

## GMP: THE TECHNICON AUTOMATED BOTTLE FILLING SOLUTION

For a global pharmaceutical pharma company at an Asian production site Technicon has developed an advanced, innovative and scalable automation solution designed for GMP. The **Technicon Automated Bottle Filling Solution** operates automatically efficiently and reliably ensuring correct filling of bottles/containers in clean room C & A. The solution improves both batch quality, flexibility and productivity. Simultaneously the solution minimize the cost of labor and the risk of contamination.



### Challenge

Typically, the finger dipping incubation analyzes process related to clean room operations takes 16-24 hours. This is a costly and time-consuming challenge.

The **Technicon Automated Bottle Filling Solution** eliminates the costly manual physical touch step in the filling process effectively combatting the challenges related to clean room operations. Instead of spending substantial time on physical touch on agar plates and analyzing, the robot solution automatically provides instant batch validation.

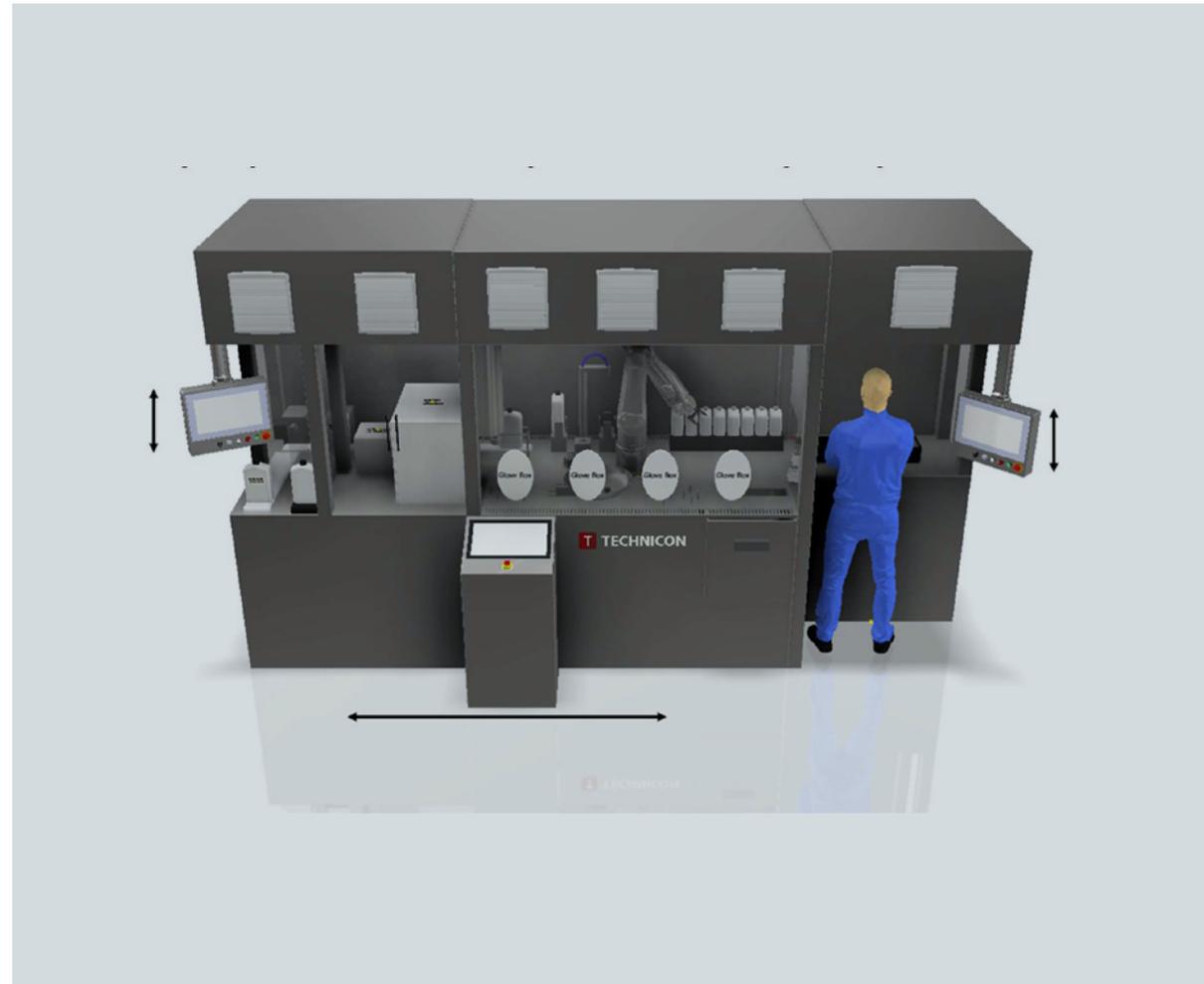
This accelerates the filling process flow and reduces the time and cost of labor considerably. Furthermore, the risk of contamination is simultaneously minimized.

## Solution

The **Technicon Automated Bottle Filling Solution** is designed to operate in clean room smoothly handling bottles with final products for filling line.

The robotic solution is flexible and can handle a variety of bottles – in various sizes as well as in various weights.

Due to its modular, scalable and flexible design, the innovative **Technicon Automated Bottle Filling Solution** can easily be reconfigured to handle a wide range of bottles in various sizes.



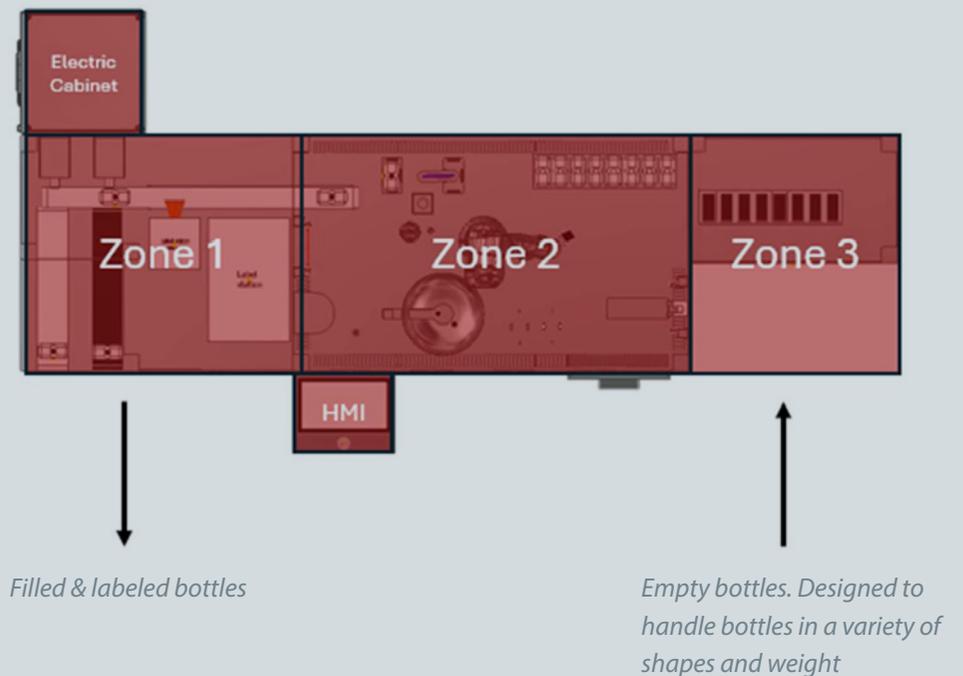
# SOLUTION OVERVIEW: MODULAR & SCALABLE

The **Technicon Automated Bottle Filling Solution** consists of three sections:

- + Section 1 (zone 3 – Class C): Continuous manually loading of empty bottles ensure correct placement in the inlet zone. This section can also be fully automated.
- + Section 2 (zone 2 – Class A): In a glass/plexiglass shielded cleanroom, a reliable Stäubli Stericlean Robot efficiently handles each step in the filling process.

The solution designed for clean room C automatically, smoothly and steadily transfers the bottles/ containers to clean room class A area.

The solution is based on first air principles with providing clean air flow. Laminated Air Flow (LAF) in each zone effectively removes air containing bacteria. The air flow is filtrated through Hepa Filters. The integrated Particle Count Module constantly monitors the levels of particle ensuring the levels do not exceed the limit values. This minimizes the risk of contamination.



Advanced digitalization – e.g. Computational Fluid Dynamics Analysis – is used to simulate the entire automated process. This ensures avoidance of any areas with potential stagnated air.

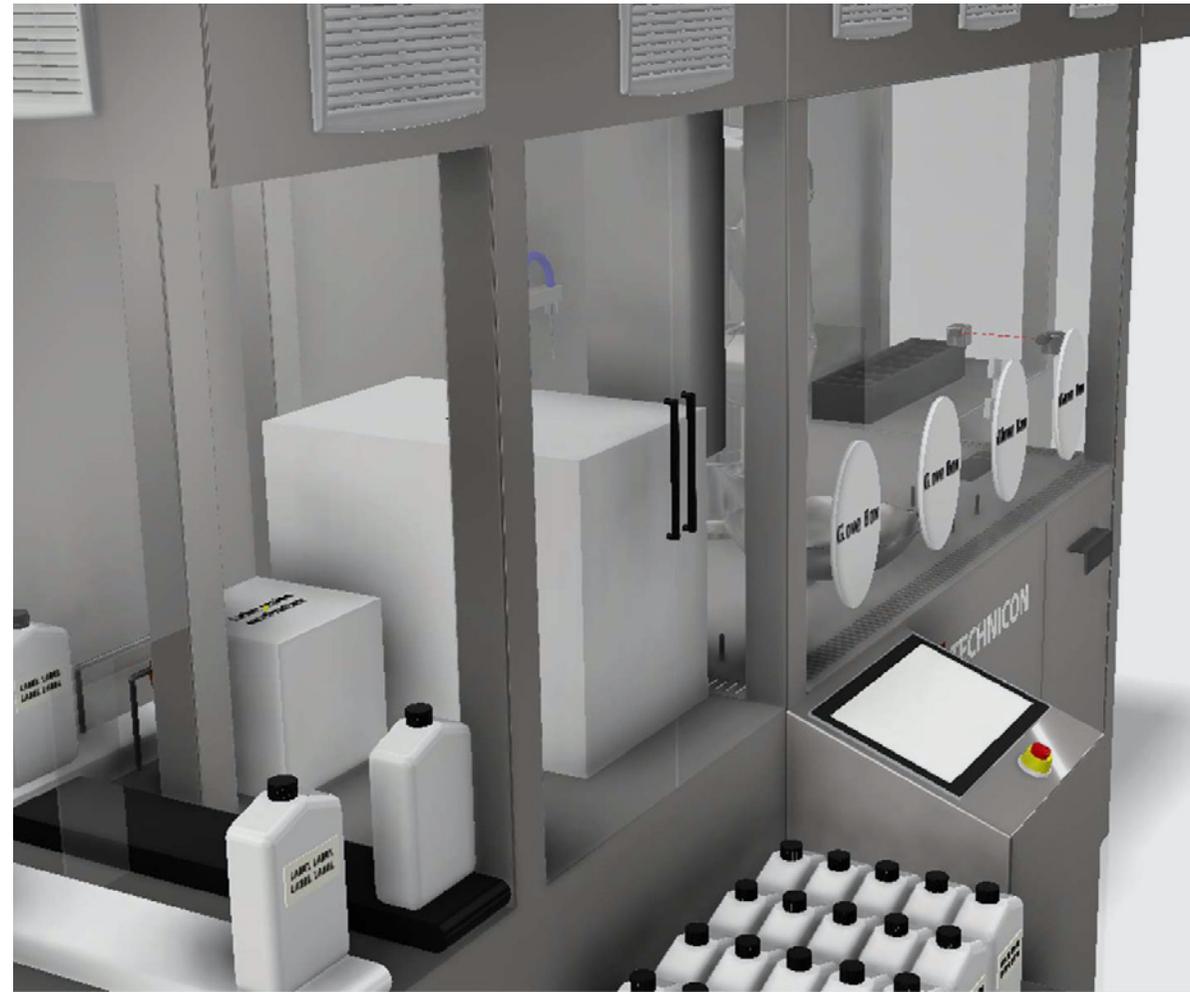
Using a specially designed tool attached to it, the robot then removes the sterile cover from each bottle. Then each bottle is filled accurately. Two load cells measure each bottle/ container to verify that every bottle/ container is correctly filled.

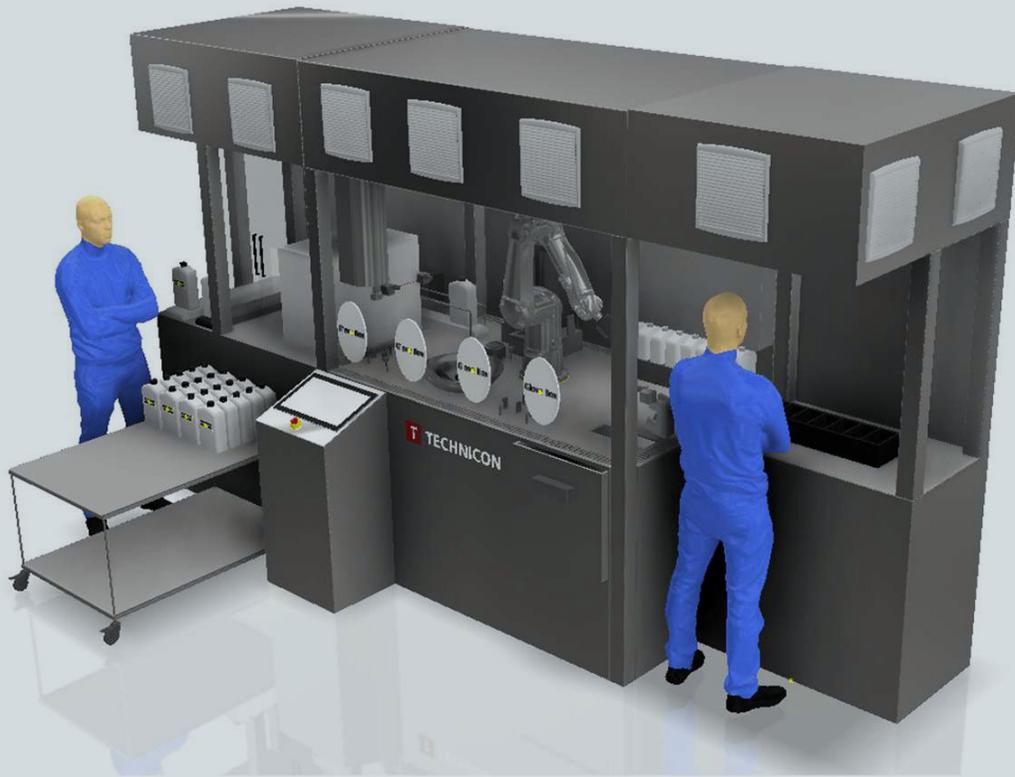
A LinMot torque force gripper with a built-in motor gently ensures that each cap is precisely and correctly applied.

Prior to each batch run, the Automated Bottle Filling Solution undergoes a thorough cleaning procedure performed by operators. This to ensure that no microbial contamination is introduced during the process.

Additionally: prior to initiating a batch run, an adequate quantity of caps is placed within Zone 2 Class A to ensure uninterrupted operation.

- + Section 3 (zone 1 – Class C): The robot then lifts the individual containers onto a conveyor belt, where each bottle/ container is labeled.





A vision system checks each bottle container and ensures that label placement and information is either approved or rejected and will send the data for each bottle/ container to the respective IT-system.

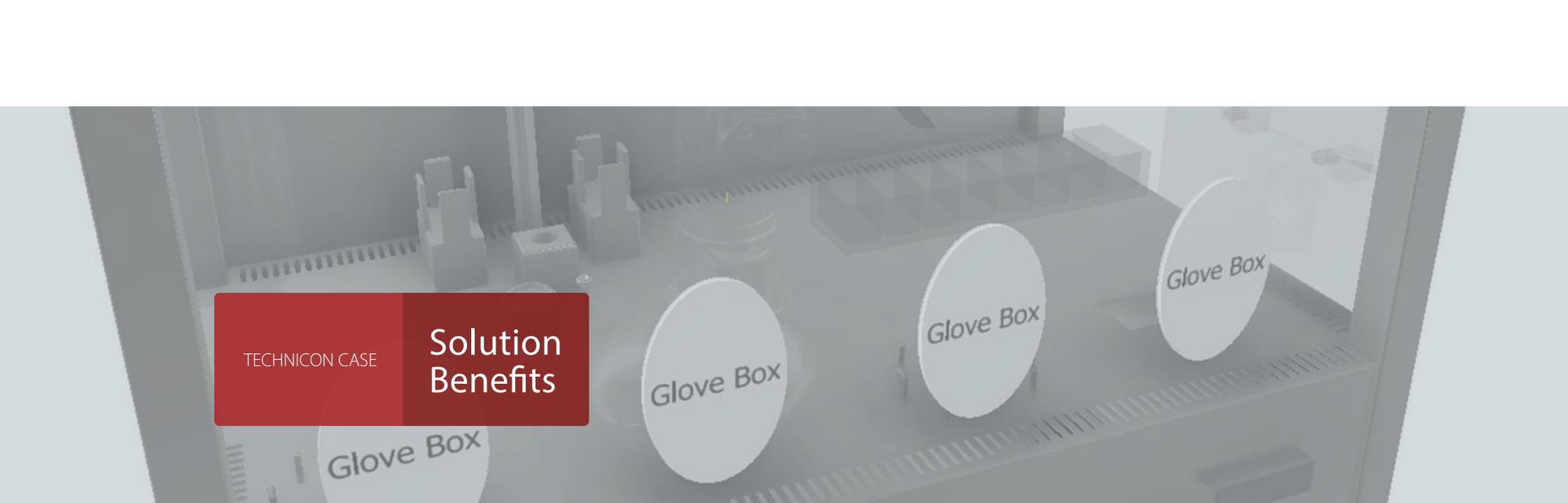
Each bottle is labelled with a unique identification number. The build-in batch management system communicates directly with the company's IT-system. The solution thereby strengthens the documentation and validation process

This ensures real-time batch reporting and contributes to increased traceability as well as high, consistent production. Finally, an operator manually transferring the filled bottles/ containers to the next step in the flow.

Each bottle/ container and every cap fed in to The Automated Bottle Filling Solution are sterilized.

The innovative solution is designed to handle a variety of bottles and products. This enhances both flexibility and enables a more cost efficient and stable production of smaller batches.

## DESIGNED FOR CLEAN ROOM C



TECHNICON CASE

## Solution Benefits

The **Technicon Automated Bottle Filling Solution** is a scalable plug-and-play solution with a user-friendly HMI Interface. It consists of thoroughly tested world-class technology. Meeting the highest quality standards, the solution adds efficiency, stability and traceability to complex production processes and filling procedures within the Life Science industry.

Having the dimensions: 2.200 x 4.300 x 1.150 mm. The **Technicon Automated Bottle Filling Solution** has a small footprint, and the solution can easily be integrated into any production setup as well as it can be adapted to different and varied requirements.

The **Technicon Automated Bottle Filling Solution** effectively solve the finger dipping challenges, reduces time consumption procedures – e.g. related to the internal validation process. Furthermore, the solution minimizes labor time and decreases the risk of contamination.