

# SQS3 Scalable Quality Solution 3

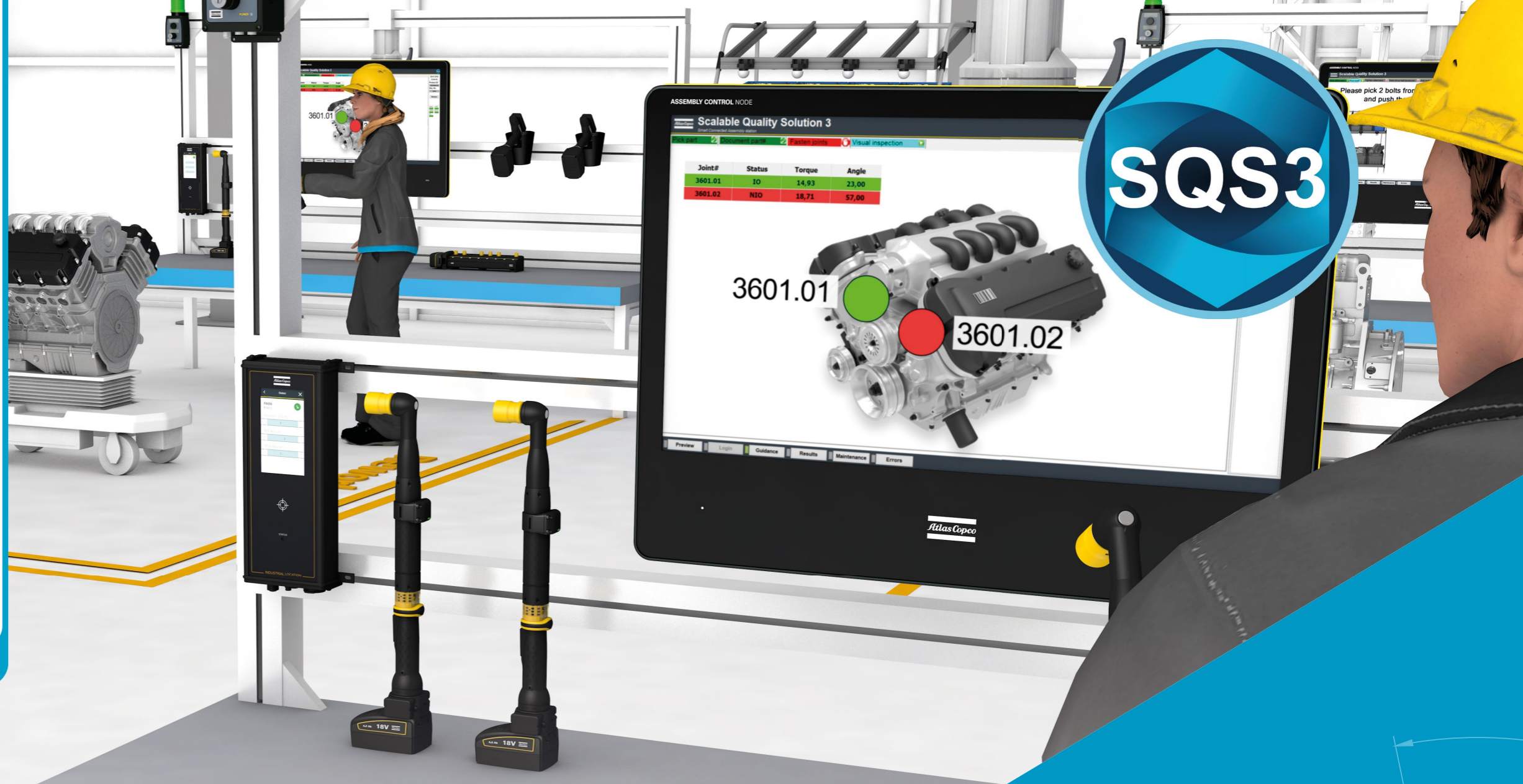
The scalable software solution that error-proofs your product assembly.

# Error proofing drives productivity

The advent of Industry 4.0 brings rapid changes and new challenges. To meet these challenges in industrial assembly Atlas Copco created the concept of "Smart Connected Assembly", combining software, hardware, smart tools and accessories to maintain process control in complex production systems.

One component is our error proofing software **Scalable Quality Solution 3 (SQS3)** which drives quality, process reliability, transparency as well as product safety.

Simply network your ERP or MES with this comprehensive process control solution to achieve zero defects and to reduce costs of rework, scrap or warranty claims. The whole assembly process gets traceable thanks to complex data collection, analysis and storage.







Discover more on error-proofing:  
[atlascopco.com/errorproofing](https://atlascopco.com/errorproofing)

# Scalable to your needs: from stand-alone station to complete shopfloor.

The **Scalable Quality Solution 3 (SQS3)** prevents errors in product assembly regardless of whether you start with a single station, a production cell or whether you need to manage a complex assembly line with a high variety of product variants.

Many stations can be connected with a remote centralized configuration. All SQS features are scalable and easily reusable to fit your custom production needs.

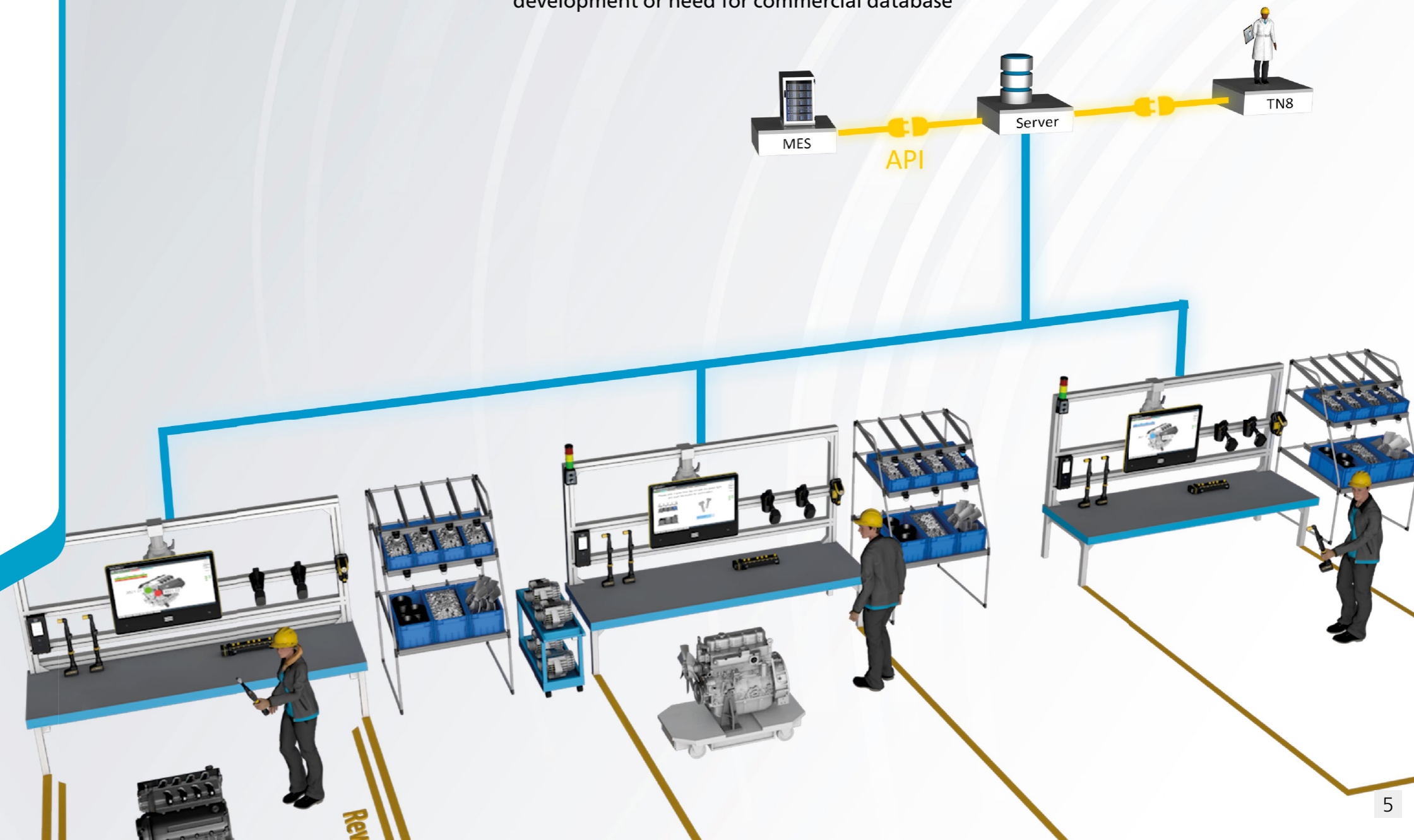
**SQS3** ensures product quality, process reliability and transparency as well as product safety at each assembly station. It guides your operators through the assembly process leaving no room for error or oversight, even in a specific rework station.

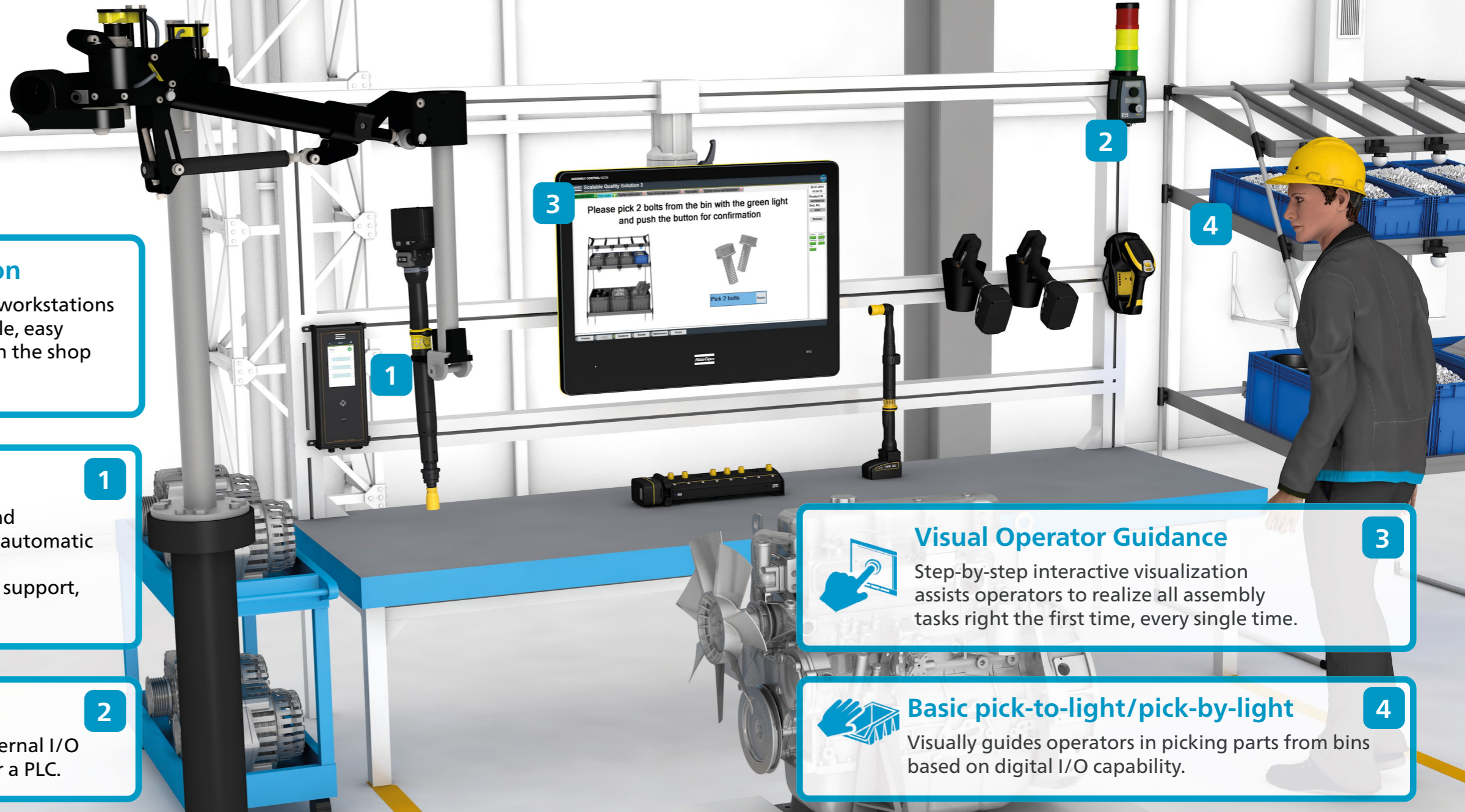
			
Reductions in Defects	New Product Introduction	Improved Productivity	Human Interaction

## Your benefits

By implementing SQS3 as process control system in your line, you gain

- **Step-by-step visual operator guidance as well as part and tool verification**
  - Zero defect strategy and less need for rework generate cost savings and improve productivity
  - Greatly reduces training time for new operators
- **Fully traceable rework ability and connection to MES system**
  - Any defect will be tracked and repaired at pre-defined rework stations
  - Synchronization of build and result data between MES and shop floor
- **Remote centralized configuration**
  - Update process changes and new product introductions to the line easily. Save time deploying and maintaining entire shop floor solution
- **Scalability at a low IT effort**
  - Connect several stations including pre-station check and rework without software development or need for commercial database





**Centralized configuration**  
Organizes SQS3 functions of all workstations across the shopfloor from a single, easy configuration interface either on the shop floor or remotely.

**Tool interlock**  
Enables and disables DC tools and wrenches via the controller. Use automatic program or job selection. Multispindle and PF6 FlexSystem support, as well as hand-held tools.

**Digital I/O capability**  
Enables easy connectivity of external I/O devices eliminating the need for a PLC.

**Visual Operator Guidance**  
Step-by-step interactive visualization assists operators to realize all assembly tasks right the first time, every single time.

**Basic pick-to-light/pick-by-light**  
Visually guides operators in picking parts from bins based on digital I/O capability.

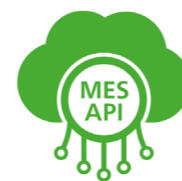
## For a fully controlled assembly line: the features of Scalable Quality Solution 3

With a centralized configuration you easily implement **Scalable Quality Solution 3** and choose the error-proofing functionalities according to your needs and processes. Pick-to-light, part-verification or operator guidance improve your whole assembly process and increase productivity as well as efficiency.

Do you use our **Smart Assembly Management System (Smart AMS)** for your tightening control? Thanks to the integrated standard API you can easily upgrade your process control adding SQS3 in specific critical stations with high defect rate due to unclear or complex processes and human factors.

Combining SQS3 error proofing techniques with the benefits of our Atlas Copco **tool location verification solutions (ILG, ILT or ILS)** you raise your assembly to a truly controlled level. You track your tools and monitor that the correct bolts are tightened to specification and in the proper sequence. Contact our error proofing experts for more information.

## Advanced features



**Integrated data exchange API**



**Data analyzing with ToolsNet 8**



**Tool location with ILG, ILT or ILS**



**Connectivity with Smart AMS**

# Support your rework or repair operators doing their job right the first-time

Today, high numbers of variants, parts and steps make error-free product assembly increasingly challenging. What happens if an assembly step fails and the product needs repair or rework?

Support your operators solving their repair tasks with zero defects by implementing our specific module **SQS3 Rework**. It enables easy and efficient process control, while storing all rework data for full traceability.

SQS3 Rework offers a clear target-actual analysis:

Where are the faults? What needs to be done?

Operators are guided doing all repair actions correctly using right tools and parameters with full **step-by-step graphical instructions** on the screen.

Thanks to **user identification** only trained and authorized operators will handle the job.

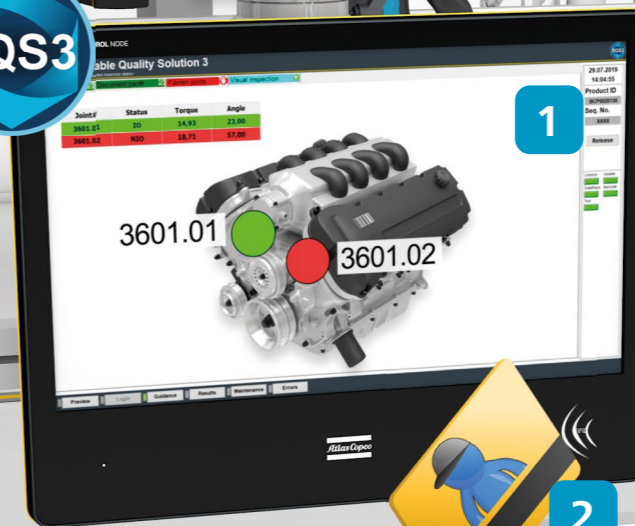


30 - 40% of recalls are coming from wrong repair!



## Consolidated data collection

Traceability of all assembly actions (torque, parts, digital I/O, manual confirmation) and missed tasks from all stations/products. Easy and convenient access to collected data via web-based user interface.



## Visual Operator Guidance

Step-by-step interactive visualization assists operators to realize all assembly tasks right the first time, every single time.



## User identification & access control

Prevents unauthorized system access enforcing user roles and privileges. Thus, only trained e.g. rework operators are allowed to complete the task.

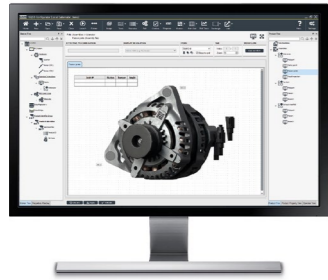


## Part verification and documentation

Identifies parts by means of serial numbers or product IDs to ensure the correct parts are being used to build a product.

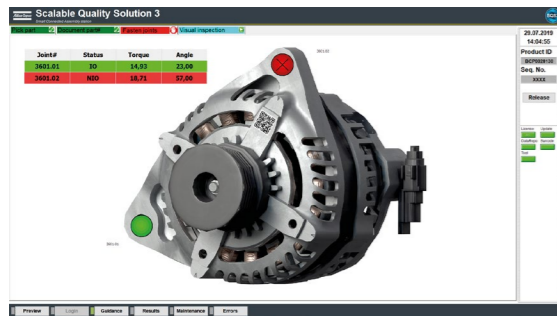
# SQS3 Product Components

## Configurator

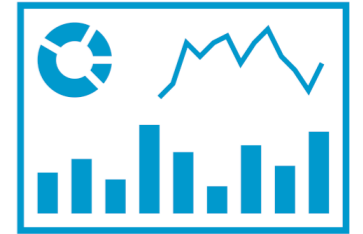
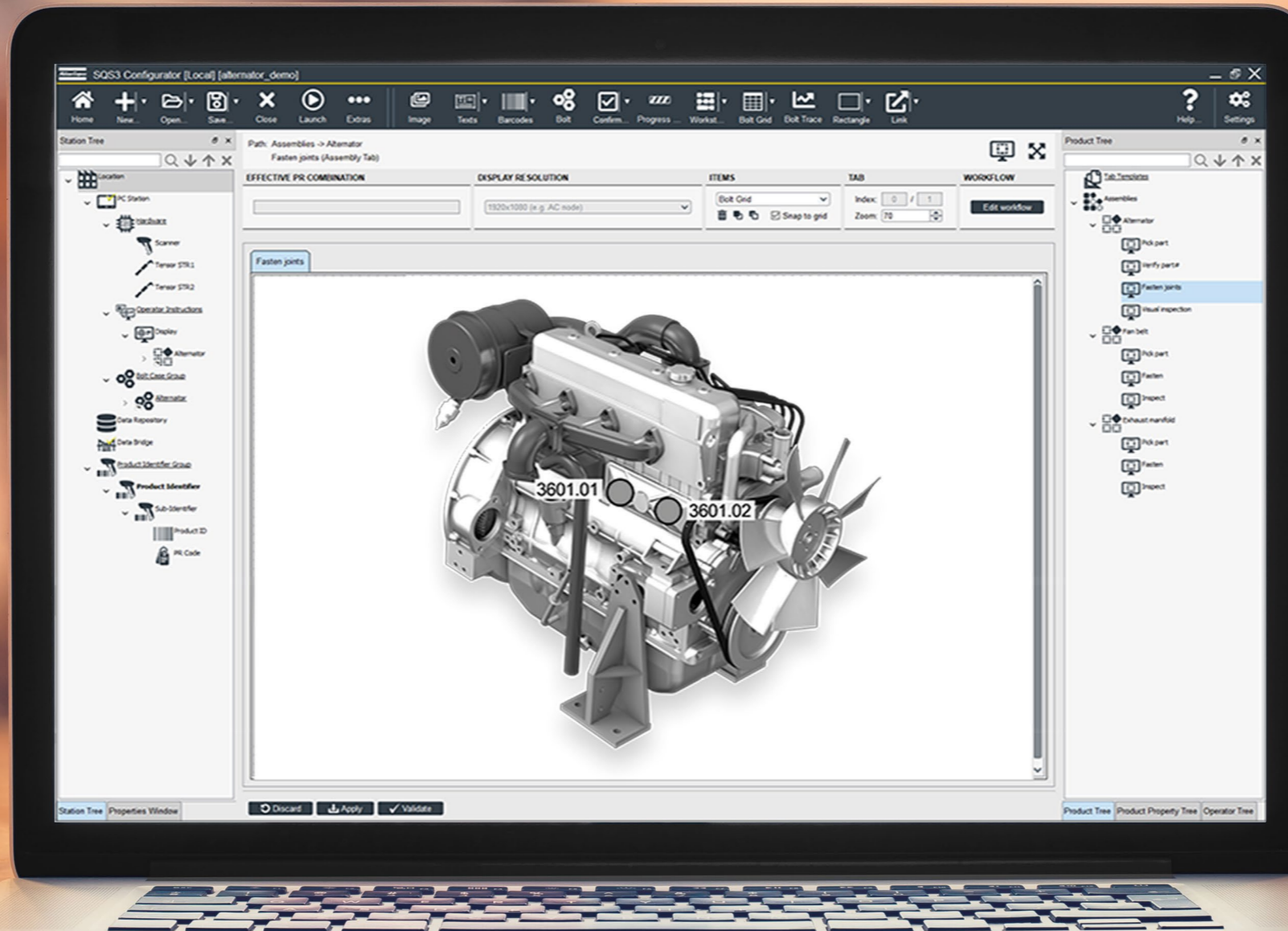
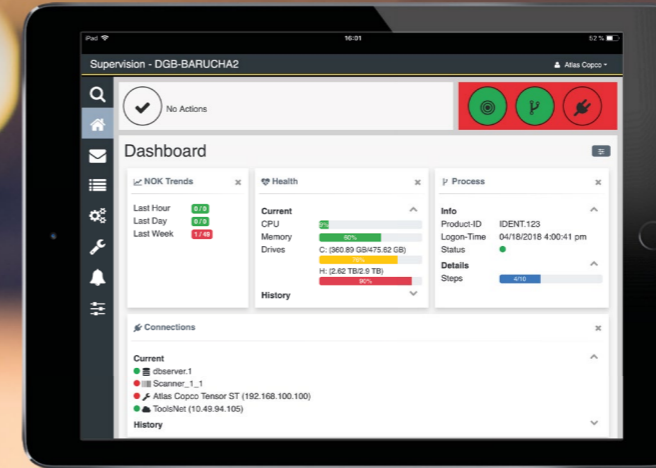
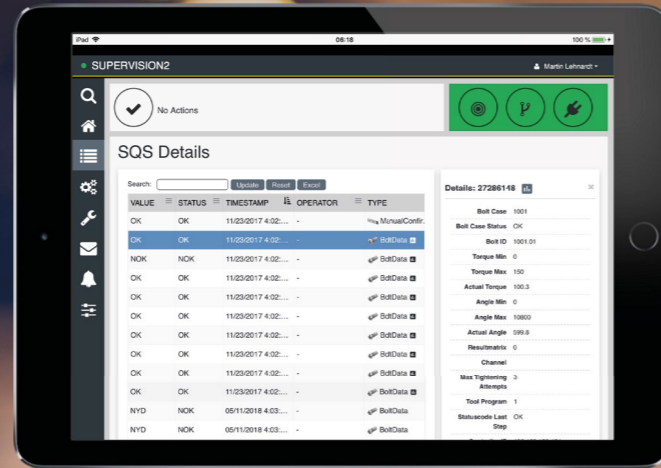


The SQS3 Configurator is the graphical user interface used for building and maintaining assembly processes in SQS3. All connected workstations and their devices can be configured through one single interface. The configuration can be done either at the workstation on the shop floor or remotely, for instance from an office desk. Updated configurations can be applied to the work-stations immediately or at a scheduled time.

## Operator Guidance



The SQS3 Operator Guidance drives the assembly workflow at the workstation. It interlocks with tools and other devices, guides the operator and processes result data for traceability and product repair purposes.



## Web UI for result data

The web user interface (web UI) of the Scalable Quality Solution 3 is the single point of access to all assembly data captured by SQS3 stations. It combines traceability for all products and across all workstations into one simple interface. The web UI is responsive; suitable for desktop PCs, laptops, tablets and smartphones.

## Dashboard

The web UI also offers you a dashboard for each SQS3 station, grouping and displaying its information in graphical tiles. The tiles show real-time information about the stations' health condition (processors, memory and drives), their connections and NOK trends, in case result data is being stored in the database of the Scalable Quality Solution 3.

## Event Log

The web UI's event log lists critical station events, such as the loss of a connection to a device or when tightening tools get locked, because the operator has used up all of his tightening attempts.

## Messaging

From the web UI, users can send messages to the operator guidance of any SQS3 station; even to multiple stations at once. Sent messages will be stored on the SQS3 station for reuse whenever needed.

## Applications for SQS3

### Assembly in complex processes

#### Challenge

- High assembly complexity with many steps at one station
- Frequent changes in product variants
- Tracking of result data on paper

#### Solution

- SQS3 stations for process control and operator guidance instead of printed hand-outs
- Consolidated collection of result data replaces manual recording
- Operator identification to track performance
- Pick-to-light for generic material selection

#### Benefit

- High product quality, rework rates reduced by 30%
- Saved time and reduced costs



## Product rework or repair

### Challenge

- No control of repair processes
- Quality issues due to wrongly repaired products

### Solution

- SQS3 for error-proofing installed in the line to capture assembly results and product status
- Repair of NOK tasks right away or later repair in dedicated rework station
- Repair process is controlled as rigorously as the regular assembly

### Benefit

- Avoidance of product recalls or field repair
- Reduction of line stops
- Guaranteed product quality
- Traceability in stations



# 30%

less rework approved by one of our CKD\*-plant customers

\* CKD = Completely Knocked Down

# Applications for SQS3

## Backup and training station

### Challenge

- No backup solution in case of tool controller failures
- Product quality endangered
- Possibility of line stop if multiple controllers fail

### Solution

- SQS3 mounted on a mobile cart
- All critical station processes configured into the SQS3
- Added traceability with operator login and barcode scanning
- Repair process is controlled with the same rigour as the regular assembly
- Implementation with EasyStart SQS Service Level Agreement

### Benefit

- Reduction of line stops
- Traceability of every step
- Save time through standardized and traceable employee training



## Prototype station

### Challenge

- Tools used in the prototype area are often not the same as in the main line
- Product rework rate is high

### Solution

- SQS3 at prototype station records process results, including tightening and manual operations
- Engineers test, improve and verify assembly process for prototypes before going into production
- Operators train new assembly routines

### Benefit

- Reduction of line stops during production
- Increased product quality
- Less rework due to fewer operator errors
- Saved costs in operator trainings



# 70%

reduction in tool related line stops approved by one of our customers



## EasyStart SQS saves time and money

EasyStart SQS is a fast and efficient start of operations through a standardized and proven process from installation to training. We offer:

- Assessment of process configuration requirements
- System and process configuration check and optimization
- Configuration backup and documentation
- Operator training including certificate
- Additional services can be added



Time and cost saving

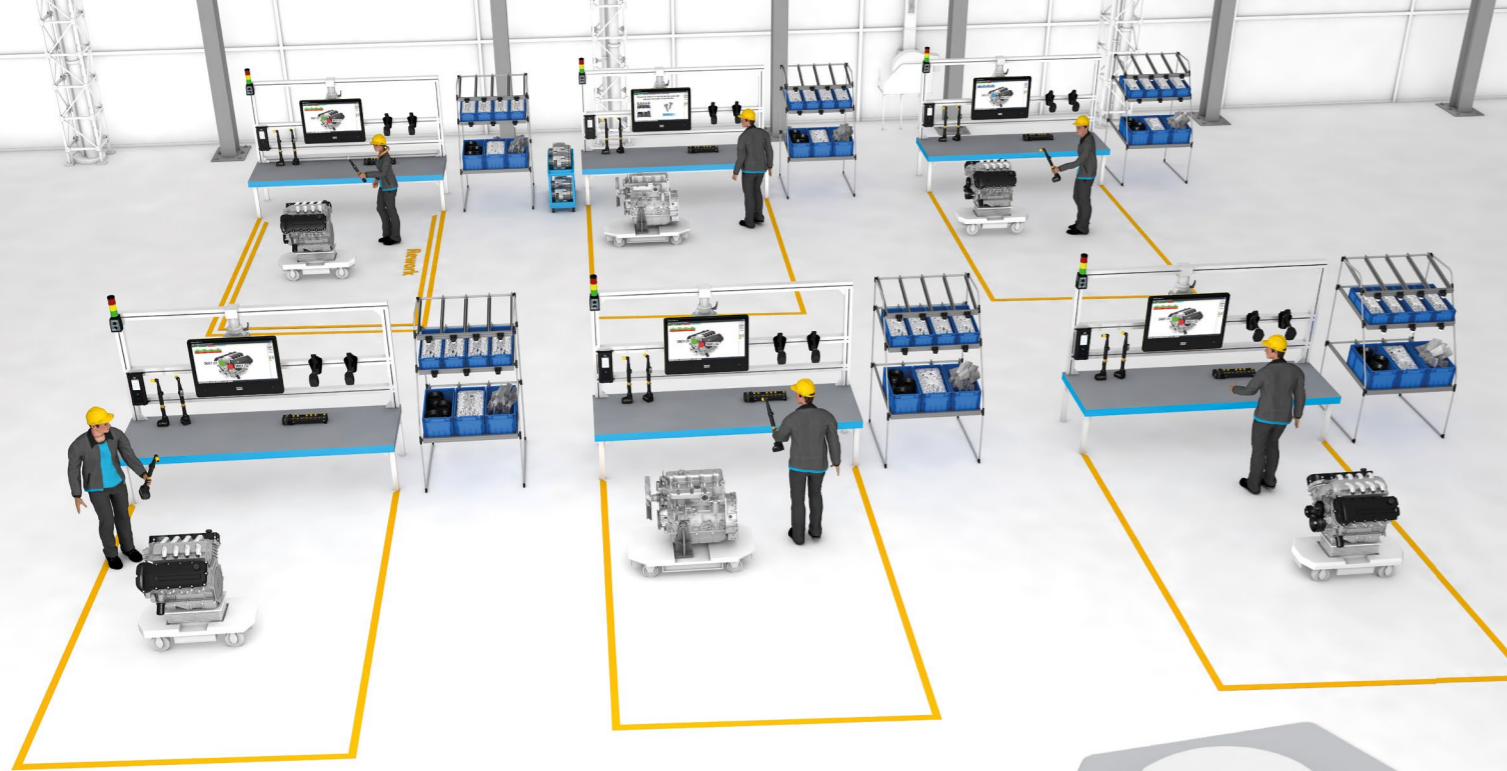
Right first time

Trouble-free and efficient start of operations

Minimizes risks in production quality

Globally standardized process for every step





## Stabilize your software – Secure your system availability

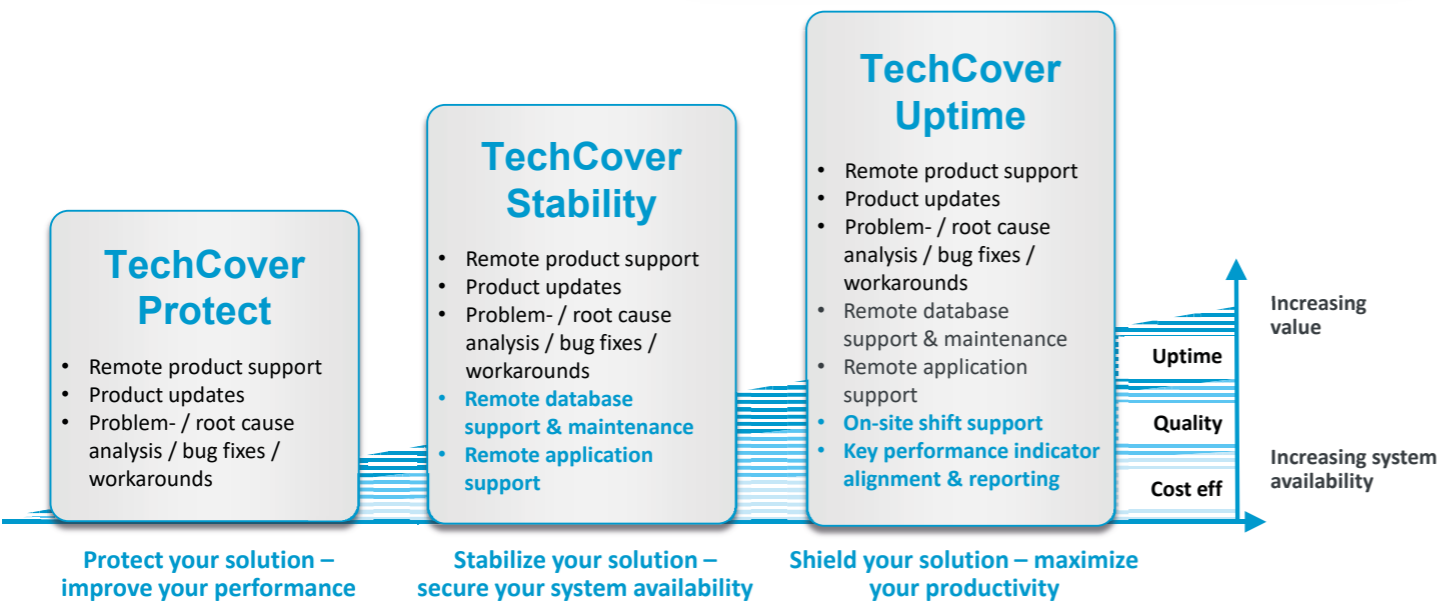
### TechCover - Service Level Agreement

With our TechCover software service offering you protect your investments in your error proofing production system and secure optimized system availability and productivity.

It provides proactive monitoring and remote solution expertise throughout the lifecycle of your production coupled with free access on software updates at fixed cost.

### Your benefits

- ✓ Greater system availability
- ✓ Guaranteed response times to issues
- ✓ Minimized risk of production stoppages
- ✓ Reduces production and data loss
- ✓ Free access to SQS3 software updates



### Comprehensive error-proofing solution

- ✓ Step-by-step interactive operator guidance
- ✓ Clear rework process
- ✓ Advanced error-proofing features
- ✓ Out-of-the-box solution with minimal IT effort
- ✓ Service-level agreement

## Ordering data

Description	Ordering No.
SQS3 Standard software package, single license	8434 2380 02
SQS3 Standard edition, single license (without software installation package)	8434 2380 03
SQS3 Standard edition, 2 licences (without software installation package, packed in a small box)	8434 2380 04
SQS3 Tool (electronic delivery)	8434 2380 09
SQS3 Tool, single license	8434 2380 10
SQS3 Tool, 2 licences	8434 2380 11
SQS3 PLC (electronic delivery)	8434 2380 12
SQS3 PLC, single license	8434 2380 13
SQS3 PLC, 2 licences	8434 2380 14
SQS3 Connect (electronic delivery)	8434 2380 15
SQS3 Connect, single license	8434 2380 16
SQS3 Connect, 2 licences	8434 2380 17
SQS3 Rework (electronic delivery)	8434 2380 18
SQS3 Rework, single license	8434 2380 19
SQS3 Upgrade (electronic delivery)	8434 2380 20
SQS3 Upgrade, single license	8434 2380 21
<b>Service Offering</b>	
EasyStart SQS	9900 4206 15
TechCover, software support contract (provided by Service team)	9900 4264 58



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