Smart Factory Assembly
Your solution for the Railway Industry

Optimize your assembly and MRO processs

Unlike any other industry, the rail sector is driven by stringent requirements, making it an excellent field for assembly and MRO innovations. In this context, Smart Factory Assembly offers an integration of process monitoring, digitized work instructions and detailed data traceability at all stages of production, all in perfect compliance with current industry regulations.

We help you to solve the following challenges in your assembly process...

Fully connectivity of assembly tool to ensure process traceability and data record.

Digitilize work instruction to be adapt on every product variant and workers level

Keep track of your process and production changes to satisfy segment specific regulation

Maximize flexibility and quickly adapt your production to different product variants.

Ensure full process reliability to achieve your quality objectives under all conditions.

Assembly data record to guarantee full process transparency and improvement.

«The global railway industry is characterized by market concentration, shorter production cycles, redesign capability for longer product utilization times and new drive concepts for climate protection. The digitization of all corporate processes is therefore gaining in importance. The modernization of assembly, for example, serves as a boost for greater productivity and quality. This counts for manufacturers, as well as for operators and MRO companies in particular.
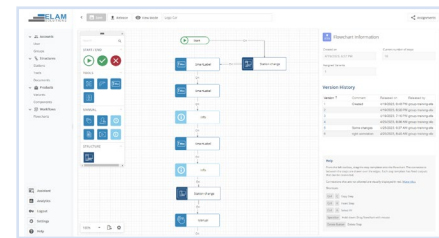Smart Factory Assembly offers integration of provision of all relevant documents at the workplace, process monitoring, digitized work instructions, integration of modern tooling and measuring equipment, and detailed traceability of data at all production stages, in compliance with current industry regulations, such as DIN 25201.»

Smart Factory Assembly Solution

Smart Work instructions

Design your interactive workflows including instructions, checklists etc.
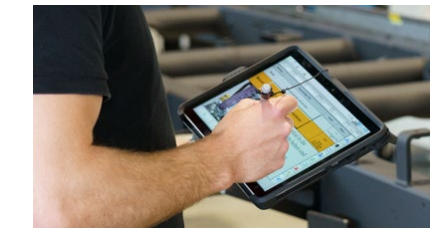

Connected equipment

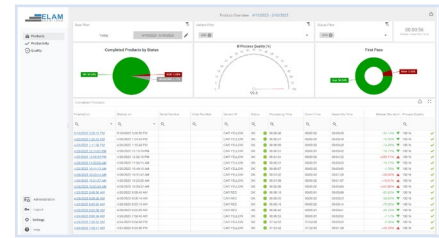Integrate any device and tool that improves your quality and productivity.

Assisting the operator

Easily modify the amount of content your employees need to view based on their experience levels and the product.

Customized dashboards

Track your data and improve your processes.

Combine work and material flow

Pick-To-Light helps to guide the process and automatically order new stock when needed.

"Intelligent solutions are needed that simplify the work and ultimately ensure optimal process control in manual assembly. It's about assured quality, the necessary flexibility, maximum transparency and the highest possible level of automation."

A more flexible concept that ensures a high quality standard

A railway company wants to start a pilot project for digitalization in the boogie revision. The main goal is to provide paperless assembly information for every employee. Digital instructions are to guide workers safely and repeatably through the complex work steps. Previous simple screwdriving tools are to be replaced by digital devices in order to reduce the number of tools and adjustment processes and to ensure that every screw connection is carried out and documented correctly. Later integration into the customer's MES system should be feasible.

Challenge

As an operator, various vehicles from different manufacturers have to be overhauled. On the other hand, this means low volume with high variance.

1. Simple changeover processes must be possible on a revision line
2. Variants must be correctly managed at all times via the digital platform
3. Assembly processes must remain partially flexible
4. New employees must be able to act productively quickly
5. Assembly data must be securely recorded and easy to evaluate

Outcome

According to preliminary estimates, 80% of rework costs are saved. Changeover times are reduced by 50%. And employee training times are reduced by 60%. The payback period is then approx. 1.3 years. Thanks to the scalable and easy-to-integrate ELAM Solution Platform, all process changes can be managed quickly and easily in the future, even without extensive IT support.

Solution

At the beginning, three digital torque wrenches between 10 and 600 Nm are wirelessly connected to two standardized Smart Factory Assembly stations. These three tools are pre-parameterized with all necessary tightening programs. This eliminates the need for manual setting and testing procedures. Program selection is handled by ELAM Solution, the digital worker instruction system.
In addition, workers can make manual entries from testing, filling and setting operations directly in the sequence. Paperwork is eliminated and errors are reduced. At the end of the revision work, all work steps are clearly documented with evaluation for the job and can be retrieved at any time.

Do you also want to take advantage of our Smart Factory Assembly expertise?

Scan the code and request a free 30-days trial account

Summary and Benefits

Diagram: Smart Factory Assembly

- **High quality** of your assembly processes
- **Maximum flexibility** in your production
- **Transparency** in your assembly processes
- Achieve **automation of workflows**
- **Simplify** the job of your employees

Quality

Maintain quality control and process reliability in all circumstances.

Process automation

Automated data collection and workflow automation to avoid human errors.

Simplify

Operator can follow the SOP while reducing the onboarding process.

Flexibility

Ensure the highest level of flexibility while set up and chang over your production layout.

Transparency & Traceability

The automated tracking of what happens helps to fulfill the medical standards without additional effort.