



RoboLab – Driving Device Development through infrastructure

DENNIS AUGUSTIN

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RAYA 2024 Finalist Event



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~ 50.000

Employees in 70 nations

> 3.000

Employees in Ludwigshafen

> \$7,1 bn USD

R&D Investment (2022)

30+

Products on the market in the fields of immunology, neurology, oncology, aesthetics and more.

175+

Nations where AbbVie products are used

~ 62.000.000

Patients

A large part of AbbVie assets are delivered in devices.



Device diversity leads to heavy testing workload for R&D DVT and Commercial QC

Testing endeavours are purely manual - leading to repeated, dull tasks with high operator deployment.

Testings in accordance with ISO 11040 etc. for all functional aspects of combination products such as ejection force and actuation force.

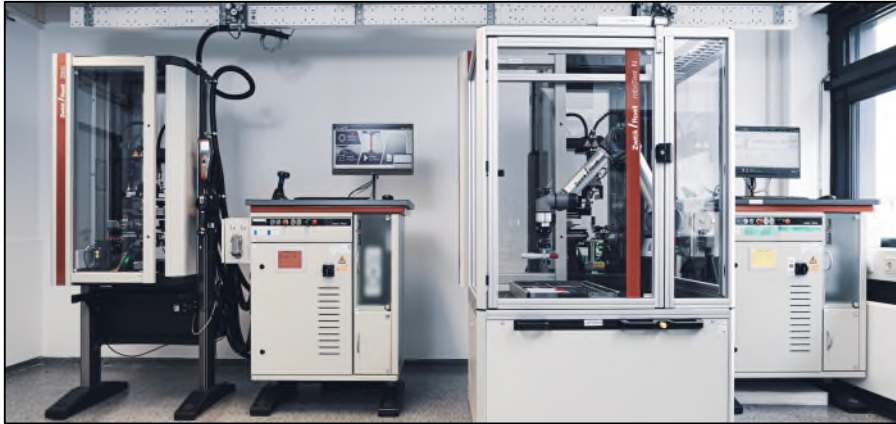
ICH stability tests are also part of the workload leading to even higher sample sizes

Device handling and documentation are purely manual leading to up to 8 h per day of total operator deployment

Manual task leads to scheduling bottlenecks.



RoboLab is AbbVie Germany's automated combination product testing suite with robotic integration, designed with ZwickRoell



2 automatic testing machines

Flexible robotic system

5 types of injection devices

R&D and Commercial features

RoboLab Key-Facts in 60 seconds

Unified R&D and Operations platform for seamless QC and lab collaboration.

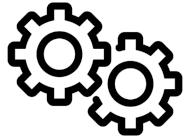
Redundant testing systems for high throughput design verification.

Testings in accordance with ISO 11040, ISO 11608, and integration with assembly data.

Robotic system streamlines loading and unloading of device samples for maximum efficiency.

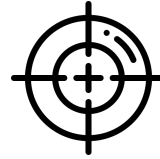
Fully integrated with LIMS and ELN for automated data management.

The robotic system is the major enabler within the system, performing all critical tasks:

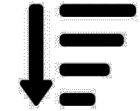


Automated Feeding:

Increasing throughput, reliability and improving labor costs through automated tray infeed.



Precision Handling: Precise, validated and consistent placement of devices for accurate testing and less errors.



Sorting:

Automatic sorting and flagging of tested devices based on the results, ensuring only a chosen subset of products move forward.



Why?

Why?



ISO & ICH environment demands extensive testing schemes. Lab utilization can be very high during heavy project workloads.



High lab utilization leads to less capacity to work on actual development tasks.



Longer lead times, long project queues and higher number of testing errors.



Future proofing lab environments, mitigating labor shortages, driving innovation.

Why?

88 %

Less operator deployment

1h vs 8 h

Operator commitment per testing day

Up to 40 %

Of total workload relief for lab staff

25 %

Of sample size due integrated testing

\$ > 300

Of daily savings

ROI < 3 yrs

As achievable target after breakeven

To summarize: Why did AbbVie pursue this application?

1. Significant ROI & Cost Efficiency

- Automation Savings: Reduces manual labor costs significantly.
- Increased Productivity: RoboLab more than triples throughput per employee.

2. Unmatched Operational Flexibility in R&D and QC Lab setting

- Handles Diverse Products: Seamless handling of various DVT product types.
- Quick Switchover: Perfect for multi-product environments.

3. Seamless Integration & Scalability

- Integrates with existing LIMS/ELN systems.
- Future-proof: Scalable productivity and possibility to include in End2End concepts.



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