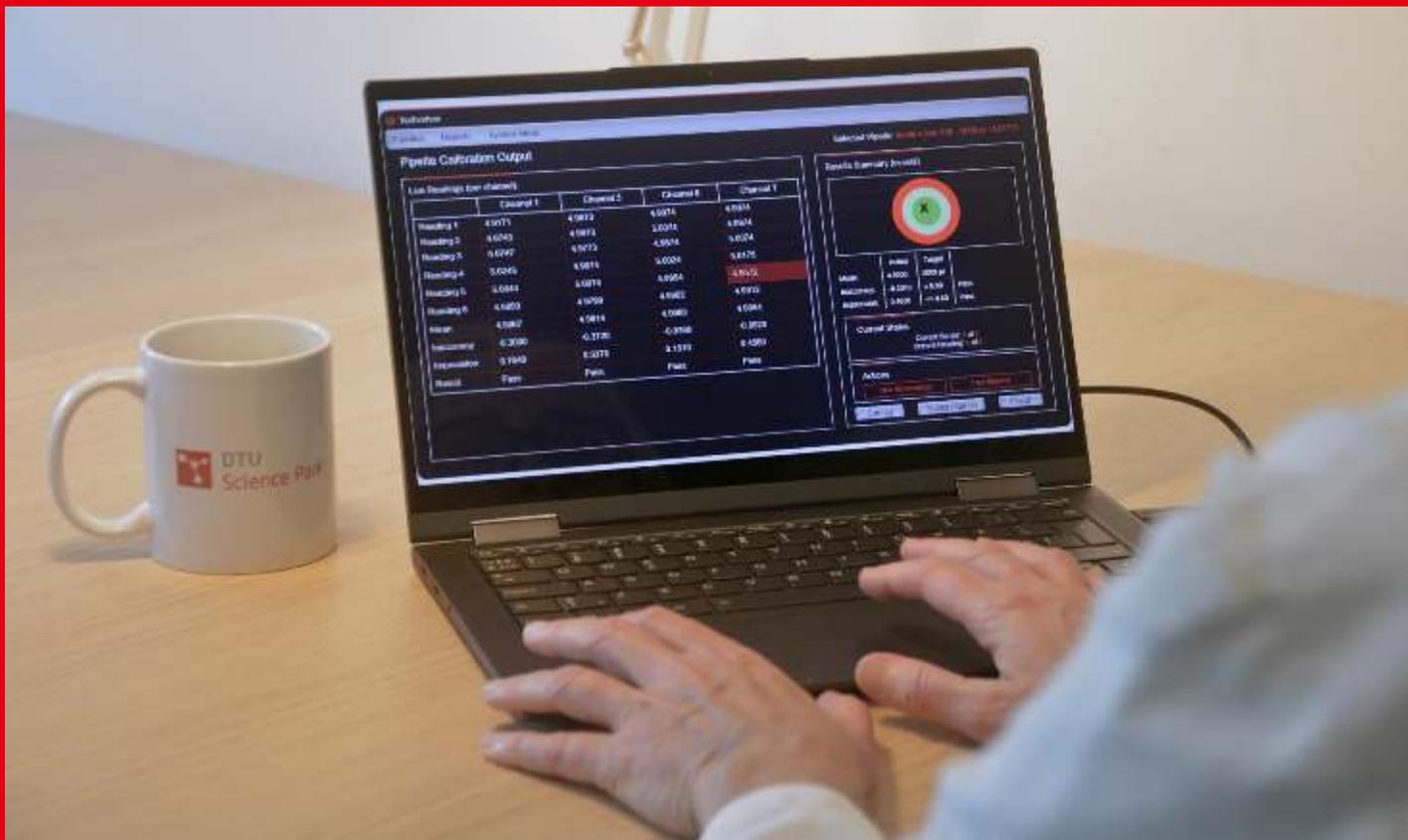# Calvolver

The safe and simple way to 100% data integrity
in pipette calibration

| White Paper

Introduction

Improving accuracy and consistency of data is an ongoing activity across all industries and bad data integrity can cause everything from minor hassles to significant business problems.

Pipette calibration is a vital activity in life science companies; nevertheless, it remains a manual, tedious, and not optimized task that relies on an extensive list of processes implemented to mitigate the weaknesses in manual data handling.

In this paper, you will read about our mission to change how pipettes are calibrated today. Based on knowledge and existing technology, we simplify workflow processes and increase efficiency, while lowering costs and offering the possibility to have full data integrity.

FACT 01

Data integrity refers to the overall accuracy, completeness, and reliability of data.

Data Integrity at a Glance

What do we mean by 'Data Integrity'?

The term is broad in scope and may have different meanings depending on the specific context, but the overall purpose of any data integrity technique is the same:

ensure data is recorded exactly as intended

prevent unintentional changes to data

data accuracy and consistency over time

Any unintended changes to data as the result of a storage, retrieval or processing operation, including malicious intent, unexpected hardware failure, and human error, may jeopardize your data integrity.

Consequences range from loss of a photo from your holiday to catastrophic loss of human life in a life-critical system.

Data Integrity in Life Science

Like in any other industry, data integrity is vital for businesses in life science.

Laboratories worldwide all face the same challenges: errors must be minimized, and processes improved to increase lab efficiency and productivity. Properly recorded information is critical in highly regulated life science companies to improve quality and performance while reducing costs and time to market.

The need to be compliant is expected to drive organizations to make significant changes, such as modernizing the operational processes, automating meaningless human tasks, and eliminating obsolete systems based on paper files and spreadsheets.

Pipette calibration is an essential element in lab workflows and entails vital data handling. Therefore, it is natural to consider new ways to optimize.

If pipettes are wrongly calibrated, and 'passed' when they should have 'failed' consequences can be severe. Also, data incorrectly handled can cause a process deviation. Such cases make it necessary to redo lab work related to the pipette, and in a worse-case scenario - production may be stopped, and products recalled from markets.

Manual Pipette Calibration Today

Today, lab technicians spend too much time that is not creating actual value.

Collecting and packing pipettes, waiting to get them back from calibration, unpacking and registering the calibration details in a management system or handling it manually, are unnecessary and suboptimal processes.

Therefore, manual pipette calibration and any associated manual data handling are suboptimal in today's processes. Routine data handling activities result in different techniques with varying results.

FACT 02

Reliable data is the foundation for good decisions and good science.

FACT 03

Manual data entry increases the risk of errors.

Data Integrity in the Manual Calibration Process

Laboratories mitigate the risks associated with manual pipette calibration and data handling typically through a range of processes.

These processes introduce additional handheld activities such as paper asset logs, multiple reviews by different employees, signatures on hard copies, calibration process constraints, segregation of duties, and continuous validation processes of hard and software tools. Heavy requirements in supplier approvals, third-party accreditation requirements, and training regimes are also often put in place.

As a result, calibration becomes a burden for laboratories, and it is at times sidelined and not performed at the recommended frequency nor with the optimal acceptance criteria. This occurs because the abovementioned activities are suboptimal and increase the complexity of documenting compliance, consequently defeating the purpose of the value-adding activity that calibration is meant to be.

Calvolver – The Digital Game-Changer

At Techvolver, we are driven to help build sustained business growth while improving the bottom-line. Our on-site automated pipette calibration solution, Calvolver, provides strong, measurable results and allows for fast and 24/7 calibration of most manual and electronic pipettes. We help our clients comply with the increased quality and traceability demands in the life science industry, by automating the calibration itself and the related data handling.

What is Calvolver and how does it work?

- Calvolver is a cabinet placed in your laboratory like other lab-equipment
- Inside the cabinet, the pipette calibration is performed by a robot arm from Universal Robots
- The process complies with relevant ISO-standards, customer SOPs and any other requirements
- Scales and sensors are calibrated by accredited institutes
- Calvolver is delivered, installed & validated in your lab

100% Data Integrity with Calvolver

Through digitization and automation both the calibration and data handling can be performed without people interaction or data access. On top of that, data is immediately available at your fingertips.

Lab technicians can pick-up freshly calibrated pipettes in the morning and start working on real value-adding activities, because:

1. After work, they simply place the pipettes in the cabinet.
2. From here, the pipette calibration specifications are automatically imported from the integrated LIMS (laboratory information management system) and matched with the individual pipette.
3. The calibration cycle starts and runs overnight.
4. Once completed, the pipette status is digitally updated in the LIMS, and the pipettes are ready for use.

In case of calibration error or inability to meet requirements, the individual pipette can be identified.

So, with no human data handling or access, Calvolver offers 100% data integrity in your calibration process.

FACT 04

Calvolver is our on-site automated solution, performing pipette calibration with no human interaction.

Conclusion

Calvolver delivers full data integrity at a reduced process complexity, while also ensuring cost savings, freeing up resources for value-adding activities, removing the negative physical work environment linked to manual calibration - and ultimately, reducing the risk and liability of compromised pipettes.

With our 24/7 solution, lab technicians or anyone working closely with pipette calibration also have the flexibility and convenience of deciding when to have their pipettes calibrated – day or night.

So why wait?

We are more than happy to expand on how Techvolver can further help you become more efficient and obtain 100% data integrity.

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