

SMART FACTORY ASSEMBLY USE CASE

Smart Assembly Solutions for SMEs

Small and medium-sized enterprises (SMEs) often face unique challenges in digitalizing their production. Unlike large corporations, they may not have dedicated teams for software evaluation or implementation. Instead, they rely on practical, proven solutions – and on partners who can guide them through the journey.

ELAM Solutions is ideal for SMEs looking to modernize their assembly processes without complexity. Whether it's guiding workers, improving quality, or reducing paperwork – ELAM offers a plug-and-play experience with a strong focus on usability, fast rollout, and measurable results. Many SMEs appreciate the flexibility of ELAM and are open to trying new technologies when they see real value and support from experienced industry leaders.

CUSTOMER

- **Industry Sector:** Mechanical and Electromechanical Assembly Services
- **Founded:** Mid-1990s
- **Employees:** Small team of specialists
- **Production Environment:** State-of-the-art assembly workstations designed according to LEAN principles, ensuring optimal efficiency and quality.

INITIAL SITUATION / CHALLENGE

Before implementing ELAM, the customer relied heavily on paper-based documentation to guide their assembly processes and record quality checks. This approach was time-consuming and prone to manual errors, especially in high-mix, quality-critical assemblies.

Each product required extensive quality testing, including interface testing for wave assemblies destined for overseas production. The testing process itself was time-intensive and lacked digital traceability. A particularly critical issue occurred when screws were not fastened properly on a product that had already been shipped overseas. Since the error was discovered too late, rework was no longer possible – leading to strong feedback from the customer and putting pressure on the production to improve process security and documentation quality.



PROJECT GOALS

The main goal of the project was to ensure **complete process supervision** during the assembly of the interface. Specifically aimed to:

- **Monitor and validate all screw fastening operations** to avoid quality issues and ensure process safety.
- **Document all quality-relevant steps digitally**, including **photo documentation** for visual verification and traceability.
- **Enable new employees to start assembling the interface with minimal training** by using guided digital work instructions, thus reducing onboarding time and ensuring consistent quality across operators.

By achieving these goals, we intended to significantly reduce the risk of undetected errors and rework, especially for products shipped overseas.

SOLUTION

To address the challenges and project goals, we implemented **four ELAM PRO workstations** on the shopfloor – **three dedicated to interface production and automated quality control**, and **one for final packaging**.

Each of the workstations is equipped with:

- A **Kolver screwdriving system** for precise torque control.
- A **bit selector** to ensure correct tool configuration per task.
- A **SMACO tool** for accurate screw counting.
- **Pick-to-light systems** guiding operators to the correct components in each step.
- **Webcams** for capturing **quality-relevant process images**, which are automatically stored in the **digital quality report**.

With this setup, our customer not only ensures full process supervision and traceability but also makes onboarding easier, enabling new employees to start working productively right away with clear, step-by-step digital instructions.

IMPLEMENTATION

The implementation was **quick and straightforward**, following a **plug-and-play approach**. The company owner decided to implement ELAM into their assembly lines. That helped to start fast and also scale fast within this customer. The project began with a **pilot workstation** to validate functionality and demonstrate the benefits in a live production environment.



With ELAM we could reduce the claim rate drastically and also we are able to hire and onboard new people very fast. This creates for us a USP in our industry that is demanding products with highes quality and fast adaptation time for new technologies and new requirements.

Owner of the company

After the successful pilot phase, our customer:

- **Expanded the solution to the final packaging station.**
- **Added two more ELAM workstations** in the assembly line for the interface product.

The next step is to **scale ELAM to all assembly stations** at one of the company's main production sites, further standardizing processes and ensuring quality across the entire production floor.

RESULTS / BENEFITS

The implementation of ELAM delivered measurable improvements in both quality and productivity:

- **Onboarding time for new employees was reduced to just 2 days**, with new operators able to work productively from day one, even on complex assemblies.
- The **claim rate dropped by 80%**, thanks to improved process security, tool integration, and visual quality documentation.
- **Worker satisfaction increased significantly**, with operators appreciating the clarity, guidance, and reliability that ELAM provides during daily tasks.
- The high level of motivation among workers has also fostered a more engaged and quality-conscious assembly environment.