems.

TO BE INNOVATION-CENTRIC

Through closer cooperation with key opinion leaders and clinical evaluations, Copan has designed and developed anatomically shaped FLOQSwabs® that optimize the efficiency of the collection of the target analyte, improving patient's comfort. By offering superior absorption and superior release, FLOQSwabs® increase the quality of your preanalytics.

Thanks to the invention of FLOQSwabs® patented technology, Copan has made real the concept of Liquid Based Microbiology (LBM®) and lab automation. Along with collection, preservation and transport systems ideal for bacteriology samples, virology culture, and molecular-based assays, Copan's portfolio also includes a full range of enrichment and selective broths, as well as sample preparation reagents.

MICROBIOLOGY CORE

WASP®

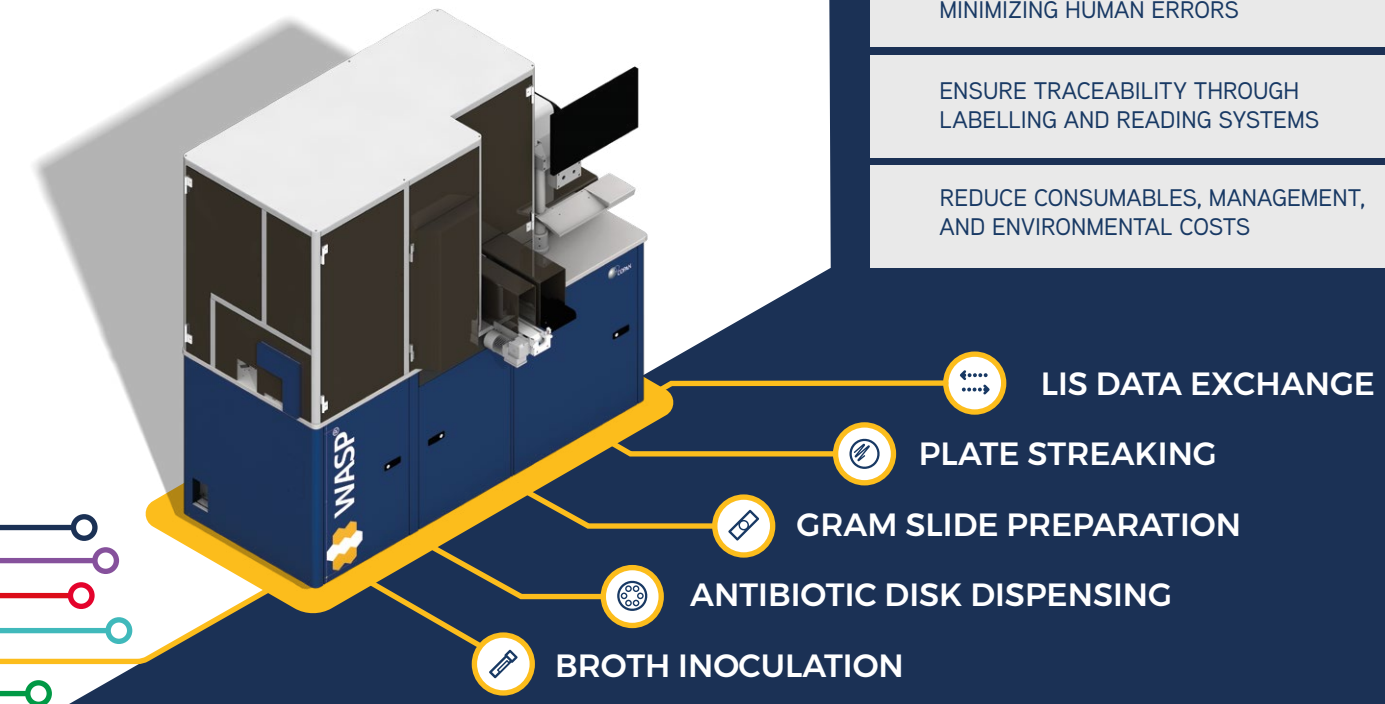
The truly modular automation addressing the needs of Bacteriology.
The first automated specimen processor keeps its leadership on the market through a decade of constant evolution.

⊕ COMPACT
⊕ ROBUST
⊕ FLEXIBLE

INCREASE QUALITY OF STREAKING
MINIMIZING HUMAN ERRORS

ENSURE TRACEABILITY THROUGH
LABELLING AND READING SYSTEMS

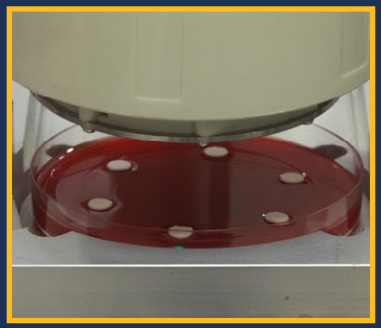
REDUCE CONSUMABLES, MANAGEMENT,
AND ENVIRONMENTAL COSTS



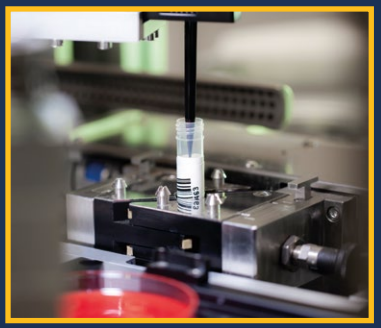
WASP MODULES

SLIDE PREP EVO
Slide smear, barcode laser print, and slide dry out

BROTH
Broths inoculation and automatic tube labelling



DISK DISPENSING
Antibiotic disks deposition on plates and QC camera to detect the disks presence



PIPETTOR
Higher volume inoculations and multiple broth management

THE TECH BEHIND QUALITY

1 **SAMPLE ENTRY CONVEYOR**
Load continuously without interrupting the instrument or disrupting the workflow

2 **SMART BARCODE READER**
Guarantees full traceability

3 **ONBOARD VORTEX**
Ensures sample homogeneity

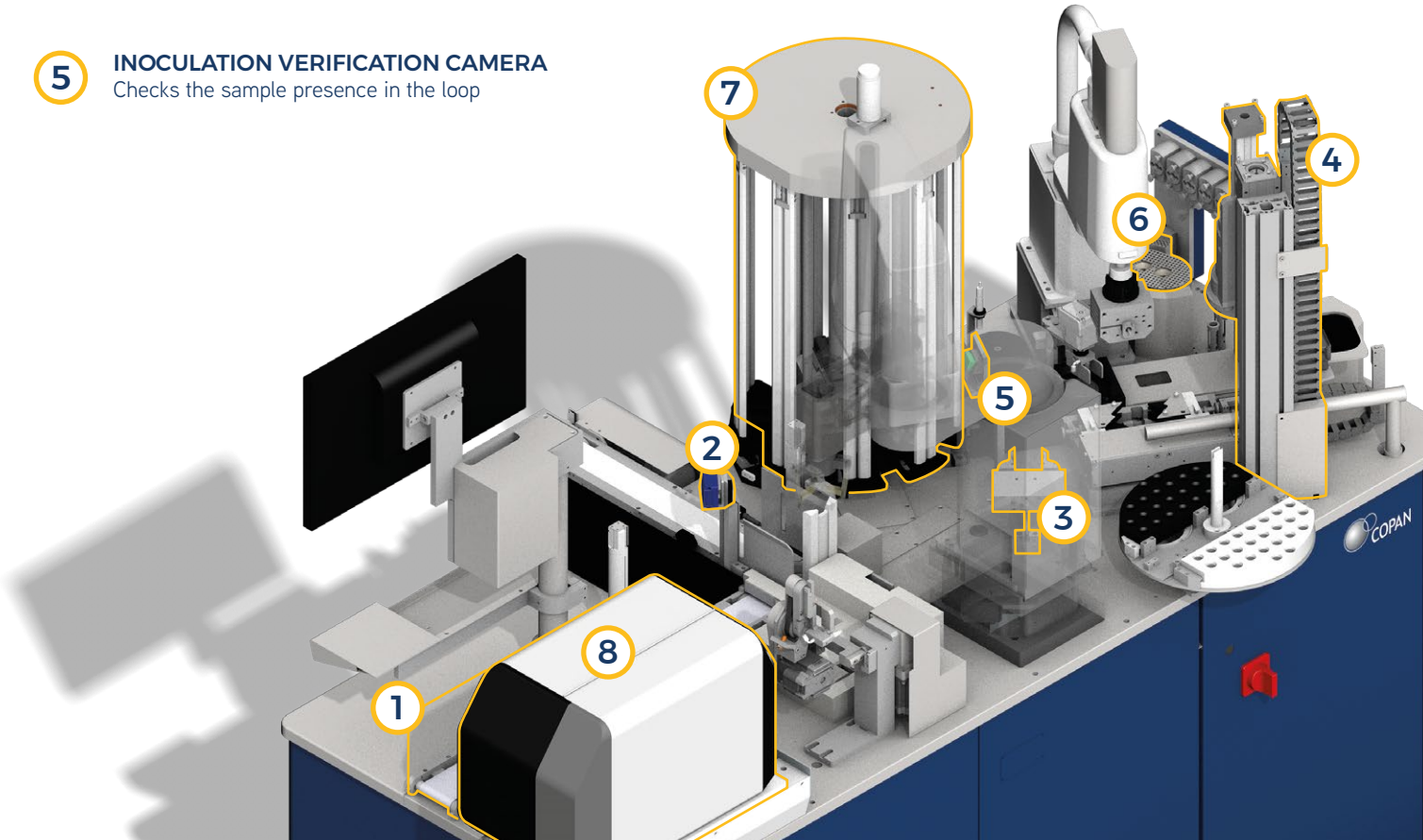
4 **UNIVERSAL DECAPPER** [1]
Decaps and recaps automatically sample containers

5 **INOCULATION VERIFICATION CAMERA**
Checks the sample presence in the loop

6 **INCINERATOR AND HEPA FILTER**
Avoid cross-contaminations and ensure a clean and safe environment

7 **PLATE CAROUSEL**
Holds up to 370 plates into 9 different media silos

8 **LABEL PRINTER**
Barcodes are automatically printed and applied to plates, broths, and gram slides



DIGITAL MICROBIOLOGY

WASPLab®

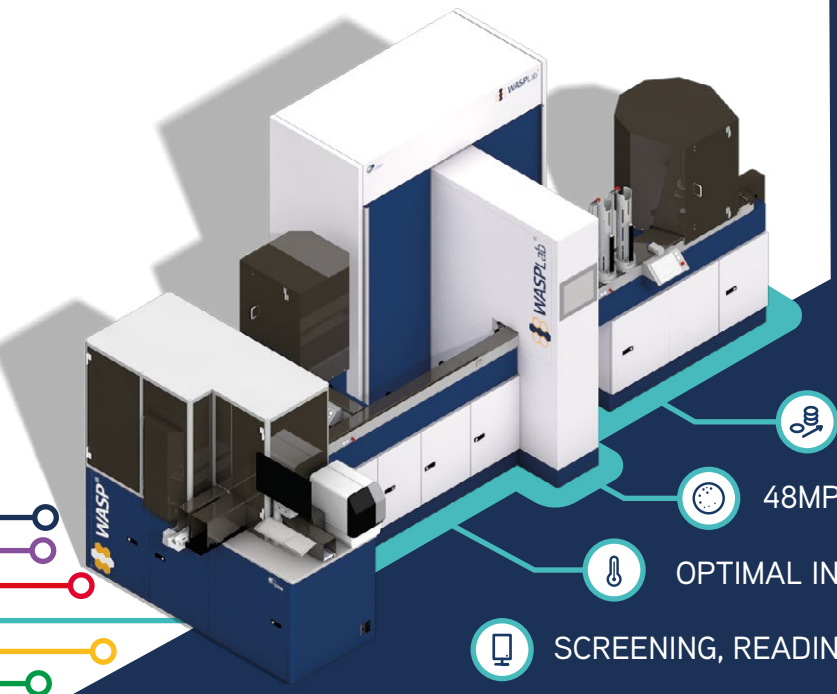
Redefining the state-of-the-art of full lab automation.
The modular bridge towards digitalization automates media plates incubation and image acquisition, enabling the unique Copan algorithms for image analysis.

⊕ UNMATCHED VISION SYSTEM
⊕ MODULARITY AND SCALABILITY
⊕ WORKFLOW-ADAPTIVITY

STANDARDIZE INCUBATION CONDITIONS FOR BETTER AND FASTER RESULTS

IMPROVE LAB PRODUCTIVITY AND QUALITY THROUGH THE AUTOMATED SPECIMEN ORGANIZATION AND EASIER RECOGNITION OF PATHOGENIC BACTERIA

ENHANCE READING PERFORMANCE ALLOWING LAB TECHNICIANS TO MAKE THE MOST ACCURATE WORKUP-DECISIONS



AUTOMATIC PLATES MANAGEMENT

48MP IMAGE RECORDING

OPTIMAL INCUBATION

SCREENING, READING and PICKING

IMAGE ACQUISITION SYSTEM [2]

Image acquisition through sophisticated lighting and camera system so that each plate is represented clear and accurate

MODULARITY AND SCALABILITY EXAMPLES

THE TECH BEHIND QUALITY

1 **TELECENTRIC CAMERA** [2]
Acquires 48 Megapixel images of plates at designated incubation times

2 **LIGHTING SYSTEM** [2]
Maximizes the image quality of different media plates through a rich buffet of light conditions

3 **ROBOTIC PLATE HANDLERS**
Arranges upside down plates in individual spots for homogeneous incubation conditions and constant traceability

4 **O_2 AND CO_2 ATMOSPHERE**
Covers a wide range of protocols with controlled atmosphere for optimal growth

5 **SINGLE AND DOUBLE INCUBATORS**
Incubates plates to fit the needs of laboratories of all sizes

6 **WORK STATIONS**
Improves manual plate management, screening, reading, and picking

7 **WEBAPP**
Designed to be the main access-point to WASPLab®, ensuring an easy and user-friendly interaction

PRECISION MICROBIOLOGY

Colibrí®

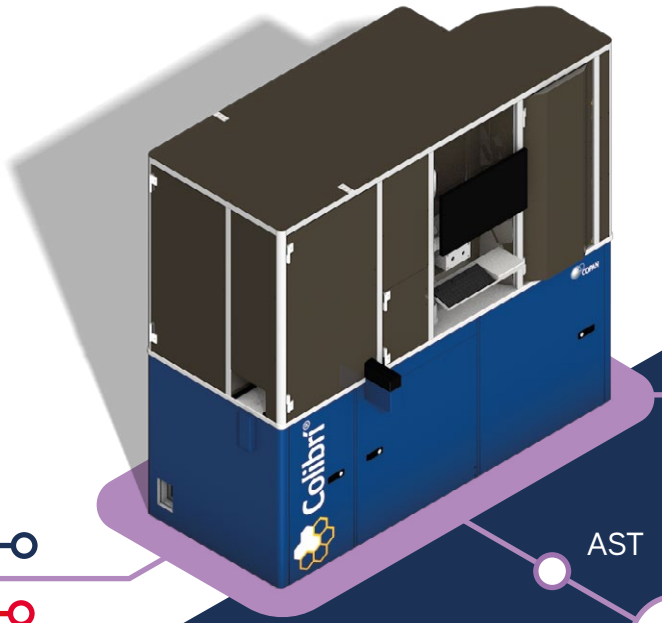
Fully automated colony picker, preparing targets for ID test through MALDI-TOF technology, and bacterial suspensions suitable for AST.[1]

- ⊕ ACCURACY
- ⊕ OPEN PLATFORM [1]
- ⊕ ISOLATES TRACEABILITY

MAXIMISE FOCUS ON HIGHER-PROFILE TASKS

ENSURE ACCURACY IN PICKING ISOLATES THANKS TO SYNCHRONIZED VISION SYSTEMS

INTEGRATE DATA WITH IVD ANALYZERS FOR SEAMLESS TRACEABILITY [1]



ID

COLONY PICKING

TARGET SPOTTING

MATRIX DEPOSITION

ISOLATE DATA EXCHANGE

AST

COLONY PICKING

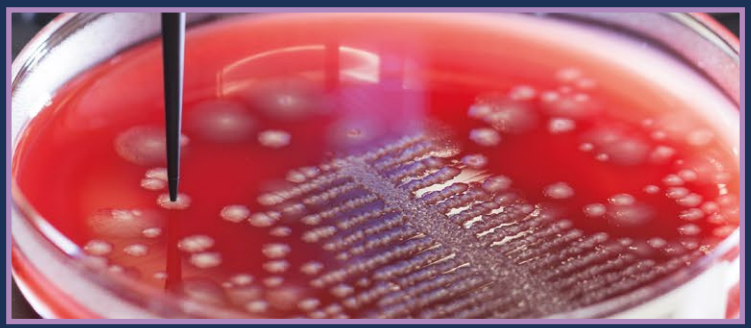
TARGET McFARLAND SUSPENSION TUBE

TURBIDITY CHECK

AST TUBE PREPARATION

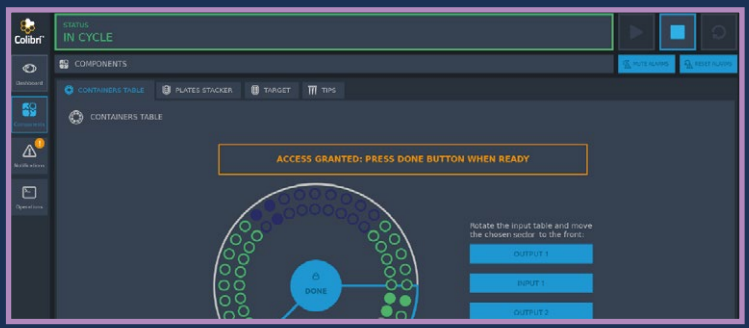
PURITY PLATE

ACCURATE PIPETTING



Data synchronization between Nephelometer and Pipettor to maximize standardization and ensure highest precision standards

USER-INTERFACE



Usability and information accessibility: allows the operator to supervise the instrument and the ongoing processes

THE TECH BEHIND QUALITY

1 ROBOTIC PIPETTOR
Handles both colony picking and liquids transfer accomplishing its tasks with extremely high precision [1]

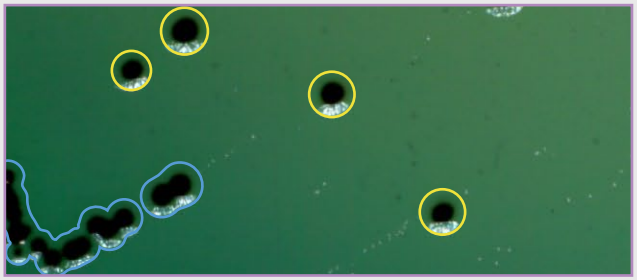
2 CONTAINERS TABLE
Holds up to sixteen target McFarland suspension tubes and AST tubes for the preparation of the microbial suspension [1]

3 VISION SYSTEM
Controls the tip alignment and retrieves the colony coordinates from WASPLab®, matching them with the colony position after incubation for picking accuracy

4 NEPHELOMETER
Checks the turbidity of the microbial suspension to guarantee maximum precision and standardization

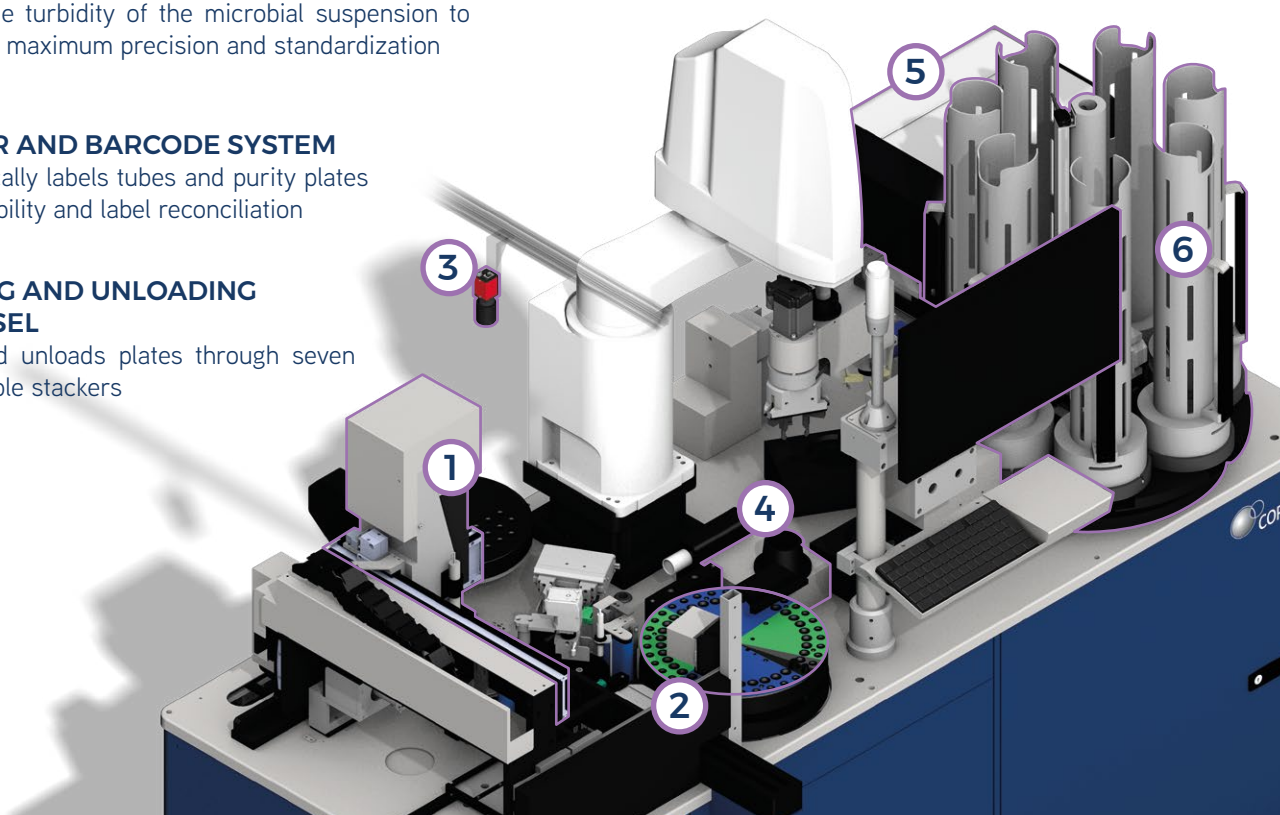
5 PRINTER AND BARCODE SYSTEM
Automatically labels tubes and purity plates for traceability and label reconciliation

6 LOADING AND UNLOADING CAROUSEL
Loads and unloads plates through seven configurable stackers



DIRECT COMMUNICATION WITH WASPLab®
Reliable pickpoint activity thanks to the integration with WASPLab® image analysis.

WASPLab® Webapp highlights with different colors the isolated colonies versus the aggregated ones exchanging the colony coordinates directly with Colibrí™.



MOVING MICROBIOLOGY

WASP-FLO™

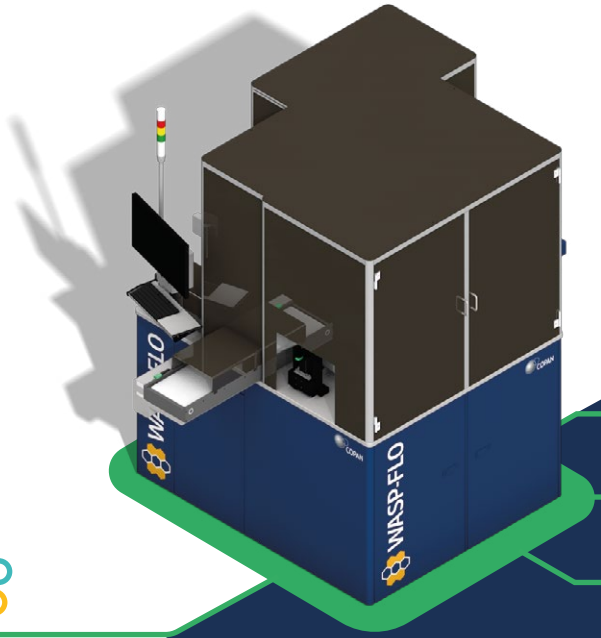
Designed for microbiology laboratories with multiple WASP® or WASPLab® lines to streamline sample loading and unloading.
WASP-FLO™ automatically sorts samples[1], drives them to the appropriate WASP® and batches the tubes in output racks after processing.

- HIGH VOLUMES
- FAST AND RELIABLE SORTING
- EASY SAMPLE MANAGEMENT

OPTIMIZE SAMPLE MANAGEMENT THROUGH RANDOM ACCESS

SORT AND ROUTE SAMPLES TO INCREASE EFFICIENCY AND THROUGHPUT

KEEP UNDER CONTROL THE FULL SAMPLE WORKFLOW THANKS TO THE COMPLETE DATA MANAGEMENT SYSTEM

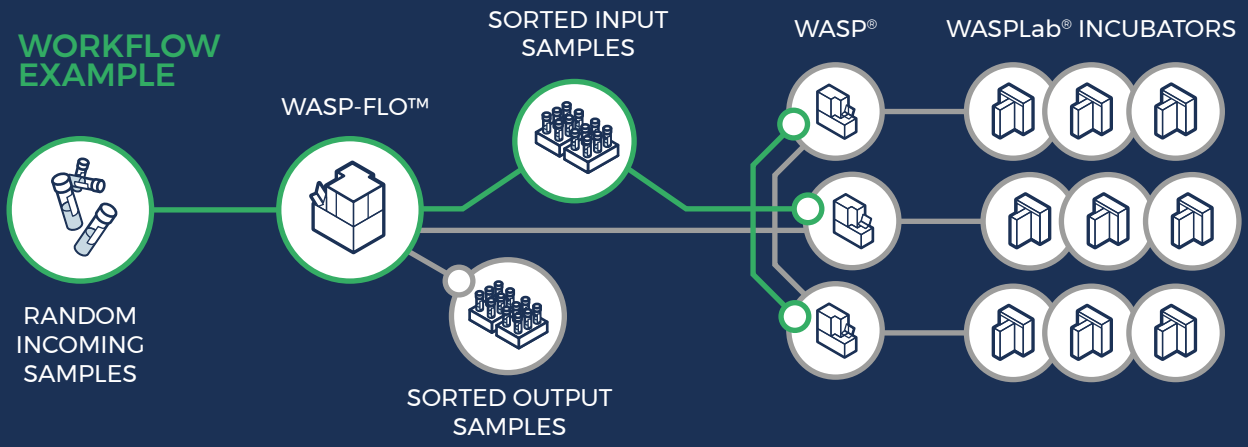


INPUT SAMPLE SORTING

SAMPLE ROUTING

OUTPUT SAMPLE SORTING

WORKFLOW EXAMPLE



THE TECH BEHIND QUALITY

1 **DUAL SCARA ROBOTS**
The Pick-and-Place robots sort tubes* in RFID-driven pallets and unload completed samples onto dedicated racks

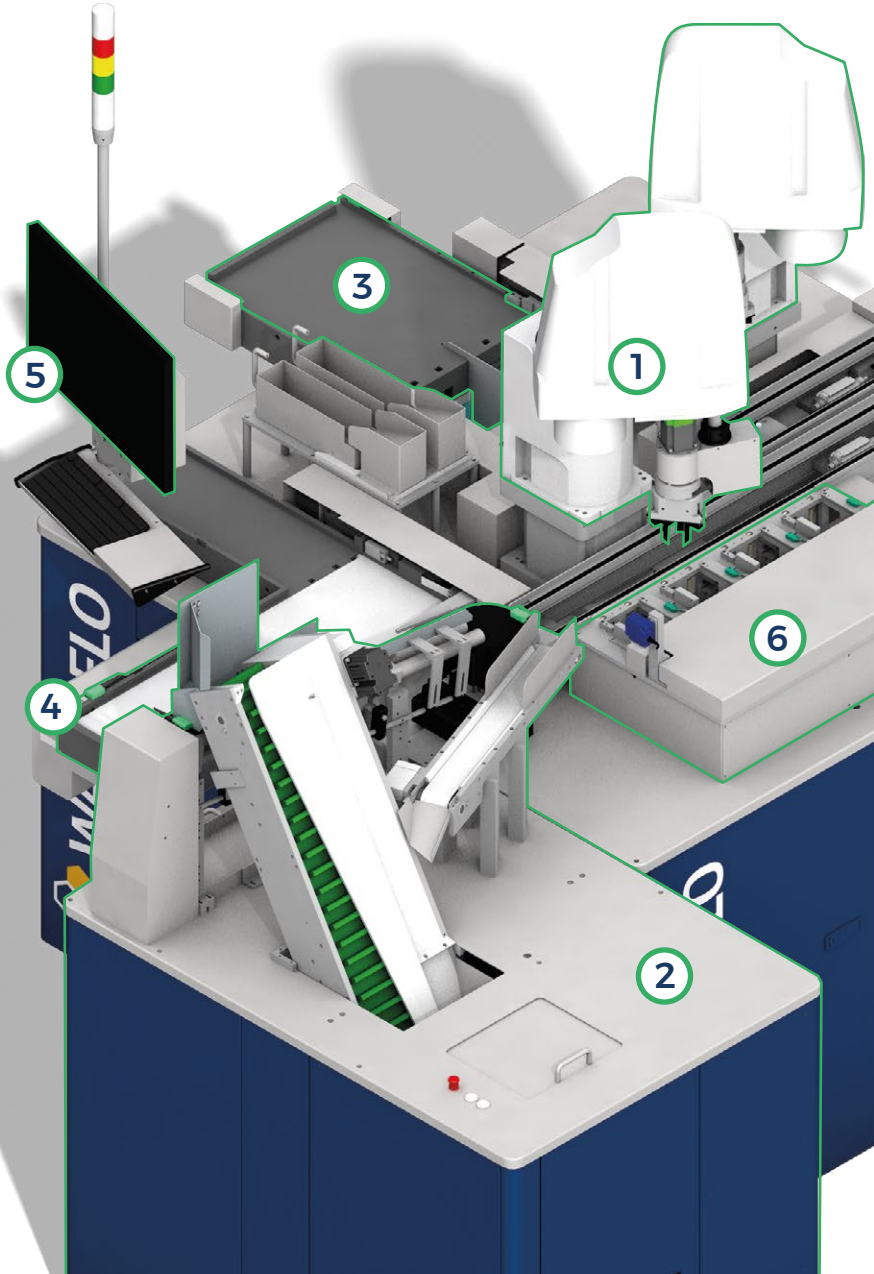
2 **HOPPER MODULE**
Contains up to 600 samples per batch and sorts them individually

3 **COMPLETED SPECIMEN OUTPUT**
Hosts 792 samples divided into eight output racks

4 **MANUAL SPECIMEN LOADING**
Backup loading system for special containers

5 **GRAPHICAL USER INTERFACE**
Manages overall system data

6 **RFID PALLET STACKER**
Includes four columns composed by eleven RFID pallets



MICROBIOLOGY BRAIN

PhenoMATRIX™

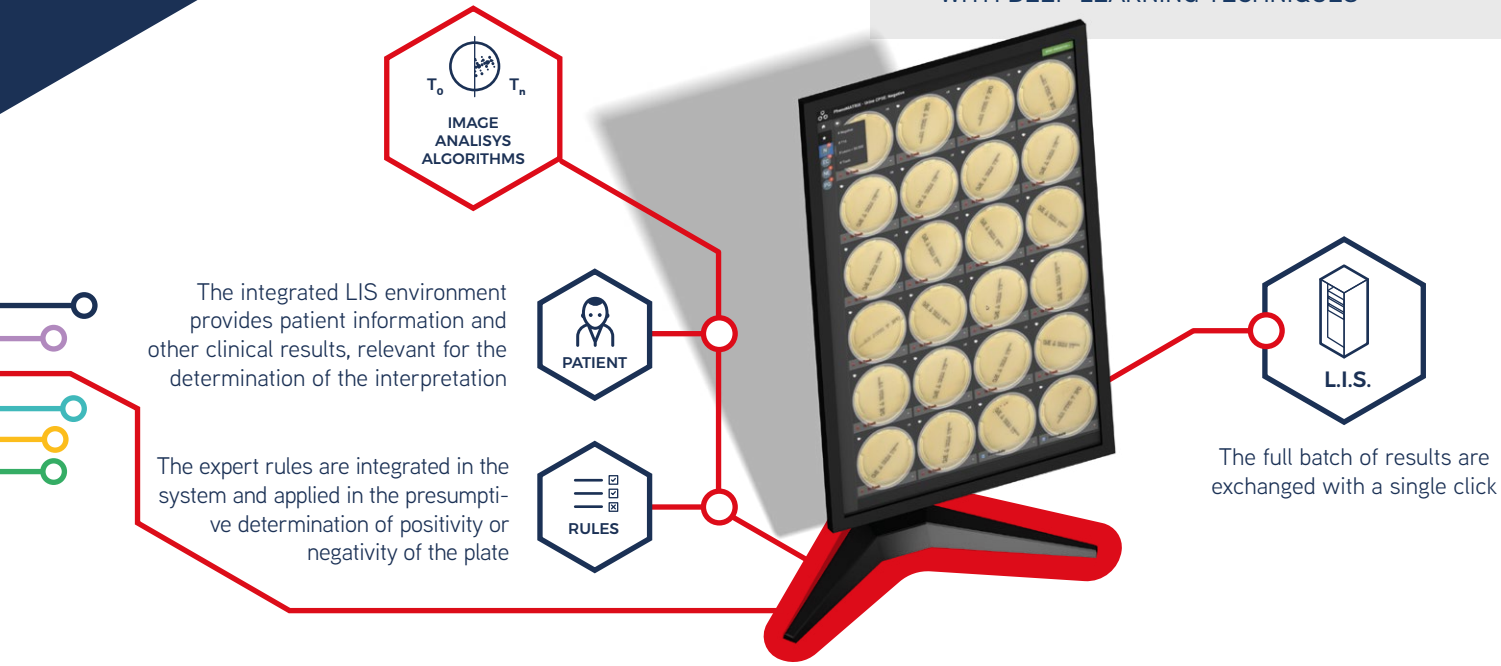
Artificial Intelligence based software for digital microbiology. Enhances positive and negative result management through sophisticated algorithms, demographic data, other clinical reports and your custom interpretation rules.

⊕ NEVER MISS A POSITIVE RESULT[3]
⊕ CUSTOM INTERPRETATION
⊕ RELIABLE VALIDATION

ACCELERATE YOUR INTERPRETATION OF PLATES THROUGH A CLEAR VISUALIZATION

CUSTOM EXPERT RULES FOR A TAILORED SOLUTION ON YOUR LABORATORY STANDARDS

APPLY A CONSTANT QUALITY REFINEMENT WITH DEEP LEARNING TECHNIQUES



The integrated LIS environment provides patient information and other clinical results, relevant for the determination of the interpretation

The expert rules are integrated in the system and applied in the presumptive determination of positivity or negativity of the plate

The full batch of results are exchanged with a single click

DIFFERENTIAL ANALYSIS: THE CONCEPT

Allows to detect colonies up to 100 micron diameter, to ignore the plate noise -prints, scratches, and air bubbles- enabling the design of algorithms of uncomparable sensitivity and specificity.

COMPLETE SET OF RESULTS

PhenoMATRIX™ directly sorts all images showing the final result to the user.
Sorting based on the lab custom rules which combine patient demographic data, clinical results (i.e. leucocytes, Gram), and the output of image analysis algorithms (Presumptive Identification of isolate type, Colony Count by isolate type, Positivity to specific target microorganisms).

1 CUSTOM FILTERS

Group plates in a folder-style interface, based on the laboratory rules

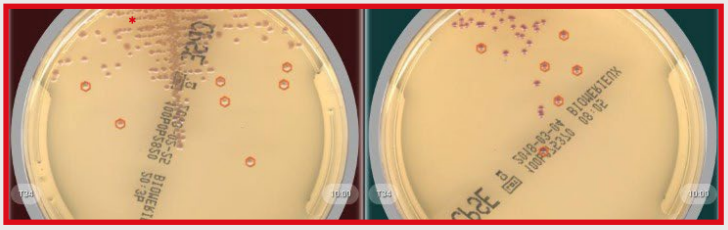
2 ONE-CLICK RESULT RELEASE [3]

All the results sorted using the custom filters are directly sent to LIS with a single click

3 RESULT

Summarize all the plate results: negativity, isolate, colony count, and workup

UNDER DEVELOPMENT [4]



AUTORELEASE: THE CONCEPT

Automatic reporting of the negative results without relying on microbiologist validation.

PhenoMATRIX™ TAG

Understanding the colonies coordinates and morphology, PhenoMATRIX TAG™ automatically detects the most appropriate ones assigning the proper workup for each colony, according to your rules.
PhenoMATRIX TAG™ consequently communicates to Colibrí™ the specific tasks to be performed.

PhenoMATRIX™ PLUS

PhenoMATRIX™ PLUS includes the autorelease feature: all negative results are automatically sent to the LIS and media plates discarded.
This will drastically decrease the hands-on-time for negatives, and speed up the time-to-result for patients.

MICROBIOLOGY STRING

MicroHub™

The latest addition to COPAN software family, the next step into a new way of managing lab data.[4]

Connects WASPLab® to LIS and other instruments, acting as a middleware: patient data, test orders, results, and finally the whole lab workload in real-time.

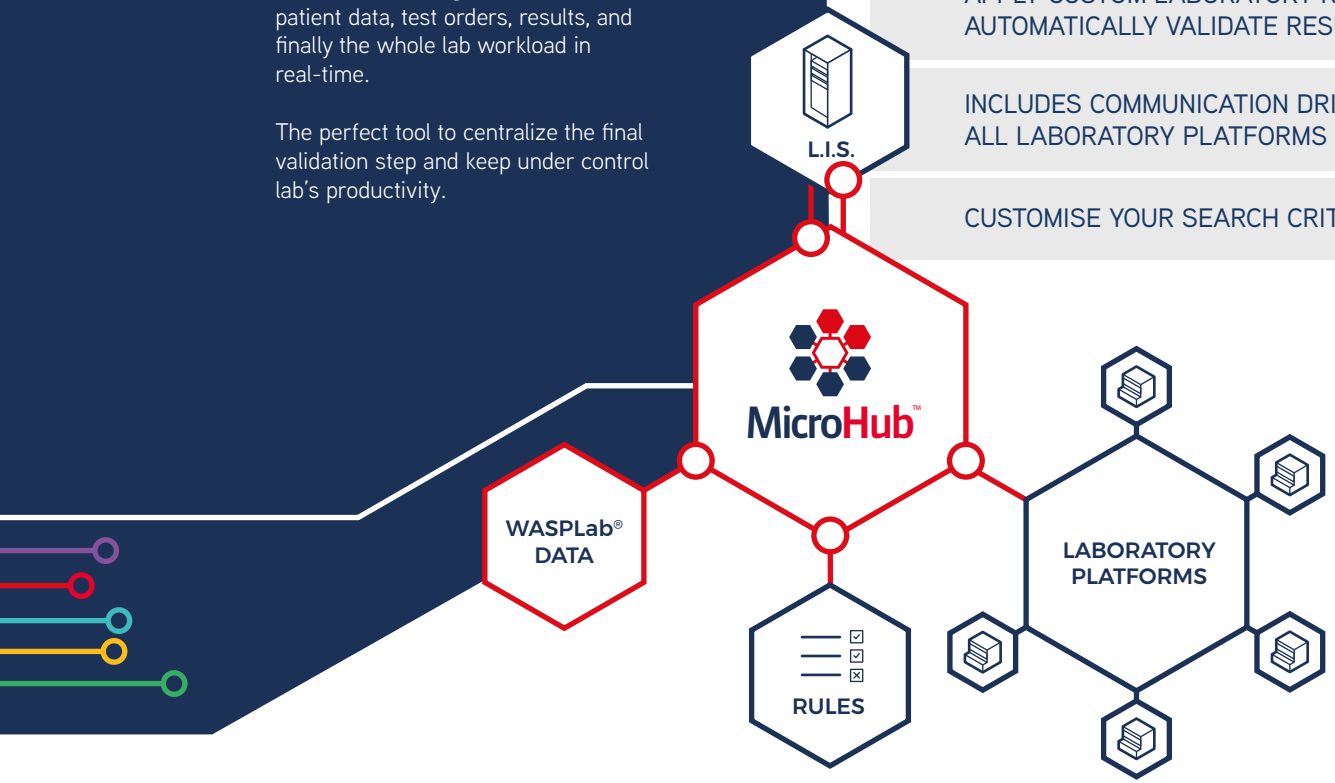
The perfect tool to centralize the final validation step and keep under control lab's productivity.

- ACCESS
- CONNECT
- COLLECT
- VALIDATE

APPLY CUSTOM LABORATORY RULES TO AUTOMATICALLY VALIDATE RESULTS

INCLUDES COMMUNICATION DRIVERS FOR ALL LABORATORY PLATFORMS

CUSTOMISE YOUR SEARCH CRITERIA



FOCUS ON YOUR NEEDS

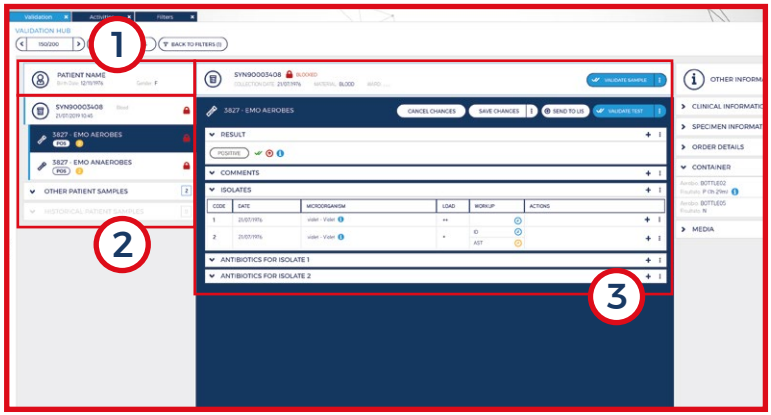
ADMINISTRATION
- REIMBURSEMENT DATA
- TEST ORDER STATISTICS
- LAB AUTOMATION WORKLOAD
- TURNAROUND TIMES

LAB MANAGER
- LAB AUTOMATION WORKLOAD
- WORKFLOW STATISTICS
- TURNAROUND TIMES

MICROBIOLOGIST
- CHECK IN AND TEST ORDER VALIDATION
- PATIENT HISTORICAL RESULTS
- REAL TIME RESULTS
- WORKLIST

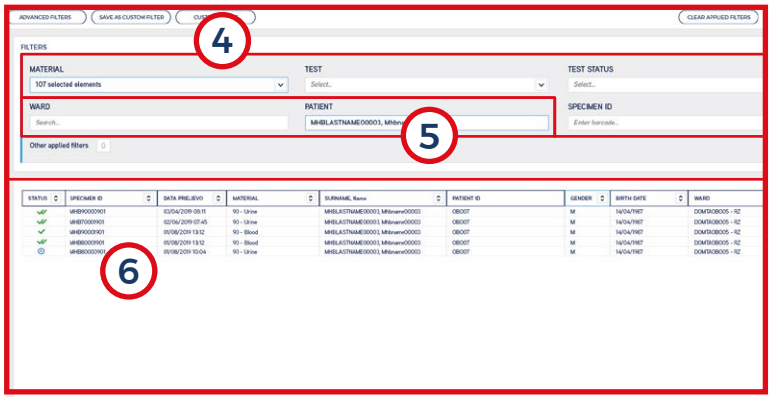
MicroHub™ is your patient-centric interface.
In the Validation Page the Microbiologist can access all the data to validate results, keep track of ongoing processes, optimize the workflow and avoid expensive repetitions.

1. PATIENT DEMOGRAPHICS
2. HISTORICAL, ONGOING AND COMPLETED PROCESSES
3. VALIDATION HUB



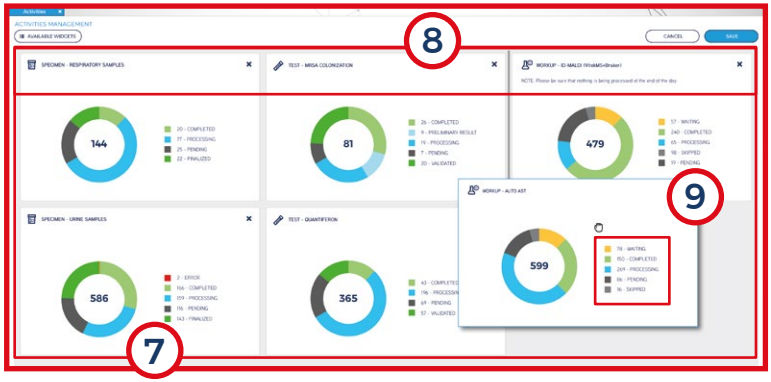
The advanced search page is the ideal representation of the system flexibility. Depending on your goal and level of access rights, within a few clicks you land to the data you are interested in.

4. TEST-RELATED FILTERS
5. PATIENT-RELATED FILTERS
6. FILTERED WORKLIST



The activities management page lets you track the real time performance and workload of the laboratory, highlighting data you choose as indicators of your priorities.

7. CUSTOMIZABLE DASHBOARD
8. DATA CATEGORIZATION
9. STATUS AND WORKLOAD



COPAN WASP S.r.l. c/o Futura Science Park via F. Perotti 18 25125 - Brescia, Italy | t. +39 030 3666100 | info@copangroup.com | www.copangroup.com

[1]. In order to grant the reliability of the diagnostic results to which the systems described in this brochure contribute and allow the safe and correct functioning of the instruments themselves, spare parts, and technical support must be provided by Copan (or its authorized distributors). Any third party's containers, culture plates and consumables to be used on the instruments must be approved in writing by Copan. Limitations may apply: Please refer to Copan's official technical documentation.

[2]. The WASPLab imaging system is patented (AU2014259028B2, JP6460421B2, IT1417398) and patent pending (EP2989470A1, US2016083686A1).

[3]. Subject to final reporting performed by qualified personnel.

[4]. Product not yet commercially available.

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