

Issue 01

# PROCEED

THE MAGAZINE FOR MORE PROGRESS, CONTROL AND SUCCESS IN PRODUCTION



## PERFECTION IS ALSO A PROCESS

*What steps are actually required to turn countless components into a watch that radiates true perfection?*

## MADE-TO-MEASURE QUALITY

*People are the measure of all things. This applies not only when designing car seats, but also to the configuration of processes, information and workplaces.*

## A LOT OF OPTIONS. ZERO ERROR TOLERANCE.

*When manufacturing medical ventilators for hospitals and clinics or for domestic use, Löwenstein Medical pursues a zero-tolerance strategy vis-à-vis all possible human errors.*

## THE JOURNEY IS THE REWARD

*A first-class product quality is easier to achieve if the proprietary processes function smoothly. But what can be done if there is already a sticking point in the process for controlling the processes?*

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# DEAR READERS,



why PROCEED? Because it's a word with lots of meanings. Advance. Progress. Make a start. Continue. Go ahead. Press on. It also reflects our commitment to continuous development and trailblazing, as well as our drive, success, creativeness and inventiveness.

These are the things that motivate us every day – both within and outside the work environment, and that's why we chose PROCEED as the perfect name for our new magazine.

There's plenty to read on the following pages! The stories cover topics such as progress and improvements, new solution models to problems some of you may be familiar with, a brave but very rewarding troubleshooting project and new ideas to meet the growing challenges of Industry 4.0 and smart manufacturing.

Perhaps some of the good ideas will inspire you to drive progress, controls and efficiency in your own production operations – and even if you don't, we hope you enjoy reading our magazine!

Best wishes from Neuwied,

*Mariana Kaesemann, COO*  
*Karl Nallin, CEO*

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THE GREATEST ENDEAVOURS OF MANKIND HAVE ALWAYS  
KNOWN ONLY ONE GOAL:

# LESS EFFORT FOR GREATER EASE

Improving people's everyday lives, generally making life easier and a little more pleasant – this has been the aspiration that has driven countless creative inventors for thousands of years, leading to unbelievable innovations and giving mankind its place in the world today.

Nevertheless, the innovation cycle was initially extremely sluggish. A trifling 2.5 million years passed between the first unequivocally proven use of boulder tools and the invention of the wheel. The wheel spoke, however, was not invented until around 3000 years after the wheel itself – namely in about 2000 B.C. – bringing with it a significant beneficial stability alongside the weight savings.

With the usability of metals (first copper and bronze, later iron), this development began to take off at a rapid pace. Advanced civilizations developed, and with them achievements such as complexly organized administrative structures, architecturally magnificent buildings, or script and time systems (calendars). The principle of the division of labour was another new development. By concentrating on one field of activity, for the first time talents were able to develop into true experts. And push forward the history of innovation even faster than ever before.

One has to say, however, that competition has always been an important driver for innovation – and not always in keeping with the moral standards that prevail today. In particular, the advances in knowledge and technology gained in weapons and military engineering were used ruthlessly against other social groups, and also against the weakest members of the user's own society. The beneficiary of progress was predominantly a very small upper class, which profited enormously from the toils of a hard-working majority. Those who seek parallels in today's society will have no problem finding them – proof that although the means have been greatly transformed, human nature has only changed very slightly.

Nevertheless, progress has hugely improved people's lives as a whole. Among the tremendous inventions of the past 200 years are the computer (in 1837!), the telephone (1876), the filament lamp (1880), the automobile (1886), the airplane (1903), and of course the internet, that still impacts lives today as a great disruptive technology, the beginnings of which, however, were thought out and developed as long ago as the 1960s.

But what marvellous innovations await us in the future? Karl Nallin from SCIIL AG has a clear candidate for mankind's next great success: „The Internet of Things is unstoppable. And at the end of the day, a production machine is also a thing.“  
SCIIL is a pioneer in this field, and is best equipped for the future. Are you as well?



IF I HAD ASKED PEOPLE  
WHAT THEY WANTED, THEIR  
REPLY WOULD HAVE BEEN:  
FASTER HORSES.

Henry Ford (1863–1947)

# EVEN REALITY CAN BE OPTIMISED EVEN MORE



A video is worth a thousand words:  
[www.sciil.com/de/3d-vi](http://www.sciil.com/de/3d-vi)

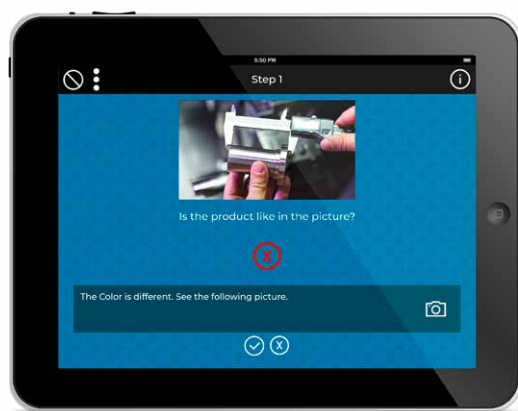
Anyone who wants to optimize even further what is already a first-class product, has to be prepared to take a completely new approach. That is why SCIIL AG attaches great importance to its research and development department, where new technologies are tested and further developed for their suitability for use in the smart factory. Currently, the Neuwied-based company is working intensively in the field of augmented and virtual reality. Specifically, at the

design phase is a 3D visual inspection tool, which, thanks to the AR/VR technology, will offer practicable assistance during visual inspections. The error input using a 2D or 3D viewer allows for fast acquisition even of complex components, while evaluations directly on the 3D model enable holistic error analyses. Not just a lovely dream, but soon a better reality!



*Do you have any questions about 3D visual inspections? Marcus Mattlener will be pleased to give you more details:*

[marcus.mattlener@sciil.com](mailto:marcus.mattlener@sciil.com)  
Phone: +49 (0) 2631 99988-0



SCIIL AG has already developed and implemented numerous poka-yoke mechanisms for its customers that have proven themselves in everyday production processes. The company is currently working on a mobile audit system for poka-yoke measures, which is scheduled to be launched soon.

## WHAT IS ACTUALLY POKA-YOKE?

*In developing new solutions, SCIIL also draws inspiration from unconventional lines of thought and principles. One example is the Japanese poka-yoke principle for immediate error detection and prevention.*

The Japanese expression ポカヨケ (poka yoke) literally means „inadvertent error prevention“. The term was coined in the 1960s by Toyota engineer Dr. Shigeo Shingō, and is based on the insight that every system, every machine and every person is generally prone to errors. Since the costs of remedying them rise disproportionately the later they are detected, the goal behind introducing poka-yoke mechanisms

into proprietary processes is to prevent errors from occurring in the first place, or at least to detect them as early as possible. Incidentally, this does not begin as late as the production stage, but right at the beginning while designing the product. Everyday examples of this are SIM cards or Schuko plugs, which cannot be inserted or plugged in the wrong way round on account of their shape.



*Kevin Naujokat will be happy to explain how you can integrate poka-yoke into your production processes::*

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## Q-TRACE 4.0

*What steps are actually required to turn countless components into a watch whose technology, material composition, design and workmanship radiate true perfection and fascinate people all over the world?*

# PERFECTION IS ALSO A PROCESS

*As one of the world's leading luxury watch brands, IWC manufactures wristwatches that unite artful engineering and precision with an exclusive design. The company currently employs around 750 people at its two production sites in Schaffhausen and Merishausertal, where Swiss luxury watches are assembled to the highest quality standards by trained experts. In total, 1274 employees work for the company worldwide.*

All the cogs at the IWC production facility have been seamlessly intermeshed since 1868. Every watch is individually assembled by one of the watchmakers. With a trained eye, dexterity and precision instruments, they put together several hundred individual parts to create a wristwatch. The fascination with the Schaffhausen brand is attributable, among other things, to the fact that every single process step for



producing the movement features and sophisticated functions, such as the minute repeater, the tourbillon and the perpetual calendar, is performed by hand with greater precision than any machine could ever achieve.

Perfection is the aspiration to which IWC strives – and not only the watchmakers work towards this goal with the utmost concentration and accuracy, but also the EOL inspectors, who find and eliminate even the smallest of flaws in a comprehensive quality assurance process. Despite all the care that is taken, occasionally one of the luxury watches has to be reworked to meet the customers' demands without any compromises whatsoever.

### *From paper-based processes to digitisation*

To make the process chain even more efficient, IWC sought a software that combines CAQ (Computer Aided Quality) and an MES (Manufacturing Execution System). The solution was to be used in all the manufacturing steps from the production and final assembly, through to the EOL inspection. During the design phase and a project workshop with SCIIL, all the tools and processes were therefore examined from the ground up. Only after this had happened could the actual solution take shape. Suggestions for optimisations from the employees were also recorded and taken into consideration. Developed in just 6 months, since its introduction the system has been running stably in the areas final assembly (marriage of the movement and the case), final inspection (function and aspect test), reworking (repairs), as well as for the process control and data analysis.



### *Advantages and benefits: alleviation and shorter processing times*

The new digital process with its intuitive operability has greatly shortened training times for the employees. The data quality has also been improved, both with regard to data errors for faster cleansing, as well as for reworking, conclusions and improvements. Errors are found more easily and fixed more quickly, and the processing times have been substantially improved. The bottom line is an enormous gain in efficiency for IWC – and another huge step towards absolute perfection.

## HOW TO HEAR THAT THE WATCH IS TICKING



An essential measuring procedure during the test process at IWC can also be crudely described as a „sound check“. Highly sensitive measuring equipment records the sound waves of the tick-tock of the watch. The correct accuracy rate of the seconds increment is exactly determined from the tone length and the interval, and then compared against the setpoint from the official chronometer standard on the software side. The measurement results flow directly into the Q-TRACE system. Even interference factors that have a barely perceptible impact, such as negative gravitational influences, are deducted. After all, perfection knows no tolerances!



# MARRIED OUT OF LOVE FOR PERFECTION

The first step in the end-of-line control for IWC watches is called „marrying“. Here, five watches are physically packed in a box, and from this point on they pass „inseparably“ through the entire process of the final inspection. During this step, the serial numbers of all the watches are automatically registered and linked to the individual box number. The master data (casing and factory serial numbers, inspection batch/order, employees in the final assembly and the inspectors) is also recorded and accompanies the process on the software side. Why five watches? This bundling has proved to be the most practicable group size for analysing and simulating the entire test process, and makes a significant contribution to reducing the processing speed.



Information about the boxes and watches, the process flow and the test results is displayed intuitively.

INNOVATION AND PERFECTION ARE NOT UNITED BY THOSE WHO DO NOT MAKE MISTAKES, BUT BY THOSE WHO FIND ALL THE ERRORS AND SUSTAINABLY ELIMINATE THEM.

Ulrich Albicker,  
Department Manager  
Quality Improvement

The flawless quality of IWC watches is safeguarded at 13 checkpoints in the end-of-line process. Ulrich Albicker from IWC explains the idea behind the extremely complex quality inspection chain.

Mr. Albicker, why did IWC come up with the idea of a digital CAQ/MES system?

At long last, we wanted ONE solution for ALL the production steps. The Excel lists, help sheets and island solutions that had been used previously should be replaced. This would enable the planning, recording and steering of the quality inspections, errors and reworking, and also safeguard traceability back to the supplier. Other issues concerned data collection, and the automatic extraction of reports and key figures from the system.

What was important to you in choosing the right partner?

We evaluated all the potential candidates on the basis of the consulting, development and service expenditures, licensing costs, recurring costs, implementation time, and the suitability of the vendor/contact partner and technology. SCIIL AG was our first choice, in particular on account of the functional and support diversity, and the short implementation time.

How do you rate the result? What successes was IWC able to achieve?

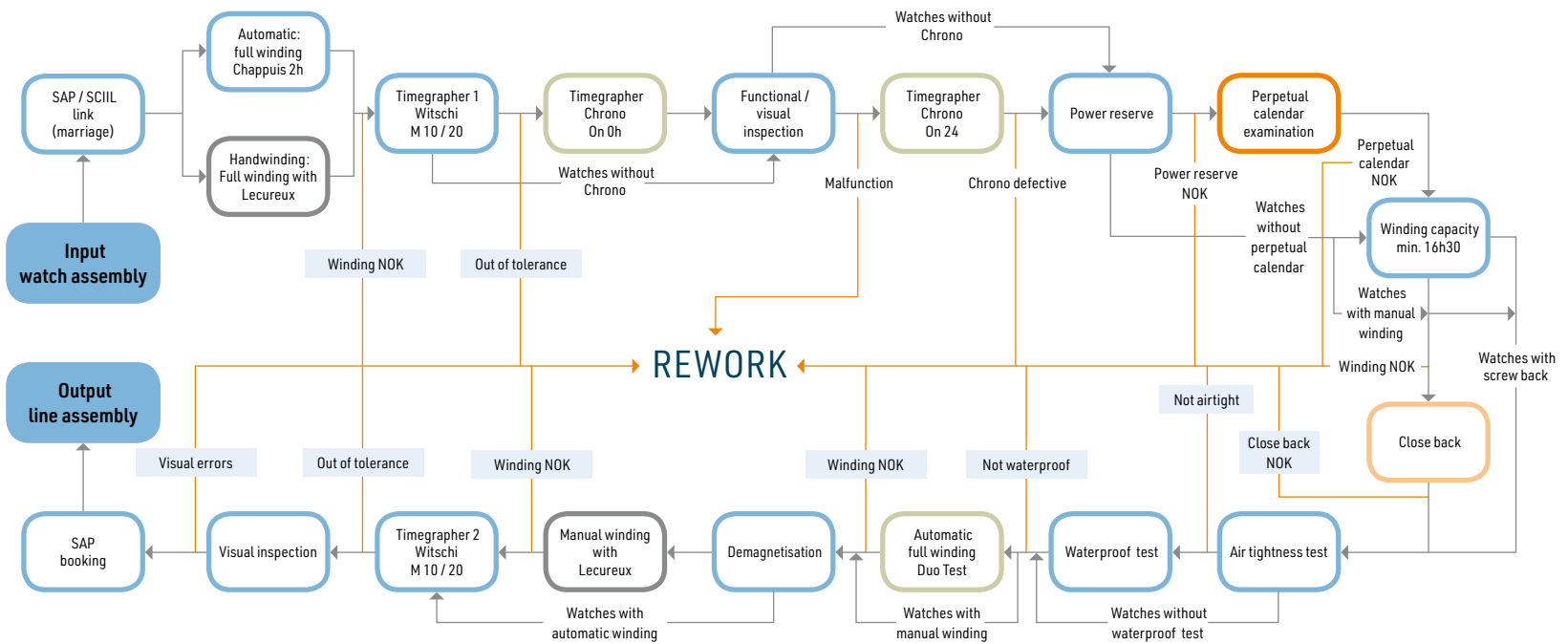
Expressed in hard numbers: The optimised processes in the final inspection bring an efficiency gain of about 15 percent – and we also expect improvements in the other areas. Additionally, the automatic generation of reports and dashboards from the system data saves around two working days per month. This creates an appetite for more. We are already planning to expand the project in various directions, and we want to make the benefits that we have achieved even more wide-ranging and usable throughout the company.



Do you have a question for Mr. Albicker or about Q-TRACE 4.0?

Please write to [proceed@sciil.com](mailto:proceed@sciil.com)

All paths lead to perfection!



Clocks can be infiltrated for reworking at any stage of the process. However, reintegration into the EOL process is subject to fixed quality checkpoints.



Q-FIT

# MADE-TO-MEASURE QUALITY

*People are the measure of all things. This applies not only when designing car seats, but also to the configuration of processes, information and workplaces. Following the introduction of the combined product audit system Q-FIT, RECARO Automotive Seating, the leading manufacturer of performance seats, has demonstrated convincing successes.*

RECARO Automotive Seating can look back on a long tradition of creativity, innovation and technological excellence: The company presented the first sports car seat as long ago as 1965. RECARO also brought out the first retrofittable sports seat, the world's lightest vehicle seat, the most innovative commercial vehicle seat, and new sports seats in a modern composite design. RECARO car seats have to meet the toughest requirements – as original equipment or coveted special fittings for privately used vehicles, for frequent drivers in commercial vehicles, and even for professional motor sport drivers.

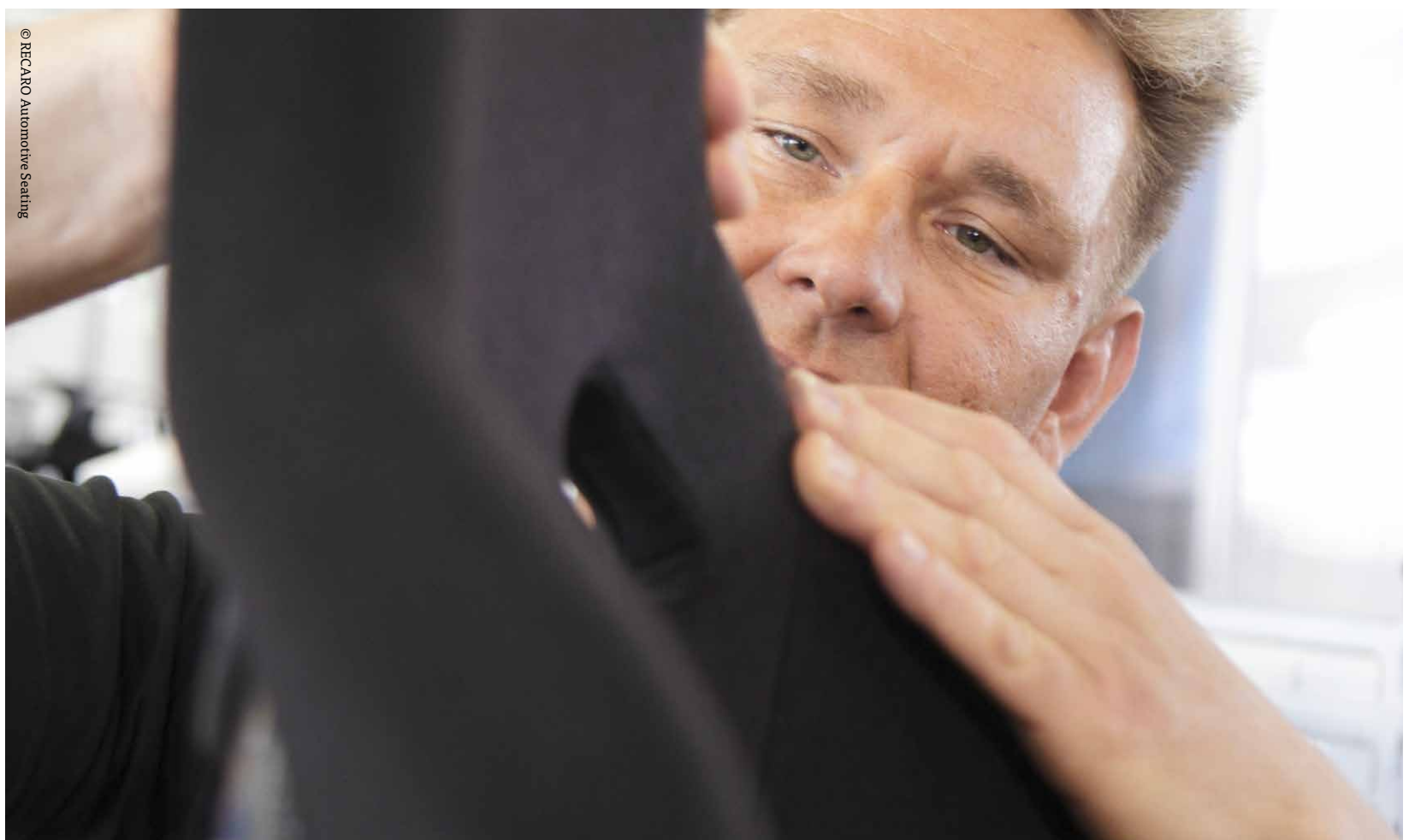
RECARO has become the benchmark and synonym for quality, safety and intrinsic value. But behind these buzzwords lies a whole philosophy that places people at the centre of all the company's endeavours. For car seats are a decisive sensual factor for the driving experience. An extensive point of contact between passengers and the vehicle, they also support the body over long distances, and give not only support and a feeling of security, but also – depending on the weather – warmth or cooling. With their look, feel, acoustics and smell, they convey brand values such as quality, safety, durability, and also

sportiness or comfort, depending on what the manufacturers want in their models. Car seats are a decisive factor in determining how comfortable the occupants feel even after sitting in them for hours on end. Furthermore, they have a safety-related protective function that can decide between life and death in an accident.

It is therefore no surprise that RECARO's DNA is oriented to integrating innovation, technical excellence and top-class ergonomic design not only into its products, but also into every facet of its corporate culture – which naturally also includes the production division, with its total of around 1,000 employees at six locations in Germany, Poland, Japan, Mexico and the United States.

With the combined Q-FIT system developed especially to accommodate the needs of RECARO production lines, SCIIL AG has set new standards for the production processes for car seats in keeping with the RECARO philosophy. The task in the initial analysis phase was to determine the potential for optimising the previous solutions. Concrete requirements had, of course, already been specified by the

management and senior production staff, while other key factors were also developed once the SCIIL experts, working together with the customer, were able to gain deeper insights into the existing processes. The KPI dashboards that are used throughout the company, for example, communicate immediate feedback on work status and results in real time to both the production management as well as the individual employees at the production line. Following the successful introduction of the combined portfolio of digital measures and tools for production planning, quality assurance, fault handling and seamless traceability, Q-FIT now ensures that RECARO will stay ahead of the competition in terms of quality, productivity and efficiency for years to come.







# Q-FIT: FOUR LETTERS FOR MAXIMUM SAFETY

## QUALITY

First-class quality can only be guaranteed with the right testing, measurement and control methods and technologies: From the digital and automatic test planning and test equipment management and integration, the creation of test lists and the actual conducting of the tests, through to administering and processing the test results.

## FAILURE

At Q-FIT, the modules for production monitoring, as well as the systems for the production control and real-time production monitoring, ensure the fastest possible reaction times when errors occur. The mobile KPI dashboards offer a particularly good overview with an immediate information flow for freely selectable user groups.

## ISSUE

The correct handling of problems in the production includes a wide variety of tools such as the automated creation of issues from your own production, the management of customer complaints, tools for cause analysis, statistics and data summaries, as well as a quality alarm for recurring problems.

## TRACING

The documentation of all the production orders, production routes, process parameters and add-on parts, as well as the traceability of serial numbers and batches with the entire production background (route, quality data, process parameters and installed components), pursues one major goal: seamless traceability in the production process.

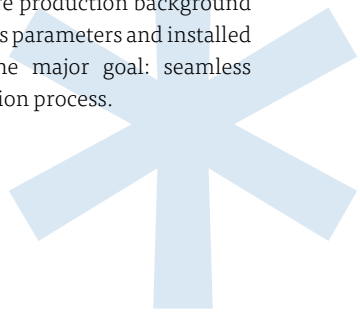
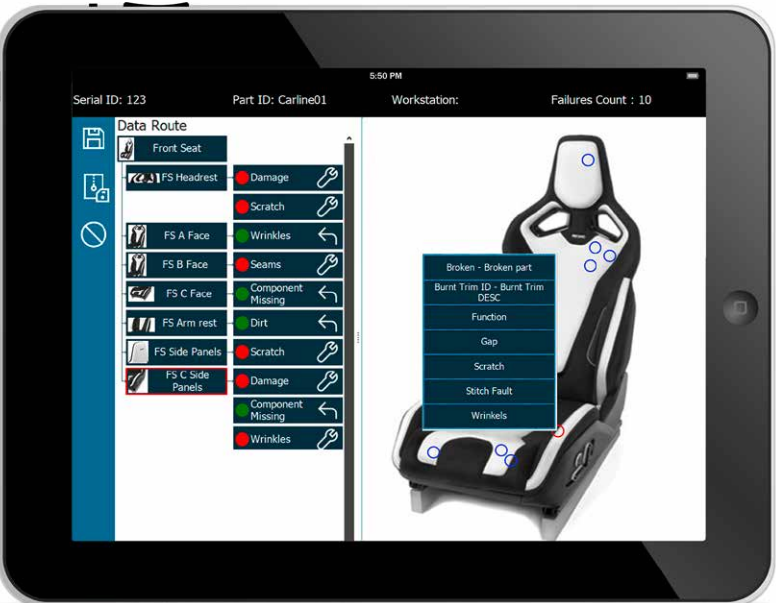


Recaro Automotive Seating is the premium Adient brand. At six plants in Germany, Poland, Japan, Mexico and the United States, we develop, manufacture and market complete seats that represent our core areas of expertise in design, ergonomics, craftsmanship, robustness, lightweight construction and workmanship under the introduced Recaro brand name. Recaro Automotive Seating combines two business segments: Recaro Performance Car Seating offers passenger car seats for the original equipment and after-market segments, while Recaro Commercial Vehicle Seating focuses on commercial vehicle seats likewise for the original equipment and aftermarket segments. Recaro Automotive Seating uses the Recaro brand under licence from Recaro Holding. You can find further information at [recaro-automotive.com](http://recaro-automotive.com).



Would you like more information? Mariana Kaesemann would be pleased to demonstrate the features of Q-FIT to you in detail.

[mariana.kaesemann@sciil.com](mailto:mariana.kaesemann@sciil.com)  
Phone: +49 (0) 2631 99988-0



# NON-STOP VARIETY

With its intelligent tools, RECARO even combines greater productivity with greater employee satisfaction. All the production line employees are trained to work at several stations on the line. The software developed by SCIIL then issues hourly instructions for them to change workplace according to previously defined parameters and depending on the current production planning. The result: More variety during the working day ensures greater dynamics, higher concentration levels, and a substantially diminished error rate.



# A LOT OF OPTIONS. ZERO ERROR TOLERANCE.

*When it comes to life or death, mistakes are simply not allowed to happen. When manufacturing medical ventilators for hospitals and clinics or for domestic use, Löwenstein Medical therefore pursues a zero-tolerance strategy vis-à-vis all possible human errors. With the help of SCIL AG, the intermediate and final inspections scheduled to be conducted during the production process were reorganised in just 6 months, and leave no room for misunderstandings despite the previously unwieldy number of device variants.*



The greatest possible flexibility with the equipment variants, and the numerous individualisation options that can be adapted to accommodate the intended application, is a real blessing for the customer – in this case the patient – and can make even a serious illness a little more bearable. However, the production line, in particular the quality inspection, is often faced with the difficult challenge of working flawlessly, yet efficiently with a large number of variants.

Until recently, Löwenstein Medical used inspection plans in the form of general paper forms that had to be filled in by hand by the inspecting employees, who had to decide which inspections were relevant for the respective device variant and options on the basis of instructions and their own experience. Despite regular and (time-) intensive training, this system provided for a certain probability of error due to the existing scope for interpretation.

The new system should guarantee clearly defined, traceable and documented controls during the production, as well as full final controls before delivery. It was also necessary to develop a system to steer the regular warranty inspections.

After analysing the previously used documents and a closer examination of the production and maintenance workflow, a precise specification was drawn up in collaboration with the customer. In particular,

the idea of using a variant coding for the inspection plans solved several problems in one fell swoop. In particular, it was now possible to configure device-specific checklists and specifications. Before it was implemented, the ergonomics of the application were tested by employees during a pilot project, and were spontaneously perceived as being an „alleviation for the day-to-day work“.

THE ATTAINED BENEFITS BECAME  
VISIBLE DIRECTLY AFTER THE NEW  
SOLUTION WAS PUT INTO USE.

Check lists are now created automatically according to the product variant and specification, and are completed in full by the testing staff, thus eliminating incomplete or incorrect tests. In contrast to the previously manually maintained product check lists (the servicing personnel had to be notified individually), the servicing schedules and associated check lists are now created automatically together with a reminder function. And whereas all the check lists used to be stacked at Löwenstein Medical in a paper filing system, and laboriously retrieved as required, traceability is now possible in just a few seconds by means of a simple database search.



*Löwenstein Medical is a manufacturer and distributor of top-quality medical products focusing on neonatology, anaesthesia and intensive care medicine, as well as sleep and respiratory medicine and oxygen therapy. A profound service commitment, practised customer proximity, and enormous innovative strength in the development of new technologies, are the decisive factors that have made Löwenstein Medical a market leader in many areas of medical technology. The employees of the Bad Ems-based company work every day with great motivation and expertise and fully dedicated to the health and quality of life of patients.*

MADE-TO-MEASURE  
SOFTWARE

*Despite Löwenstein Medical's extremely individual requirements, SCIIL's experts were able to draw on an entire series of existing software modules for designing the new process configuration, and in doing so assembled an enormously powerful overall package in a very short time and with persuasive cost calculations.*



Alongside the „Inspection Plan“ (IP) module for the inspection planning of measurements, attributive inspections and check lists, and the TRACE module for tracing serial numbers or batches with a full production background, the extremely extensive „Statistical Process Control (SPC) / „End of Line“ (EOL) module was also integrated. It enables test planning with variable, attributive and visual characteristics,

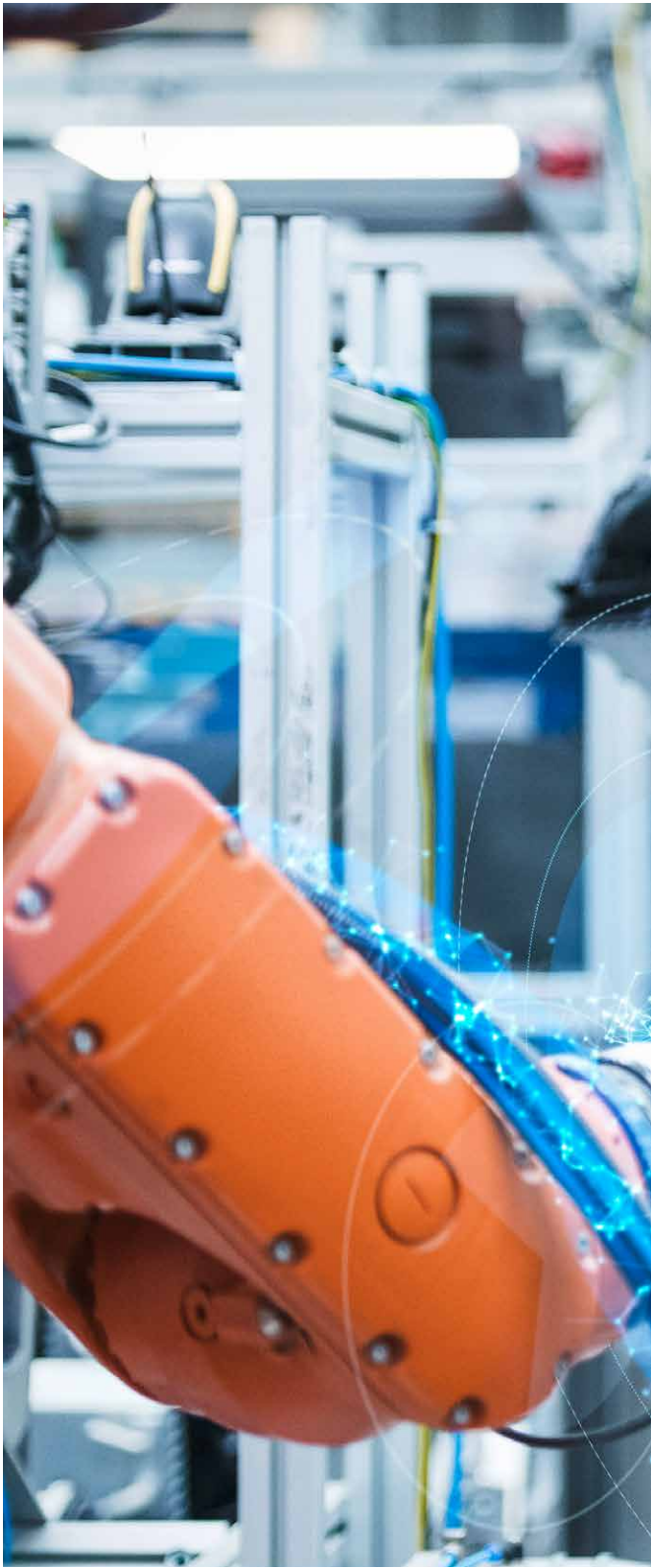
test results and instructions, as well as the incorporation of various measuring devices and instruments. PC terminals or user devices with touch screens can be used to enter the test data. Furthermore, the SPC also enables process events and notification services to be automatically controlled, and last but not least, offers comprehensive statistical evaluations and process analyses.

Alongside implementing the modules, various customer-specific adaptations obviously had to be made as well. Interfaces to the customer's proprietary test equipment were developed to enable automatic data transfers. A further interface to the planning system was also created for automatically generating the device serial numbers with corresponding equipment variants and additional options. The automated creation of device-specific test plans and the automatic controlling of regular test schedules during the warranty period (including the generation of measures for service personnel) were also rethought

and redesigned. And last but not least, SCIIL implemented an offline function that allows test results to be recorded during the servicing work even at sites with poor or non-existent data connections. This means that the relevant inspection data can now be loaded onto a handheld user device in advance by the service employee. Once a connection has been successfully established, an automatic synchronisation with the server takes place.

*Do you have any questions regarding our modules?*

*Send us an email to:  
proceed@sciil.com*



eLPA

# THE JOURNEY IS THE REWARD

*A first-class product quality is easier to achieve if the proprietary processes function smoothly. Layered process audits are a proven tool for verifying the consistent implementation of process standards. But what can be done if there is already a sticking point in the process for controlling the processes? We asked Daniel Zimmermann from MAHLE Behr GmbH & Co. KG, Head of Quality Management at the plant in Mühlacker.*



*Do you have a question for Mr. Zimmermann or about eLPA?*

*Please write to [proceed@sciiil.com](mailto:proceed@sciiil.com)*

**Mr. Zimmermann, please begin by giving us an insight into the production activities at your plant.**

Around 1,500 employees at our site in Mühlacker manufacture numerous products for the worldwide needs of various car and commercial vehicle manufacturers (OEM). Among other things, we produce heat exchangers and exhaust heat exchangers, cooling modules, as well as pipes, stamped parts, various plastic parts and thermostats.

**Even before the introduction of the electronic LPA system, as a company with multiple certifications you regularly conducted process controls – so why the need for a new solution?**

Layered process audits as a paper variant are simply an extremely time-consuming affair. Alongside the great manual planning effort with Excel spreadsheets, the manual maintenance of action lists, the printing of audit cards, and the manual evaluation in Excel, consumed valuable capacities which we urgently required for other tasks. Another

problem concerned the regular updating of the paper notices in the production halls. It was high time for a modern solution.

**Understandable. And what does the solution look like?**

The entire system is based on a standard questionnaire which can be adapted to specific circumstances at the factory. Questions concerning occupational safety, order and cleanliness, labelling, product conformity, process conformity and qualification, for example, are defined and prioritized with regard to their relevance. The electronic layered process audit system (eLPA) covers six direct production areas and four further indirect areas, among them the logistics and facility management. A key user is responsible for the audit planning in each area; for the implementation, we have defined three layers from the plant employee up to the plant management. The implementation now takes place completely digitally on mobile devices such as tablet PCs and smartphones, for which the system relies on

a high degree of transparency. The audit plans and implementation status are automatically updated and can be viewed by everyone on monitors. By the way, the system also handles calendar entries and email notifications.

**If you consider the new eLPA solution: What do you like, what bothers you about it?**

The only thing that bothers me is that we didn't switch to eLPA much sooner (laughs). Otherwise, the advantages are obvious: The manual planning effort has been drastically reduced, evaluations and changes are updated directly and immediately available at any time. Apart from that, it is much easier to use the tablets, and everyone even has fun doing so. That's a great side effect, which also brings with it the necessary acceptance of the LPA methodology, so to speak at the press of a button.





MAHLE is a leading international development partner and supplier to the automotive industry, as well as a pioneer and technology driver for the mobility of tomorrow.

MAHLE products are installed in at least every second vehicle worldwide. As a globally active corporate group, MAHLE is essentially structured into the following four divisions: Engine Systems and Components, Filtration and Engine Peripherals, Thermal Management, and Aftermarket. Around 78,000 employees at 170 production sites manufacture a product portfolio based on a broad systems expertise that covers all key issues along the drive train and in air-conditioning technology. Its trendsetting know-how for electrical and electronic components and systems makes MAHLE a provider of integrated system solutions for electromobility.

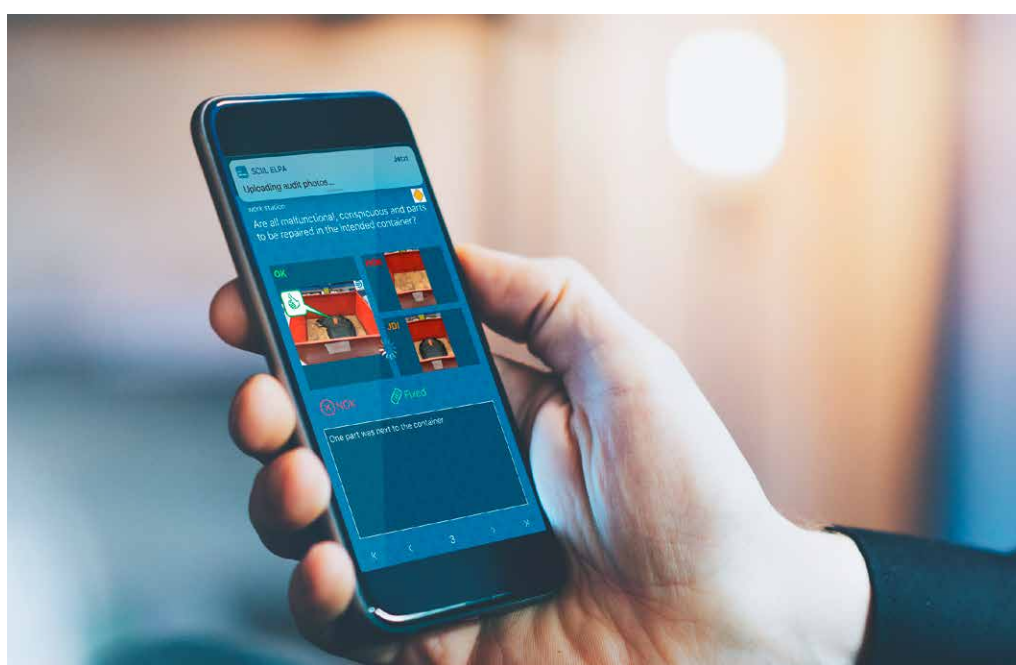


THINGS AREN'T GOOD BECAUSE THEY'VE ALWAYS BEEN DONE THIS WAY. USUALLY THE OPPOSITE IS THE CASE.

Daniel Zimmermann

## IT CAN EVEN BE FUN BREAKING NEW GROUND

Departing from familiar working practices is easier if the right incentives are offered! As part of the new eLPA system, MAHLE acquired an equipment park that is really fun to use: iPad minis, modern monitors, and prominent 43" flat screens not only intuitively provide the required work surfaces and information, but also offer the user a lot more comfort and working enjoyment.





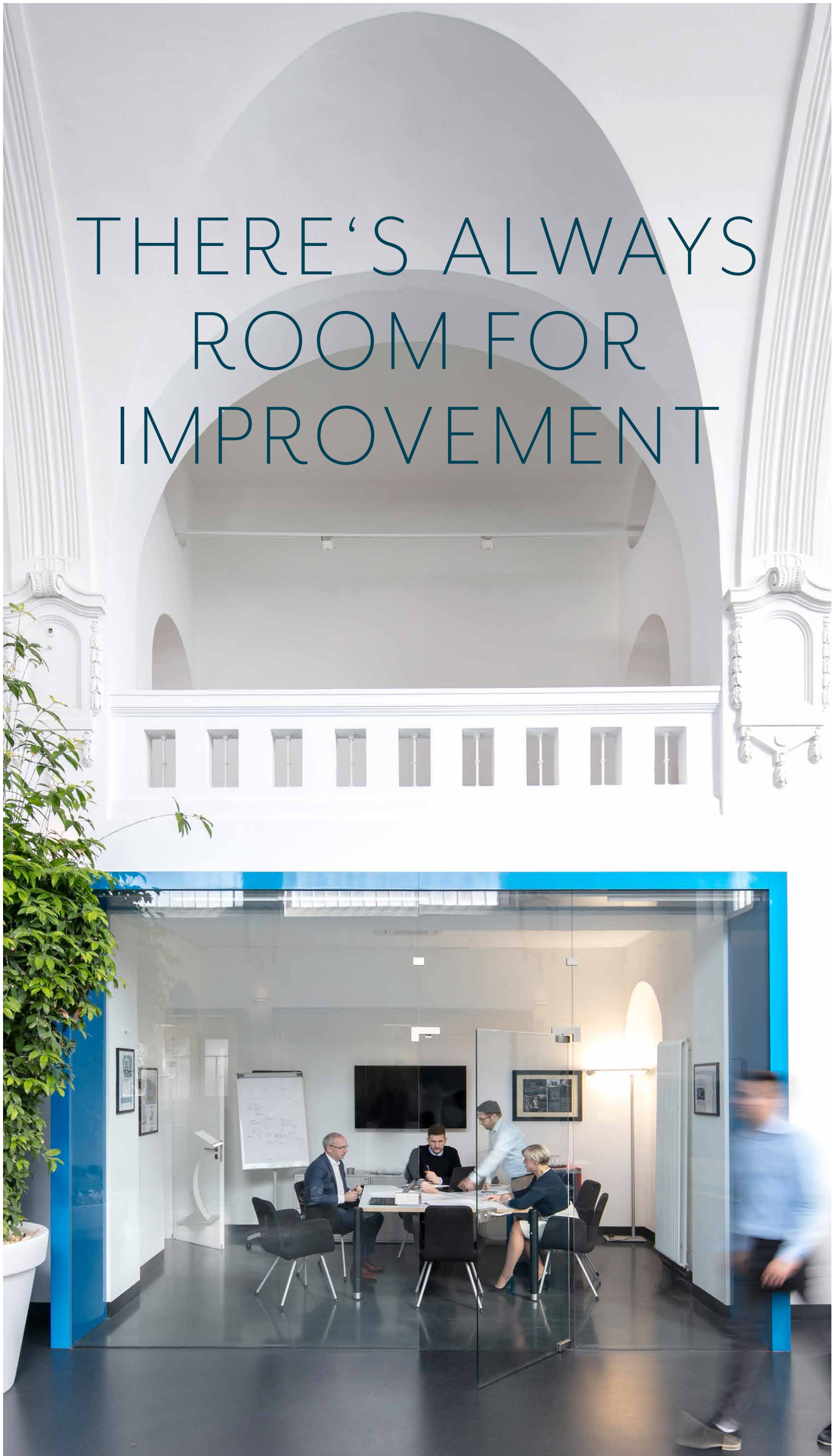
# THERE'S ALWAYS ROOM FOR IMPROVEMENT



The company was established in 1999 with a main focus on IT services and software development in the CAQ sector.

SCIIL AG has been present on the market as a stock corporation since 2004 and is managed by COO Mariana Kaesemann and CEO Karl Nallin.

The company is one of the pioneers in the development of corresponding Industry 4.0 applications, such as industrial apps, mobile audits, IoT solutions, etc., and accompanies companies from various industries, such as the automotive, electronics, plastics technology, medical technology, metal industries, on their way to establishing a smart factory. SCIIL has already successfully implemented over 400 projects and optimised more than 500 production lines. SCIIL solutions are used all over the world.





Over 70 experts work on innovative progress solutions for the smart factory at the German headquarters – in the historic indoor swimming pool in Neuwied – at the development centre in Lithuania, as well as at other locations in the USA and China.

*Mariana Kaesemann, Karl Nallin and their team do things that other people don't even consider on a daily basis. These SCIIL experts have the mission of making advanced and high-tech production lines around the world even more intelligent, efficient and controllable. The passionate 'improvers' cater to a client base of leading enterprises in all sectors – from automotive to precision mechanics, electronics and medical technology.*

Anyone taking a late night walk past Neuwied's old public baths building on Marktstrasse may notice the lights still on in the offices. More likely than not a team of engineers and developers are sitting in the conference room discussing a particularly tricky problem relating to covering vehicle seats, cleaning pistons or inspecting the quality of clinic breathing apparatus. They aren't there because the management has asked them to work overtime, or because they're late with a client presentation. They're there because it's so incredibly easy to forget the time when you're doing something you're passionate about – and when you want to do it better than everyone else.

They don't just optimise industrial manufacturing processes with state of the art software, but genuinely transform those processes into something new and better. SCIIL was committed to this long before smart manufacturing and Industry 4.0 became buzzwords. You only have to spend a few minutes listening to CCO Mariana Kaesemann and CEO Karl Nallin talk about a current or past project to get infected by their passion. Although non-production experts won't understand all the terms they fire out in rapid succession, like eLPA, eSCRAP, issue management, MES/APS and EOL test, even a non-expert realises immediately that these people are completely in their element and 100% committed to what they're doing. You also notice that the SCIIL specialists are so deeply integrated in the client's world that they have a better understanding of the optimised production process, even before the project is implemented, than the majority of the client's employees. Nallin draws the entire production planning process of an automotive part supplier onto the whiteboard at breath-taking speed while explaining the relevant parameters of the

manufacturing execution system that it is connected up to at the same time. Breaking down and simplifying this natural complexity is an important aspect of the job. Kaesemann explains,

“WHEN YOU'VE BEEN WORKING FOR WEEKS ON A SEEMINGLY UNRESOLVABLE PROBLEM AND, AT THE END OF THE PROCESS, THE CUSTOMER SAYS 'WOW, THAT'S REALLY SIMPLE!', IT'S THE BEST ACCOLADE WE COULD POSSIBLY GET FOR OUR WORK.”

We sow the seeds for our success, and the client's success, long before the first line of code is written. In a joint analysis phase – which can sometimes be a workshop attended by client employees from all the affected production teams – we gather information about the client's requirements, preferences, ideas and needs, and scrutinize the current process to identify both known and hidden weaknesses. Whether the project content relates to production control, production development, production quality, mobile audits or supplier quality, “Our clients can't generally give us a finished requirement specification because, although most are aware of their problems, they have no idea about possible approaches to solving them,” explained Nallin. This is because technology is advancing rapidly – not just on the software side but also on the connectivity



side, which determines the devices that can be used. Although the technology is available to connect production lines up to digital management and control systems, people are creatures of habit and tend to stick with tried and tested analogue tools and organically evolved stand-alone solutions.

But that doesn't mean SCIIL only offers solutions for antiquated production processes. The company's diverse client base includes automotive, aviation and aerospace manufacturers, companies in the electronics, precision mechanics and mechanical engineering sectors, as well as medical and polymer technology enterprises. All have one thing in common: they're modern enterprises that are among the best in their field and some are even global market leaders. Voltaire said: Better is the enemy of good! The client project managers are aware of that, and they're happy to let the SCIIL experts show them how they can make even more optimisations to their production lines to secure competitive advantages or improve sustainability. SCIIL develops customised and, thanks to its many years of experience, modular and easily adaptable software components for clients that are quick to implement and deliver impressive cost benefits.

While one client is happy that its audit planning time has been reduced from one week (manual) to 20 minutes (automated thanks to SCIIL), another team of engineers and developers may be working on an ingenious game changer for the next production line at the former public baths building in Neuwied.



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Greater progress. Greater control. Greater success! SCIIL AG has been standing for all this since 1999. With sophisticated software solutions, a deep understanding of your requirements, and our many years of experience, we optimise all the manufacturing processes, including the quality and shop floor management, in keeping with our motto: It can still get a little better. With the aid of flexible and extensively proven interfaces, the SCIIL software can be integrated into the existing system landscape or set up as an autonomous solution.

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