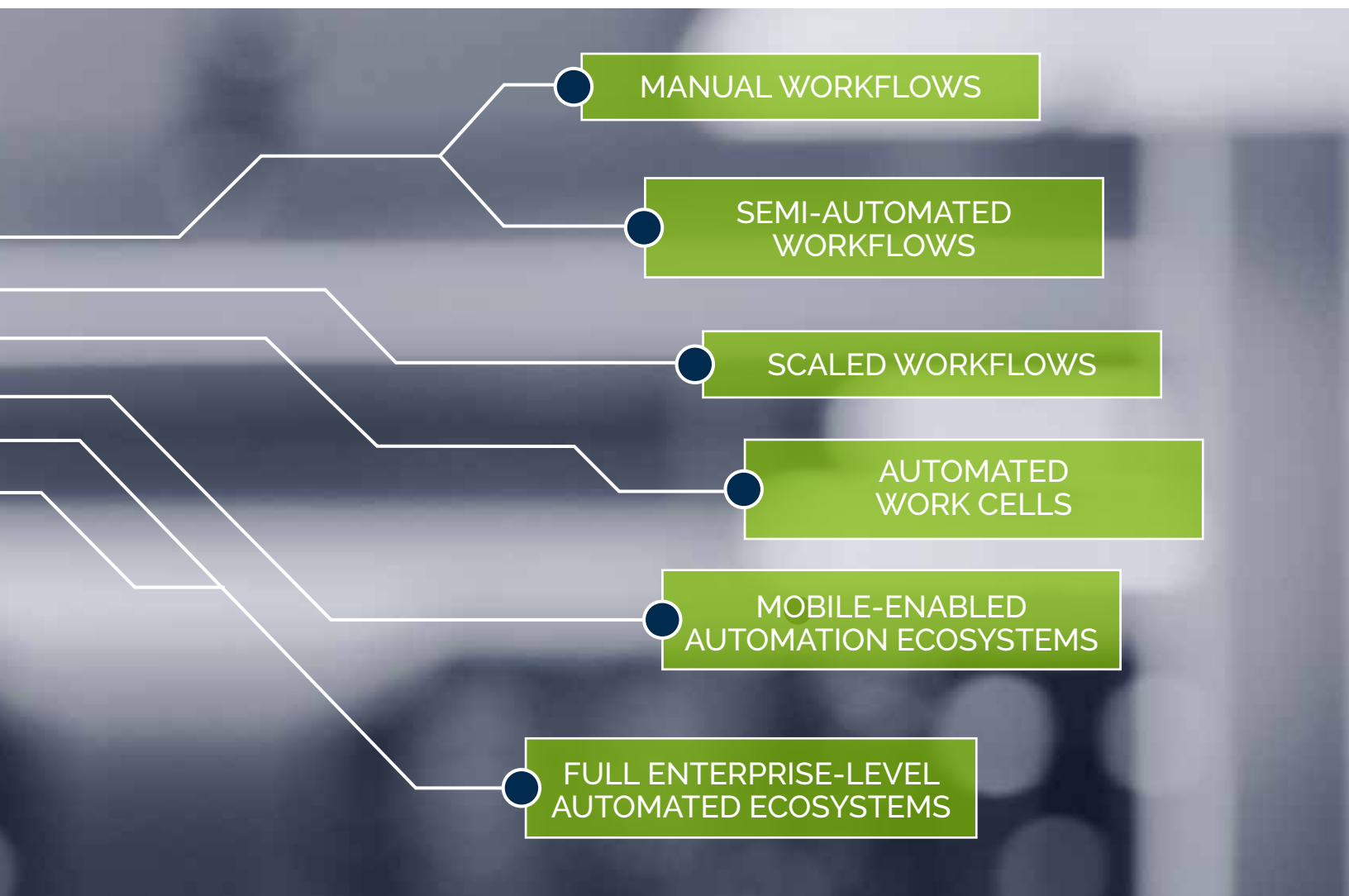# Cellario®

MAGNIFICENTLY ALL-ENCOMPASSING

HighRes® biosolutions

Choose **Workflow Excellence**

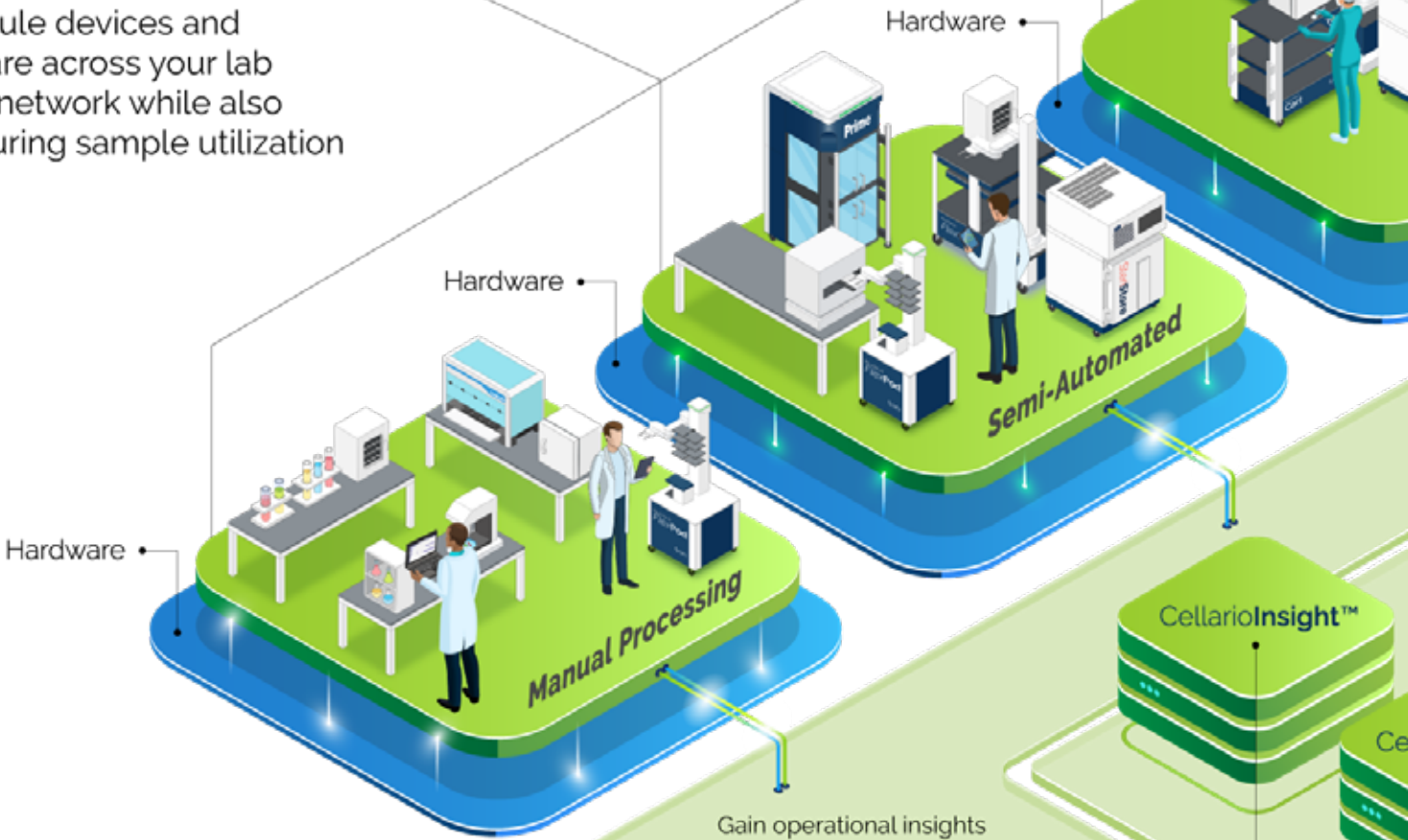## Welcome to excellence in any workflow. Welcome to Cellario.

Elevate your lab's success with Cellario® whole lab workflow automation software. Coupled with robust Nucleus® automation infrastructure and any lab equipment, it delivers scalable automation tailored to your lab's unique needs. From standalone labs to global enterprises, Cellario® ensures seamless integration and advanced efficiency across your entire ecosystem.

MANUAL WORKFLOWS

SEMI-AUTOMATED WORKFLOWS

SCALED WORKFLOWS

AUTOMATED WORK CELLS

MOBILE-ENABLED AUTOMATION ECOSYSTEMS

FULL ENTERPRISE-LEVEL AUTOMATED ECOSYSTEMS

- Simplified workflow scheduling
- Complete device control
- Effortless user experiences
- Significant time savings

- Contextualized scientific and operational data
- Industry leading fault tolerance and error recovery
- Immense workflow scalability

Cellario**Scheduler**™

Schedule devices and
software across your lab
or lab network while also
structuring sample utilization

Hardware

Hardware

Hardware

Semi-Automated
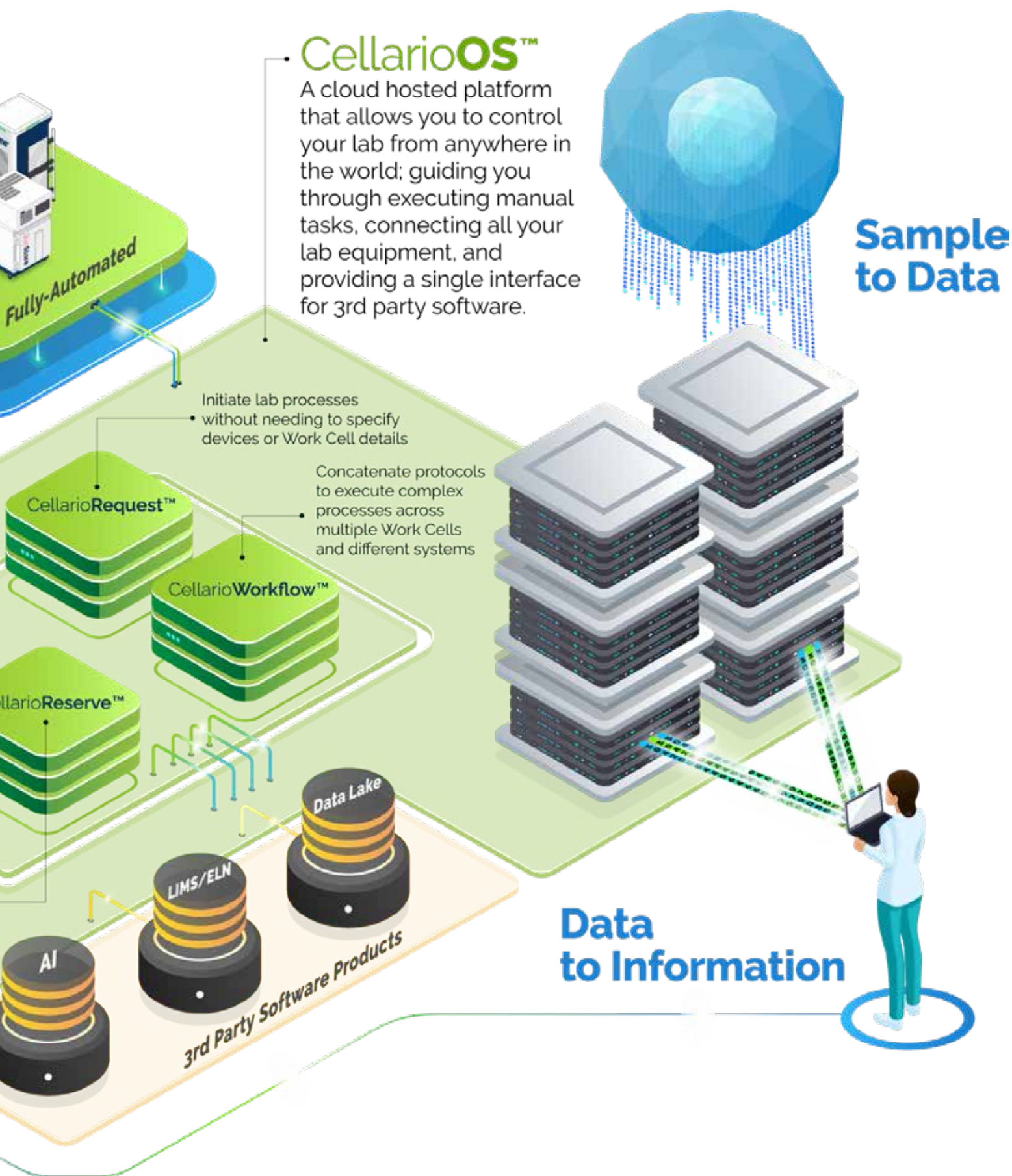
Manual Processing

Cellario**Insight**™

Ce

Gain operational insights
into systems and devices, or
across an entire building or
lab network.

View lab resource and
work cell availability and
reserve your device or
system time

Information
to Insight

CellarioOS™

A cloud hosted platform that allows you to control your lab from anywhere in the world; guiding you through executing manual tasks, connecting all your lab equipment, and providing a single interface for 3rd party software.

Sample to Data

Fully-Automated

Initiate lab processes without needing to specify devices or Work Cell details

Concatenate protocols to execute complex processes across multiple Work Cells and different systems

CellarioRequest™

CellarioWorkflow™

CellarioReserve™

Data Lake

LIMS/ELN

AI

3rd Party Software Products

Data to Information

Cellario Encompasses Your **Unique Requirements**

PACKAGE TIERS	ESSENTIAL	STANDARD
Package Platform	CellarioOS	CellarioOS
Additional Package Modules		Cellario**Insight**
For connected CellarioScheduler* instances and nested resources:		
Centralized API	✓	✓
Centrally interface all assets, protocols and orders, available labware, and software versions	✓	✓
Centrally perform order error recovery (abort/repeat operations)	✓	✓
Guide manual task implementation as part of a protocol run	✓	✓
View events, orders and aggregated errors		✓
Gain utilization, throughput, and error type insights over time		✓
Reserve lab assets and view availability as a list, calendar, or gantt chart		
Approve time reservation requests		
Track request status and progress		
Define request templates and link one or more protocols to balance demand		
Submit requests and track status and progress		
Approve and assign requests to available systems and commit their implementation time		
Concatenate individual request types and define their work direction		
Request and track single workflows rather than multiple individual requests		
Approve workflow requests and, for each step of a workflow, assign it to available systems and commit implementation time		

*See page 14 for more information on CellarioScheduler.

ADVANCED	PROFESSIONAL	ENTERPRISE
Cellario**OS**	Cellario**OS**	Cellario**OS**
Cellario**Insight** Cellario**Reserve**	Cellario**Insight** Cellario**Reserve** Cellario**Request**	Cellario**Insight** Cellario**Reserve** Cellario**Request** Cellario**Workflow**
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
	✓	✓
	✓	✓
	✓	✓
		✓
		✓
		✓

Amplify Your Team with Cellario

- IT Managers and Directors

- Lab and Data Scientists

- Lab Directors

- Lab Operations Managers

- Lab Technicians/Operators

Cellario**OS**™

Start with centralized base functionality

Effortlessly manages your Cellario Work Cell configurations from anywhere in the world to ensure that devices are identically configured and behave in the same manner.

Displays every active Cellario order and workflow status across your enterprise from a convenient web browser.
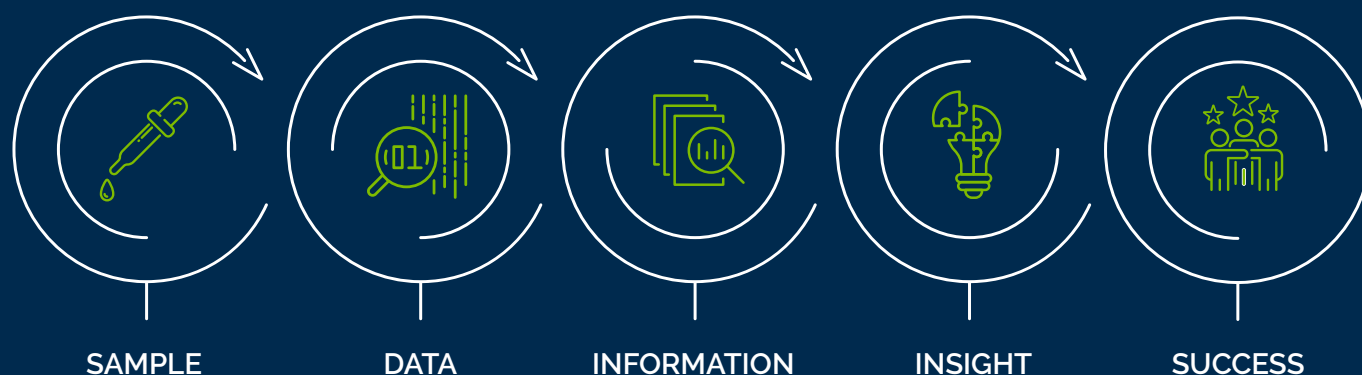
Easily integrates with almost any third-party device and software including LIMS.

Reliably supports:

- One centralized user interface to view and manage all orders, instruments, and systems
- Managing the configuration of your CellarioScheduler instances including labware definitions, configuring instruments, and monitoring driver versions
- An open API enables labs to connect all of their information systems, including your LIMS or ELN, to every instrument and system in your lab
- Automatic audit trail of experiment execution

Positively enables:

- Dynamic digital SOPs guide lab operators through the execution of experiments
- Contextualized structured data to ready to feed your AI models
- Protocols and workflows that extend beyond systems to benchtop devices
- Proper execution of benchtop experiments by driving instrument control and data capture through a single software

| SAMPLE | DATA | INFORMATION | INSIGHT | SUCCESS |

Contact sales@highresbio.com

or your local HighRes Biosystems automation specialist for
more information about Cellario including a personalized demonstration.

Cellario**Insight**™

Leverage valuable information for stellar performance

Gathers operational information including processing throughput, system utilization time, device utilization time, and any errors.

Analyze your throughput and utilization at the device, system, lab, and enterprise level to determine your bottlenecks and make informed purchasing decisions.
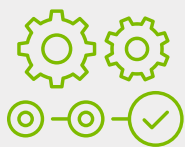
Systematically improve reliability by identifying the most common errors across your enterprise .

Plan your work more effectively by visualizing capacity and identifying underutilized instruments.

Cellario**Reserve**™

Plan for more productivity

Tracks availability of all resources across your lab or enterprise.

Reserves system and device time slots at any time to prevent usage or maintenance conflicts.

Reschedules the reservation of resources based upon changing needs

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Cellario**Request**™

Launch any automated process

Make automation more approachable for your scientists by simplifying order creation.

Create generic demand at the enterprise level. CellarioRequest will inform you of all the instruments and systems that can complete your work.

Simplify requesting by exposing only relevant parameters and inputs..

Attach external identifiers to your requests tying the data and execution to external billing systems, ELN experiments IDs, or other information systems.

Works with CellarioReserve to determine a time where a system is available to execute your request and prevent user conflicts.

Choose to complete your request on an automated system, a set of benchtop devices, or a single benchtop device

Cellario**Workflow**™

Tie it all together

Define a sequence of Cellario Protocols to model your most complex processes across systems, departments, or sites.

Visualize future demand across your systems to best distribute your work.

Dynamically change sample process in future workflow steps based on data collected in earlier steps.

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Cellario**Scheduler**™

Organize, schedule, and implement processes

CellarioScheduler is the dynamic scheduling software component of the Cellario suite of software. By organizing, scheduling, and implementing multiple devices and processes from a single and intuitive user interface, CellarioScheduler adapts in real time to changing conditions or priorities.

Explore our diverse and continuously updated device and software driver list at https://highresbio. com/cellario/.

Design and execute every experiment from simple to complex, from a single system to many, across automation and manual benchtop tasks.

Allows users to trial, pause, delay, adapt, cancel, and even edit active protocols.

Captures and sends metadata and event-based data to CellarioInsight™.

Automatic error recovery empowers the system to fix its own device errors and advanced error tolerance allows your system to keep running even when an error cannot be recovered.
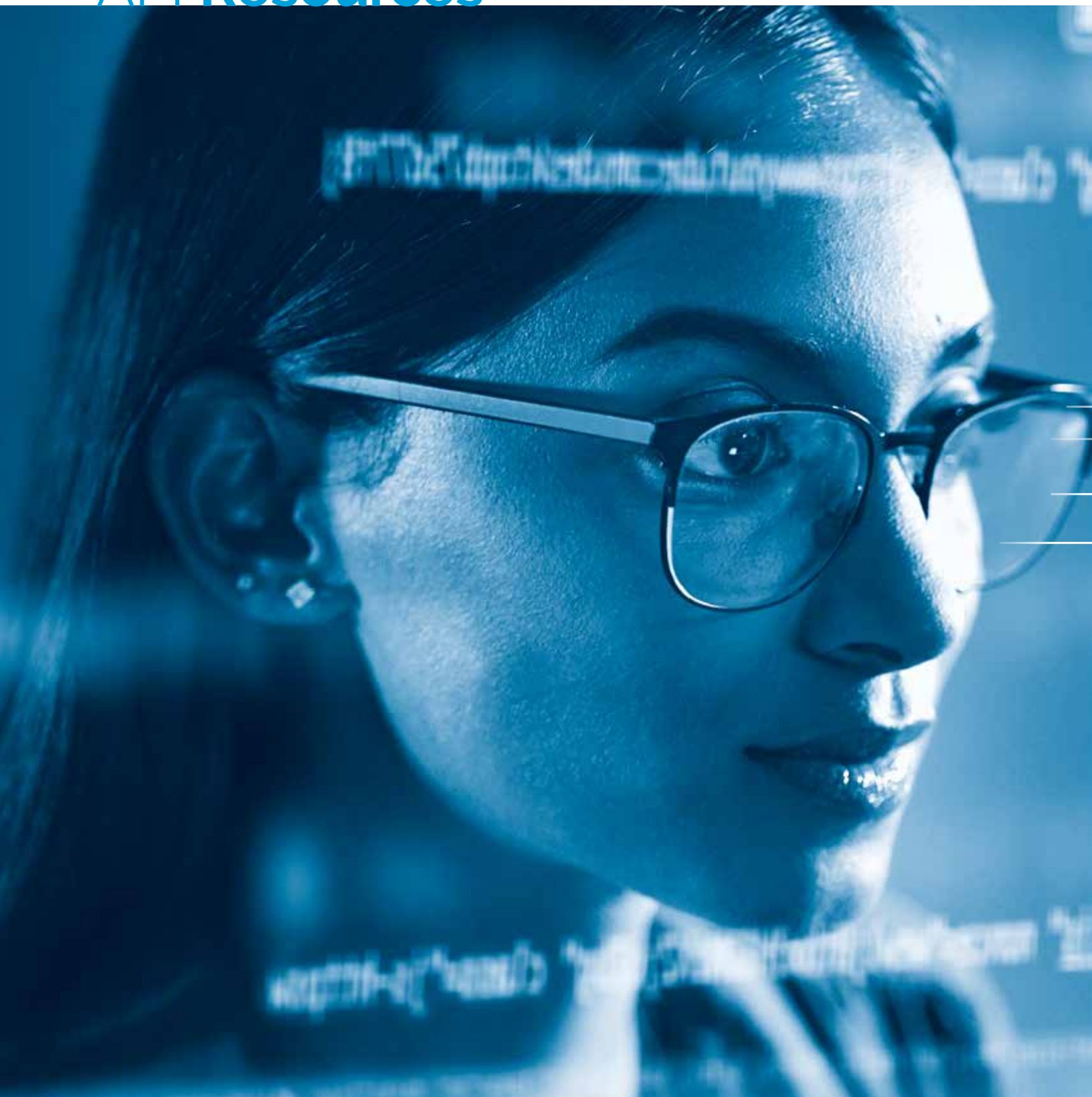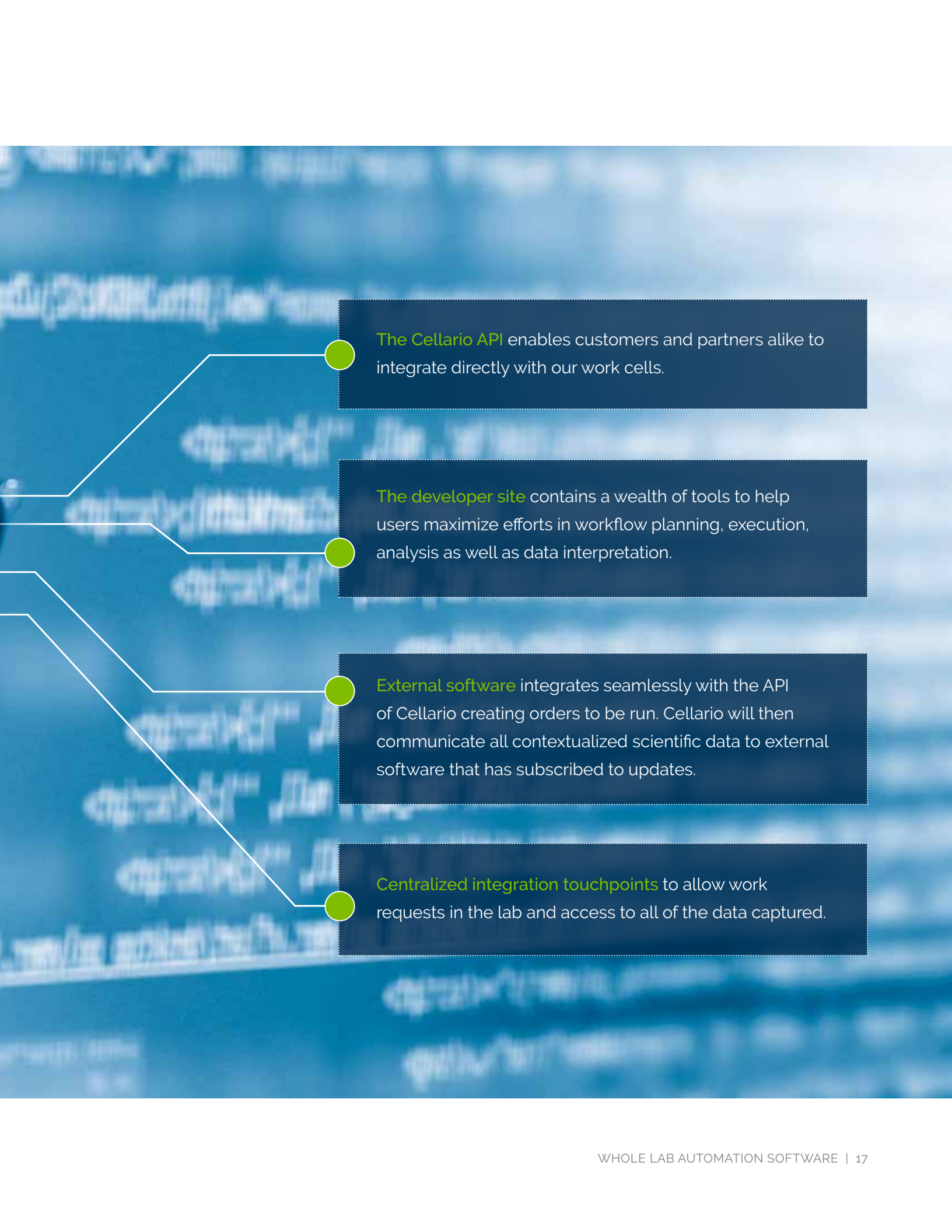
See advanced simulations of your orders prior to execution to ensure your protocol will meet the timing requirements and evaluate what orders can be run in parallel.

Leverages CellarioDriver™ to communicate with any integrated device driver software from our ever-expanding driver library supporting devices from HighRes and leading life science manufacturers.

Dynamically update protocol steps based on data collected during execution or any user definable logic.

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API **Resources**

The Cellario API enables customers and partners alike to integrate directly with our work cells.

The developer site contains a wealth of tools to help users maximize efforts in workflow planning, execution, analysis as well as data interpretation.

External software integrates seamlessly with the API of Cellario creating orders to be run. Cellario will then communicate all contextualized scientific data to external software that has subscribed to updates.

Centralized integration touchpoints to allow work requests in the lab and access to all of the data captured.

FAIR **Advantage**

The Cellario elevated data management strategy positions all digital assets to adhere to FAIR Data Principles:

Findable

CellarioOS RESTful APIs allow searching for data by any metadata field including request id, device name, device location or time

Accessible

CellarioOS allows users or API clients to download data directly from the event entry or from customer storage locations using standard file transfer protocols

Interoperable

Metadata for each file includes external identifiers allowing each data event to be linked across all informatics systems

Reusable

A full record of all actions leading up to the creation of a data event allows users to validate if a data point is relevant to a specific context

Cellario **Training**

Elevate your workflows – whether in a single lab or multi-site enterprise – to new heights of consistency, efficiency, and throughput with on-demand online Cellario training sessions.

Contact your local HighRes Biosolutions Sales Representative for registration details.

When do Protocols get Locked

- In this example, when an attempt is made at saving the protocol, a warning is given that a resource is not assigned to a peel step
- As soon as a resource is assigned to the plate peel step, the protocol can be saved as a valid protocol

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