Issue 02 | 2025

be top

MAGAZINE OF THE FRIEDHELM LOH GROUP

AI MOMENTUM

READY FOR TOMORROW

With AI set to really take off, expectations are huge.
How, though, can industry seize this opportunity and leverage AI to turbocharge growth?

AI: ACT NOW TO WIN BIG!

1

megawatt

is the amount of cooling power delivered by the new Rittal liquid cooling system – a solution developed with the next generation of AI-optimised data centres in mind, and one that will increasingly set the standard.

1

terabyte

of data per second is processed by the FAIR particle accelerator at GSI Helmholtzzentrum für Schwerionenforschung (a worldwide leading accelerator facility for research purposes) in Darmstadt, thanks to a customised IT infrastructure with solutions from Rittal.

Prof. Friedhelm Loh
Owner and CEO of the Friedhelm Loh Group

DEAR READERS,

Artificial intelligence left the realms of science fiction long ago and has very much become science fact – right here, right now. And it has huge potential. However, real added value can't be created by technology alone. More than anything else, it is concrete applications that create value. For industry, this means there are opportunities out there – they just have to be grasped!

In particular, the specialist know-how that European industry has built up represents a real competitive edge. Wherever things get complicated, wherever data, processes and products demand a deep understanding – that is where our strengths lie. When we combine this power with digital tools, we create something new – new business models, new efficiency, and new relevance in the global marketplace.

What's needed are drivers for software-based technologies in industry and enablers for the rapid construction of IT infrastructures in the digital economy. Through Rittal and Eplan, and in collaboration with Microsoft and Siemens, we are driving forward AI developments with a clear focus in mind. We are also making it possible for essential IT infrastructure to keep pace with these developments – everything from chip cooling to hyperscale data centres. This isn't a promise of things to come – it's reality right now. And it is our contribution to the global development of AI.

This edition of be top includes interviews with and analyses by AI experts as part of the cover story, a report about the globally renowned GSI Helmholtzzentrum, contributions from technology group Meta, or an article about our customer Digital Realty, the world's top colocator. These insights show all the ways in which you, our customers, are currently benefiting from the latest technologies – and how the companies of the Friedhelm Loh Group are helping your business get to the very forefront of innovation around the world.

Happy reading! Kind regards,
Prof. Friedhelm Loh

AI is becoming an industrial enabler – wherever artificial intelligence powers real-world apps and creates tangible value in engineering and production.

COVER STORY:
AI – MOMENTUM FOR THE FUTURE?

AI is everywhere – and the opportunities for industry and the digital economy are huge, especially for companies in Germany and the rest of Europe. Our cover story focuses on the disruptive power of artificial intelligence, the possibilities it offers, and the movers and shakers who are successfully making AI part of the real world. Experts from various fields assess the developments surrounding AI. Rainer Brehm, CEO of Siemens Factory Automation, and Sebastian Seitz, CEO of Eplan and Cideon, describe how AI is revolutionising engineering. In addition to this, the latest study results and use cases highlight how AI is helping to turbocharge business.

WHAT DO YOU THINK OF BE TOP?

What are we doing well and what could we make even better? Your opinion is important to us and we'd love to hear your ideas. Maybe you'd even like to see a fascinating article from your company featured in be top. The editorial team is looking forward to your feedback!

Write to us at:
betop@friedhelm-loh-group.com

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Check out the digital version of be top:

https://betop.friedhelm-loh-group.com

NEWS
COMPANIES

With its 13 plants and more than 95 subsidiaries, the **Friedhelm Loh Group** is a global success story. Employing a total workforce of over 12,600, the FLG companies work with their customers and partners to shape the future together. Read our latest news here.

International sales

New Managing Director at Rittal

Mario De Marco was appointed Chief Sales Officer (CSO) at Rittal in July 2025. Through this move, Rittal, a leading global system supplier of hardware, software and automation, is gearing its organisation toward customer proximity in increasingly differentiated markets. De Marco is an experienced expert from within the company, who has been driving international customer relations for more than two decades, and is now bringing that experience to the board. The new CSO has carried forward the development of international markets in various executive positions, and has had a hand in founding several subsidiaries.

Award

Rittal among the top 100 innovators

For the fourth time now, Rittal has been awarded the “Top 100” title. The company impressed the panel in the “Innovative Processes & Organisation” category, thanks to its systematic development of digital structures. The award was presented to Ulrich Engenhardt, Chief Business Unit Officer at Rittal, by science journalist Ranga Yogeshwar during the German SME Summit. “Our solutions speed up work processes, cut resource consumption, and thus safeguard the competitiveness of our customers worldwide,” said Engenhardt.

Eplan Partner Network

SEW-EURODRIVE and Eplan sign partner contract

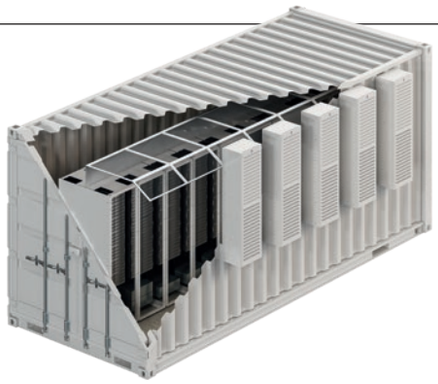
Leading drive technology specialist SEW-EURODRIVE is now part of the Eplan Partner Network. Dr Marco Litto (right), SVP Strategy & Corporate Program at Eplan, and Tobias Nittel, Head of Corporate Solution Center – Electronics at SEW-EURODRIVE, signed the contract at Hannover Messe. The SEW configurator is now integrated into the Eplan Data Portal. Users can therefore select the suitable specification for the drive solution they want directly in the portal. The SEW-EURODRIVE selector creates the necessary Eplan macros, which can be seamlessly transferred to the Eplan project.

Sebastian Seitz (4th from the right), CEO of Eplan and Cideon, together with colleagues from Eplan USA during a visit to Purdue University in October.

University collaboration

Training camp for the top US engineering league

Purdue Polytechnic at the top American university of Purdue in West Lafayette, Indiana, will now collaborate with German automation drivers from Rittal and Eplan. One aim of the partnership between the top players is to give students the best possible preparation for the data-driven future of automation through practical work with pioneering software. This is being made possible by a package of investments that includes software licences and a new Eplan lab directly on the campus. Purdue is becoming part of the Rittal and Eplan partner network. The future engineers are being trained up to make a real impact in industry as soon as they graduate. For their part, Eplan and Rittal are gaining genuine impetus for development thanks to the bright minds of Purdue Polytechnic.



Product of the year 2025

Data Centre Container wins award

The readers of specialist magazine “connect professional” have voted the Rittal Data Center Container **“Product of the Year”** in the “data centre infrastructure” category. This mobile solution enables the fast, secure and scalable expansion of IT capacities directly on company premises. In combination with externally installed Blue e+ cooling technology, the RDC saves space inside while also cutting energy consumption by as much as a third. A large majority of the approximately 7,600 voters chose this solution.

Rittal Application Center

Now also in Finland

122 customers from 57 companies and staff from Rittal Finland accepted the invitation to the opening of the Rittal Application Center in Vantaa. In the spotlight was the solution portfolio from Eplan, Rittal and Rittal Automation Systems. A supporting product exhibition showcased highlights such as RiLineX and Blue e+ Dynamic.

The official opening of the RAC in Finland: Kent Frennesson, Bonny Ribbers, Ari Tervo, Kaja Milberg, Fredrik Wahlstrand (left to right)

Industrial AI

MOMENTUM FOR THE FUTURE?

AI is everywhere. **The opportunities are huge**. Does that apply to industry, too? In Germany and Europe? Yes and yes! After all, this is the home of expertise on industrial data and processes – and the big AI and IT providers are desperate to get hold of it. Are Germany and Europe being left behind? Not at all! The disruptive power of Industrial AI is huge – both for **industry** itself and for the **digital economy**.

AI IN FOCUS

Many companies know that they can't avoid AI. For industry, the question is how **AI can be transformed into industrial value creation** – both quickly and for the long term. Recent studies by McKinsey & Company reveal what companies should be focusing on now.

TEXT: ULRICH SENDLER

Trend analyses conducted by Boston Consulting Group (BCG), Deloitte, Forrester, IDC, Gartner and McKinsey have all reached the same conclusion – the frenzied hype surrounding generative AI is already waning again. In Gartner's Hype Cycle for AI, GenAI has already passed the peak of inflated expectations. Fundamental decisions need to be made about the next steps for industrial use. This does not mean deciding for or against any particular system or technology, but instead deciding on the fundamental approach when starting out with AI.

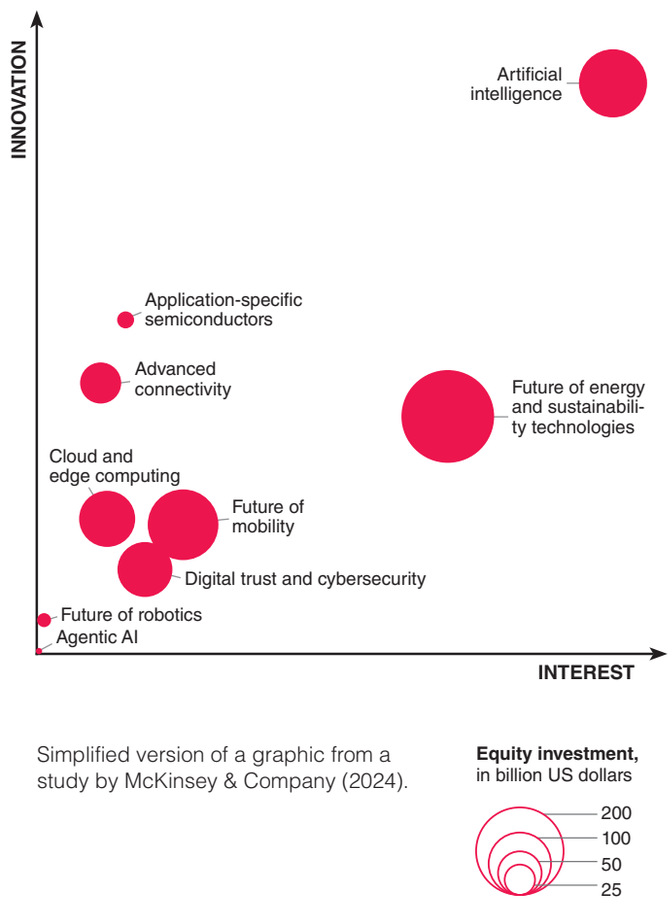
FOCUSING ON A SMALL NUMBER OF BIG INITIATIVES

Last year, a lot of money was once again invested in using generative AI as a first step in AI. However, according to Gartner, only 30 percent of CEOs were happy with the return on their AI investments. Meanwhile, according to the BCG AI Radar survey, most initiatives "aim too low" and primarily at short-term productivity gains. In contrast, successful companies – a quarter of the 1,800 executives surveyed according to BCG – focused on an average of 3.5 initiatives (versus 6.1 for the others), which are now being scaled up. According to BCG, leading companies focus 80 percent of their AI investments on

Scan here to see more study results:

INNOVATION, INTEREST, INVESTMENT – THE TECHNOLOGICAL TRENDS

The figures speak for themselves – artificial intelligence is playing the key role in the development of future technologies.



Simplified version of a graphic from a study by McKinsey & Company (2024).

reshaping critical functions and developing new products and services.

That makes sense. For example, one approach might involve using an AI initiative to cut electricity consumption dramatically across an entire production area, but not just for reasons of costs, carbon footprint and sustainability. When AI is rolled out, IT in particular races to unmanageable levels of electricity consumption. An initiative of this kind would therefore have an immediate and widespread effect, while also improving conditions for future AI initiatives.

FOCUSING ON AI AGENTS

In its Technology Trends Report 2025, McKinsey no longer distinguishes between applied AI and generative AI. It also accords top priority to agentic AI.

What is agentic AI? An AI agent is a system that uses GenAI, but does not only deliver results in text or image form. Instead, it searches through more or less any data source autonomously and without human intervention and can even launch other software systems in order to complete the tasks it has been set. This is heading in the direction of autonomous systems, at least to some extent.

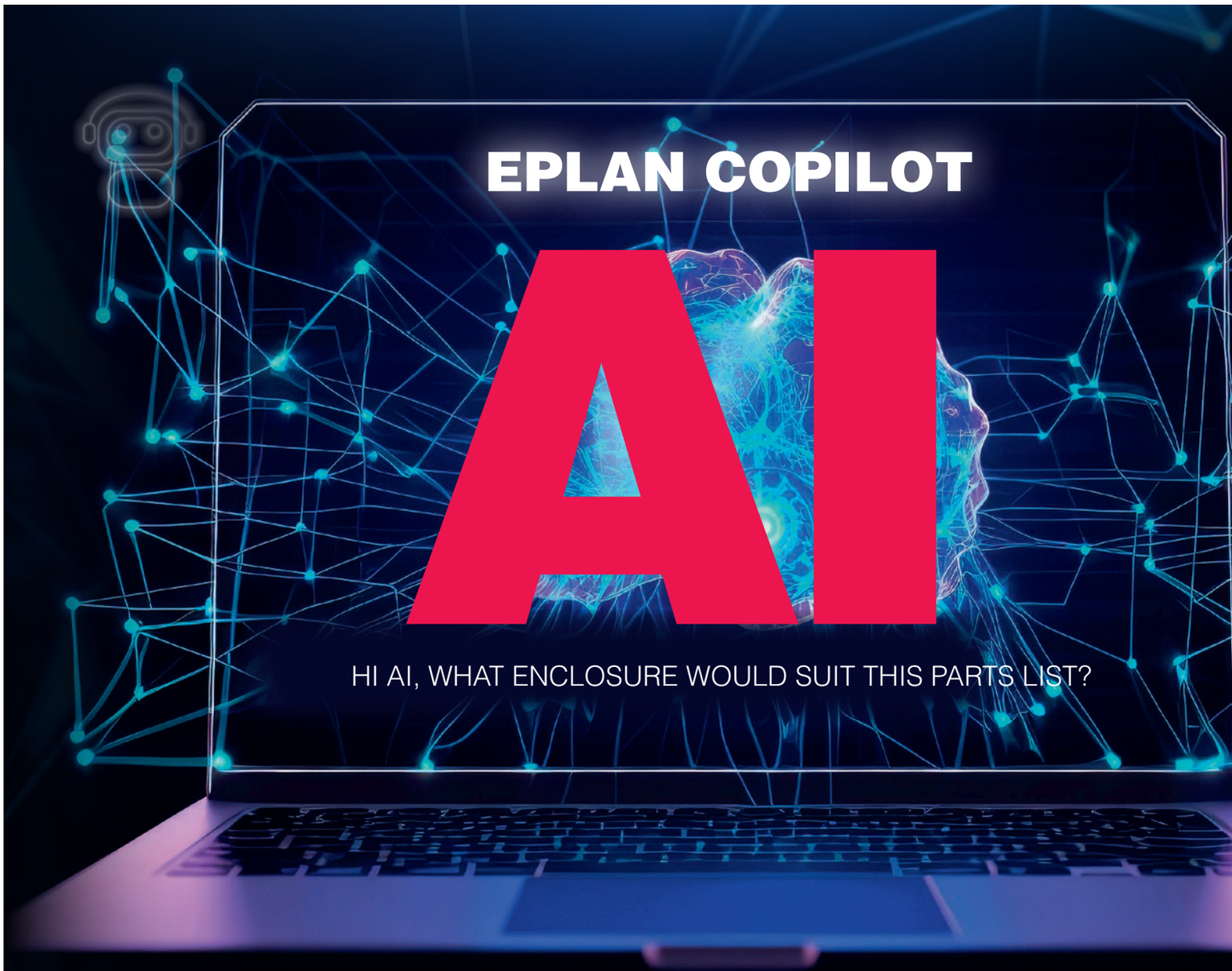
Something that is of particular interest to industry is the fact that even though AI agents use trained models from the USA and China, they very specifically apply these models to smaller regional or even in-house data sources, achieving excellent results very quickly and keeping AI hallucinations to a minimum. These data sources could be key industrial data, for example. The general term for this process is retrieval-augmented generation (RAG).

According to the Trends Report 2025, global equity investment in agentic AI totalled 1.1 billion US dollars in 2024 alone. What's more, online postings for jobs relating to agentic AI development increased by an incredible 985 percent from 2023 to 2024. All other studies also suggest that AI agents are being prioritised.

FOCUSING ON AI-READY DATA

In the Gartner Hype Cycle for AI, AI-ready data is already at the peak of the cycle. This means that, without the right data in standardised formats, there is no useful AI that will create added value. In other words, simply letting generative AI loose on data lakes composed of unstructured data means wasting a lot of time with little value creation to show for it.

Standardising existing data and identifying standardised data sources has been the aim of industrial digitalisation for quite some time now. Those who have put in the work will now also be the first to reap the biggest rewards from their launch into AI. And for those who have put it off, it is an excellent opportunity to shape their launch into AI with the correct data and state-of-the-art processes. □



ENGINEERING IN SECONDS, NOT WEEKS

There's the order, the parts list, the circuit diagram and the design of the enclosure or mounting plate. Of course, engineers don't need to design everything from scratch. In fact, wasn't there a very similar order some time ago? The know-how is in the company – but where? This is where the **Eplan Copilot** comes in and says: Tell me what you're looking for. If it exists, I'll find it – **quickly!**

TEXT: ULRICH SENDLER

A lot of time and money is wasted in day-to-day planning and designing as staff try to avoid having to "reinvent the wheel". The longer the list of processed orders, the more time-consuming the search for previous similar orders becomes. Before engineers can start their real work, they first need to search out pre-existing designs, which can take a lot of time and effort. Of course, there won't necessarily be an exact match, but there might well be a mounting plate that's very close to what the current customer is looking for. The same applies to enclosures.

This is exactly where the Eplan Copilot, developed on the basis of Microsoft OpenAI Services, comes in. There's no need for new AI models, weeks of training or any setting of parameters. All you need is a direct link connecting tried-and-tested models and algorithms with eligible data. It's as though the AI experts at Eplan have tied together only the loose ends of all the threads. The result is both astonishing and impressive.

COPILOT WITH EXPERT KNOWLEDGE

Users can prompt the Copilot by explaining in their own words what they are looking for. They also enter the parts list, which specifies all the necessary components. Instead of searching in random data lakes or sifting through all sorts of globally available data on the Internet, the Copilot focuses specifically on the key sources of data for Eplan users. These include the Eplan Data Portal, for example, which now contains more than two million components and two million variants from around 500 manufacturers. Within just a few seconds, several enclosures that are suitable for the components in question appear on the screen. Enclosures that are neither too big nor too small.

But why use the Eplan Copilot rather than one of the AI agents already available, such as ChatGPT? These other AI agents might provide more answers, and may even be faster, but the answers would almost certainly not be of much use. That's because generally available AI tools have as much of an idea about electrical engineering as they do about arable or livestock farming. They may well find something that doesn't actually exist. With the Eplan Copilot, this simply couldn't happen – it would just say it couldn't find anything.

The basic models are now available for virtually every purpose and are so good that industry does not need to develop anything new for its AI in this context. Moreover, the time needed for complex training can be saved. ▸

MOUNTING PLATE LAYOUT IN 3D

Creating the mounting plate on which all the components needed for the order in question are to be mounted and wired is an even more complex process than searching for a suitable enclosure. Eplan has bundled its experts' knowledge of best practices for this design process into its Copilot. Now, the design engineer can instruct the AI agent – as these kinds of tools are often called – to suggest a mounting plate for the selected enclosure and the parts list entered. A split second later, it comes back with a solution – and it's even in the form of a 3D model.

Eplan has gone further still with its AI use case to help users even more. Unlike other AI systems, the Eplan Copilot offers extremely useful transparency. The model is displayed with a concise statistic. This tells the user, for example, that from a parts list of 103 components, the Copilot was able to find and position them all. Alternatively, it might tell the user that it was only able to find and position 101 of them and specify which parts from which manufacturer it was unable to find. The user then sees immediately how much work they still need to do on the design and in which areas.

There's another big plus point, too. The displayed model is not merely a visualisation of the mounting plate. It can be loaded directly into an Eplan project as a 3D design, so the user can build on it, add to it or alter it if necessary. This Copilot knows where it needs to look and finds what it is looking for. What's more, it acts as a highly professional assistant for Eplan users in their everyday project work.

AI TAKES OVER ROUTINE TASKS

All these benefits were revealed at Hannover Messe – to great acclaim from visitors. But what exactly does the revolution in engineering announced by Sebastian Seitz, CEO of Eplan and Cideon, consist of? Is it just about saving time and reducing the workload? The revolution has only just begun and, although we've only seen the first fruits of it, the signs are already good. It's still hard to describe its true scale, because it will be a few years yet before this becomes clear in practice.

As Dr Thiemo Gruber, Senior Vice President Solutions and Development at Eplan, explains: "Our vision is for Eplan and the associated AI agents to become a single, large tool kit. In engineering, the AI agents will relieve users of one routine task after another. Copy & paste will become superfluous, because the computer and our algorithms can do that better and faster. The revolution will be that developers will focus almost exclusively on creative work. That will mean more new products and more innovation in a much shorter time, with fewer tedious additional tasks."

In electrical engineering, AI is therefore not a substitute for working with Eplan software and other systems. Instead, it's about gradually changing the software and supplementing it with tools such as the Copilot, and about how we work with both. Anybody who believes that engineers, CAD experts and their knowledge will no longer be needed any time soon has failed to understand the difference between mainstream AI and Industrial AI.

CO-CREATION BETWEEN COPILOTS

Needless to say, the Copilot is not restricted to Eplan data and projects. A second use case presented at Hannover Messe demonstrated the extent to which the Copilot can also help with collaboration between partners and their systems. The case in question involves collabora-

Delighted with the success of their joint AI use case: Sebastian Seitz, Prof. Niko Mohr, Dr Jana Kirchheim (Microsoft), Dr Rupert Stützle (Microsoft) and Prof. Friedhelm Loh at Hannover Messe 2025.

tion between the Siemens Industrial Copilot and the Eplan Copilot. For Siemens, this is very much the vision of working with software – not exchanging and converting data, but instead communication between different AI agents via APIs. This example was equally impressive.

In a project in the Siemens TIA Portal, a user learns from the product lifecycle AI agent that electrical components displayed with the relevant article numbers and manufacturers have reached the end of their lifecycle. They come from an Eplan project. The Siemens Industrial Copilot finds replacement components. A hardware configuration agent replaces them in the TIA Portal. An orchestrator agent initiates the Eplan Copilot, which makes the changes in the circuit diagram and mounting plate layout.

“In engineering, the AI agents will relieve users of one routine task after another.”

DR THIEMO GRUBER, SENIOR VICE PRESIDENT SOLUTIONS AND DEVELOPMENT, EPLAN

It’s a small example that illustrates a big vision! AI can also support engineering processes very effectively, all the way through to largely automating even critical work steps – in this case, checking the validity of product components and making replacements in the documentation if necessary. What’s more, AI agents can evidently communicate and work together with project partners’ AI agents with relative ease. The examples given are only a tiny sample of the large range of AI projects being worked on by the Eplan team. It will be fascinating to see what new demos await at upcoming trade fairs. □

HOW AI IS REVOLUTIONISING ENGINEERING

AI and end-to-end digital processes are fundamentally changing engineering – faster than anyone imagined. Siemens and Eplan are driving this development together. **Sebastian Seitz, CEO of Eplan and Cideon, and Rainer Brehm, CEO of Siemens Factory Automation**, reveal how AI can generate new momentum.

INTERVIEW: CHRISTIAN VILSBECK AND BIRGIT HAGELSCHUER

“In the coming years, AI agents will make completely new ways of working possible.”

RAINER BREHM, CEO OF SIEMENS FACTORY AUTOMATION

What changes do you expect to see in engineering due to AI?
Sebastian Seitz: Generative AI offers huge potential for automating development tasks and making them more efficient. Today, we’re already seeing that recurring processes can be optimised with AI. Possibilities range from the automated generation of mounting plate layouts to intelligent fault analysis.

Rainer Brehm: Today, it’s all about how engineering tools can be seamlessly integrated into our customers’ workflows. The big challenge lies not only in automating sub-processes, but also in integrating PLM systems more deeply into engineering systems to achieve digitalisation with end-to-end workflows.

Can we picture AI as “AI agents” that are constantly conducting analysis and communicating with each other?
Sebastian Seitz: Yes, that’s the right idea. AI agents are intelligent software programs that make decisions independently in order to automate and optimise complex engineering processes. They analyse data, learn from experience and perform certain tasks autonomously.

Rainer Brehm: We regard AI agents as intelligent, autonomous assistants to which the Siemens Industrial Copilot has access. They don’t work in isolation – instead, they work in close cooperation with other agents, digital systems and the user. This means we can considerably speed up the development process for machines and systems and minimise sources of error.

Can you describe some concrete use cases in engineering?
Sebastian Seitz: One highly practical use case is the automatic generation of mounting plate layouts. The agent analyses pre-existing design engineering data, suggests optimised enclosure layouts and generates layout plans automatically. What’s more, there are already AI agents that provide fault-analysis support for existing switchgear.

Rainer Brehm: We also offer AI agents via the Industrial Copilot – the Engineering Copilot TIA – for automation programming. These agents can generate and optimise blocks of code for programmable logic controllers. Based on the requirements of a particular project, they analyse the best control concepts and suggest automation strategies. Another important area is predictive maintenance.

How do you envisage the future of AI-based engineering?
Rainer Brehm: In the future, industrial copilots will work more and more autonomously and will be networked with other systems to an even greater extent. That will revolutionise engineering and give companies a huge competitive advantage.

Sebastian Seitz: I am convinced that AI agents will become part and parcel of engineering over the coming years. Besides improving existing processes, they’ll make completely new ways of working possible. Engineers and developers will work with these assistants to implement complex projects with greater speed and efficiency. □

Guest article Meta:

HOW IS AI CHANGING THE DESIGN OF DATA CENTRES, MR. MILLS?

A GUEST ARTICLE BY STEVE MILLS,
MECHANICAL ENGINEER – PLATFORM, META

In traditional manufacturing, raw materials are refined, assembled, and packaged into products as efficiently as possible. Similarly, AI factories process vast amounts of unstructured data such as text, images, audio and video, through various machine learning models to produce intelligent outputs in the form of tokens. These tokens manifest as predictions, recommendations, insights and decisions that power everything from personalised content feeds to medical diagnostics and scientific breakthroughs. For companies like Meta, the tokens generated by an AI factory fuel richer, more relevant content that enable immersive and engaging experiences for users. Whether it's suggesting the next video to watch, identifying harmful content, or translating languages in real time, the AI factory is the engine driving new opportunities.

IMPACT ON DATA CENTRE INFRASTRUCTURE

As AI models grow in complexity and capability, the power density of the systems will increase dramatically.

INCREASINGLY COMPLEX AI SYSTEMS:

How do we create a sustainable infrastructure?

Steve Mills: “AI isn’t just changing how we think – it’s changing what we even consider possible.”

Just a few years ago, AI racks operated at 10–20 kW. Today, they are pushing 100 kW, with projections reaching 1 megawatt per rack in a few years. This exponential leap is driven by innovations in AI hardware and system design that pack components more densely to reduce the latency and energy consumption required to produce each token.

While system density improves efficiency, it demands rapid change. This evolution is reshaping data centre design in profound ways, giving rise to a new generation of AI-optimised infrastructure. Several key trends are emerging:

TRANSITION TO DIRECT CURRENT (DC) POWER

Traditional data centres rely on alternating current (AC) power distribution with numerous small power supplies within each rack converting AC to 12 V direct current (DC) for the electronic components. However, this model is becoming inefficient for high-density AI workloads. AI factories are transitioning to ±400 V DC distribution using busbars and centralised power shelves, similar to the Open Compute Project’s Open Rack architecture. This shift enables more efficient power delivery, reduces conversion losses, and minimises the size of power infrastructure within the rack. As power demands continue to rise, data centres will adopt 400 V, 800 V or even 1200 V DC distribution systems to further improve efficiency and scalability.

LIQUID COOLING BECOMES DOMINANT

Once the AI system receives all of that power, liquid cooling is needed, since traditional air cooling is no longer sufficient for high-density AI workloads. Liquid cooling technology has existed since the 1960s in supercomputing and is currently used for modern niche applications such as cryptomining, but must now scale rapidly for AI infrastructure.

AI factories are currently adopting single-phase liquid cooling technologies for this generation of product, with many new cooling innovations arriving in the very near future. These methods offer superior thermal performance, enabling higher computing densities and more reliable operation. However, implementing liquid cooling at scale requires significant changes to data centre designs including new component capabilities, operational processes and maintenance protocols.

EXPANDING DATA CENTRE POWER REUSE

One of the benefits of high-density AI workloads is the heated coolant which comes from the AI systems. The energy that is now stored in the coolant becomes a commodity that can be harnessed for beneficial applications. Instead of dissipating this heat into the environment, AI factories can channel it into district heating systems to warm homes and businesses, preheat industrial processes, or support agriculture in northern regions while reducing energy costs and environmental impact.

Much like the industrial revolution transformed manufacturing, the rise of AI factories is poised to transform the digital economy. As we stand on the brink of this new era, the convergence of data, computing capability and infrastructure will enable the next chapter of human progress - one token at a time. □

COOL!
Direct liquid cooling for chips is a must for any AI application

Rittal Direct Liquid Cooling

AI NEEDS A COOL HEAD

What is it that holds the world together? How can we combat cancer cells? These are the big questions for humanity that the world-renowned **GSI Helmholtzzentrum** für Schwerionenforschung is researching. Finding answers isn't just a case of having bright minds in the research team – the chips in the data centre also need a cool head! In Darmstadt, **Rittal** and GSI have created a blueprint for AI infrastructure with direct liquid cooling (DLC).

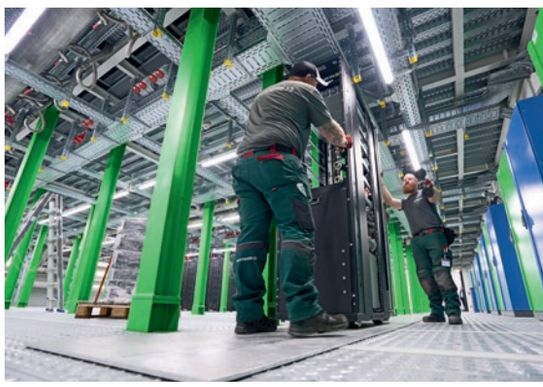
TEXT: STEFFEN MALTZAN AND DAVID SCHAHINIAN

1 MW

COOLING OUTPUT
IN THE TIGHTEST
OF SPACES

“If AI is to deliver added value for industry and research, the IT infrastructure also needs to be brought up to scratch quickly.”

UWE SCHARF, MANAGING DIRECTOR
SALES GERMANY AT RITTAL



How do you incorporate DLC into a data centre? Millimetre precision, a good eye and strong muscles are vital!

DIGITAL OPEN LAB

GSI makes its high-performance data centre available to external cooperation partners, too. The Digital Open Lab provides infrastructure and IT expertise for joint development projects and collaborations relating to data centres, high-performance computing and AI.

Best practice – cross-departmental collaboration for a scalable concept.

The GSI Helmholtzzentrum für Schwerionenforschung is bringing the endless expanses of outer space to Darmstadt. Scientists there are using the centre’s equipment to investigate what happened milliseconds after the Big Bang and how matter was created. “In the accelerator facility, we will be able to carry out research on matter under conditions that you would otherwise only encounter in outer space,” explains Dr Helmut Kreiser, Deputy Head of IT, Head of IT Core Services and Applications, and Head of the Green IT Cube at GSI. “FAIR”, as the Facility for Antiproton and Ion Research is known, is one of the world’s biggest research projects, accelerating particles to as much as 90 percent of the speed of light.

Experiments designed to provide insights into matter or advance cancer treatments very quickly generate data flows running at 1,000 gigabytes a second. GSI has built a dedicated data centre, known as the “Green IT Cube”, to supply that computing power. However, taking the power density up a level for high-performance computing (HPC) and AI pushes standard air cooling at the processors to its physical limits. Unless a liquid such as water can be applied directly to the chips, any large-scale AI applications in data centres are impossible.

COOPERATION BETWEEN PRACTICE AND DEVELOPMENT

Working with server manufacturers and hyperscalers, Rittal has developed coolant distribution technology that generates a cooling output of over one megawatt in a compact rack format. This technology is being put into practice at GSI. When Dr Kreiser visited the Rittal booth at a trade fair and saw the cooling solution, he quickly realised that this coolant distribution unit (CDU) was ideal for the Green IT Cube. It plugs the final air-cooled gap up to the servers. GSI already uses water to remove heat at the rear door of its racks, and this process is highly efficient. The data centre currently achieves a power usage effectiveness (PUE) below 1.07.

It was quickly agreed that the project should not be geared towards practice alone, but development, too. After all, who offers better opportunities for that than the GSI scientists? Rittal and GSI have entered into a cooperation agreement to try out the solution in practice,

Power in the tightest of spaces – a cooling output of over 1 MW for direct chip cooling with water.

while also boosting its efficiency and further reducing its carbon footprint. "Thanks to innovative direct chip cooling in collaboration with Rittal, we are breaking new technical ground together and, at the same time, doing some pioneering work on how systems of this kind can be used on a larger scale in data centres," says Dr Kreiser. Besides applying and optimising the technology at the centre, Rittal and GSI are thus also setting an example for the data centre world.

TO BOLDLY GO WHERE NO MAN HAS GONE BEFORE

As Uwe Scharf, Managing Director of Sales in Germany at Rittal, emphasises: "If we want to leverage AI and high-performance computing to generate added value for industry and make progress in research, we also need to act quickly to create the necessary prerequisites in data centres."

The more effectively the practical problems relating to installation, operation and maintenance are solved, the sooner operators of large data centres will use solutions of this kind. "This infrastructure must be created quickly in Germany, too, so that AI can become a growth driver for industry, research and the digital sector," explains Scharf. "We are driving forward AI applications in industry software with Eplan and doing the groundwork for the IT infrastructure with GSI. If we get it right, research, industry and the digital economy can really take off," he adds.

USING AI TO OPTIMISE AI

One of the biggest challenges when it comes to the widespread use of AI applications is managing their sizeable energy consumption. In the collaboration between Rittal and GSI, this type of optimisation is therefore a top priority – not just at equipment level, but throughout the data centre as an end-to-end cooling system. The start-up company etalytics in Darmstadt is contributing to the project with an AI-based solution. A spin-off founded from a research group at the Technical University of Darmstadt, etalytics focuses on deep-tech developments from data analysis, AI and the energy sciences, taking them from the research stage and putting them into practice. Utilising digital twins of the system, AI from this start-up in the Hesse region of Germany ensures greater energy efficiency when using AI applications. □

"We are doing some pioneering work on how systems of this kind can be used on a larger scale in data centres."

DR HELMUT KREISER,
DEPUTY HEAD OF IT,
HEAD OF IT CORE SERVICES
AND APPLICATIONS,
AND HEAD OF THE GREEN
IT CUBE AT THE GSI
HELMHOLTZZENTRUM

Volker Ludwig, Senior Vice President and Managing Director DACH at Digital Realty.

Interview

“AI IN COLOCATION IS GROWING!”

Over the course of more than 20 years, **Digital Realty** has developed into a top global colocator with more than 300 data centres worldwide. **Rittal** has been a constant partner at its side. We wanted to know which trends are impacting the business and how AI applications are driving the growth of the digital economy. **Volker Ludwig, Senior Vice President and Managing Director DACH**, answered our questions.

TEXT: DAVID SCHAHINIAN AND STEFFEN MALTZAN

Space for data of all kinds – services from Digital Realty are used by companies in a whole range of sectors.

Mr Ludwig, data centres form the backbone of digitalisation – and Digital Realty is one of the leading providers on the market. What kinds of services have helped the company grow so big?
In short, we buy land, connect it to the electricity grid and fibre network, then construct secure buildings on it. We lease space in these colocation data centres to companies who operate their own IT there. In addition, we also provide connectivity services, for example to clouds and telecommunications networks. Around the world, we operate more than 300 of these data centres in over 50 cities.

Which customers use your services?
Our customer base is drawn from every sector, because almost every business model these days is based on digital processes. Heavily Internet-based organisations are particularly prominent, of course. I don't just mean businesses that run infrastructure services or search engines, but also social media companies and streamers, for example.

"Germany can become the leading AI nation in Europe."

VOLKER LUDWIG, SENIOR VICE PRESIDENT AND MANAGING DIRECTOR DACH, DIGITAL REALTY

So colocation data centres are absolutely essential?
They are. Telephone calls – including emergency calls – are just as much part of what these data centres do as IT processes for supply chains and electronic payments. High levels of availability and security are so important that you could say data centres count as critical infrastructure.

How does Digital Realty manage to stay ahead in this growing market?
Through predictive planning that is now paying off. Especially in Germany, we secured capacity at an early stage, and will expand this in coming years. We started here with our first data centre in 2001, and now we have 25 in Frankfurt alone. ▸

What are the biggest forces driving the market?
Firstly, there is the fact that every aspect of life is becoming digitalised. People are using more and more digital services both privately and in their professional lives. Secondly, companies are increasingly relying on external data centres to ensure they can meet regulatory requirements such as Germany's Energy Efficiency Act. It must be stressed that every organisation that switches to a professionally operated colocation data centre or a cloud is making a contribution to greater sustainability.

How can that be, since data centres consume so much electricity?
Data centres have a concentrating effect. While it is true that a lot of electricity is consumed in a small area, colocation data centres operate much more efficiently than if every company had its own data centre. The same can be said of the cloud. While desktop PCs generally operate at a maximum of 20 percent capacity, computers in the cloud reach as much as 90 percent.

What role does AI play in energy consumption?
The way I see it, this issue is still taking shape in Germany. Although all the new infrastructure we're building in particular is AI-capable, the number of installations is still limited compared to the United States. That's not unusual – developments in the US IT sector generally take some time to take hold in Europe. That's where I see an opportunity for Germany.

What opportunity do you mean?
If you create framework conditions – from electricity prices and regulations to building up a base of experts – drawn up in a competitive way, Germany could become the leading AI nation in Europe and supply this major market from its own resources. For this to happen, however, politicians have to better understand that digitalisation is not an end in itself, but rather something that cuts across every part of life and needs to be considered as such – the number of AI applications will grow, be it in industry, fintech, insurance, research or medicine. We have made a good start, but there are still one or two places where we could do with releasing the brakes. In terms of IT infrastructure, the digital economy can pave the way – including in relation to data sovereignty.

READY FOR THE AI BOOM

In Frankfurt, Digital Realty is building a campus with 11 new data centres – 200 MW of computing power, data centre space equivalent to 12 football pitches (90,000 m^2), 16 km of privately owned power line to the nearest substation, and 500 people employed on the construction site. Rittal is supplying large volumes of IT infrastructure components for the campus.

Everything state of the art – Digital Park Ostend in Frankfurt forms an important hub for connecting Digital Realty customers in Europe.

What exactly do you mean by that?
If we build more data centres in this country, it will be easier for us to control which data we want to keep in Germany. The German state could also then act with greater sovereignty as a result. Although many efforts are being made across the EU, it is better not to become too dependent on other countries – even our neighbours. Of course, cutting red tape plays a huge part in all this.

On the other hand, you also benefit from the regulations that companies have to fulfil.
We need regulations within reason. Let's stick with the example of the German Energy Efficiency Act. I can understand why the EU Energy Efficiency Directive meant certain limits had to be put in place that apply throughout Europe. If large user companies can't meet these, or

GROWING TOGETHER

What started with IT racks over 20 years ago has been scaled up as Digital Realty has grown rapidly. Now, it's not just a matter of large numbers of VX IT and TX colocation racks. Rittal is Digital Realty's preferred supplier, and the company recommends RiMatrix system technology to its enterprise customers. The hyperscalers generally work with Rittal already anyway.

don't want to, then there's a high probability they will look for a colocation data centre, and that's great for our business. However, with the Energy Efficiency Act, which affects us, too, Germany has gone its own way again. I'd have been happy if the government had just stuck with the European regulations.

Is there still enough space in Germany for new data centres?
Space might be a limiting factor, but we have already secured enough to meet our needs for the foreseeable future. The electricity supply is at least as important. We could start seeing bottlenecks in some regions in the next few years, which would slow down growth or cause relocations to other regions.

In your business, you are reliant on space and electricity, but also on a whole range of suppliers. What do they need to offer you?
Flexibility, consistent quality, reliability, speed – and good cooperation at a human level. It's really important to me that we work together as partners. We've also been working with Rittal for over 20 years. The fact that the racks, for example, are manufactured in Germany ensures their quality and delivery reliability and is a boost to the location. Our colleagues in the technology departments also value the functionality of the system technology and the flexibility of the sales team. Safe handling is also important. In data centres, fewer injuries are caused by electric shocks – which you might expect – than by the sharp edges of enclosures or racks.

"We have been working in partnership with Rittal for over 20 years."

VOLKER LUDWIG, SENIOR VICE PRESIDENT AND MANAGING DIRECTOR DACH, DIGITAL REALTY

Looking forwards, what trend will define the near future of your business?
Technical complexity continues to rise, and the application landscapes in companies are becoming increasingly heterogeneous. At the same time, companies are unwilling to make any compromises in terms of fail-safe operation and efficiency. This demands a level of experienced orchestration that colocation providers can offer with connectivity services. □

NEWS
INNOVATIONS

Hardware and software – only by intelligently combining these two worlds can industrial and IT companies gain a real edge on the market. Read on to find out more about the latest products from **Eplan, Rittal** and **Rittal Automation Systems**.

Eplan Platform 2026

Engineering software – redefined

Available since the start of September, the new Eplan Platform 2026 simplifies the Eplan portfolio and enables users to make their processes even more efficient and consistent. What's more, this applies to all phases – from concept development and detailed engineering through to manufacture, commissioning and operation. The new Eplan Platform 2026 brings together software solutions for various engineering disciplines. It utilises piping and instrumentation flow charts, circuit diagrams, detailed evaluations, enclosure layouts in 3D and cabling in 3D to create a complete digital twin for the automation system of machines or systems. All the platform products have been completely reworked and their functionality has been expanded. Features that were previously optional add-ons now come as standard in some module packages. The cloud-based Eplan Collaboration Apps, the Eplan Data Portal, eStock (parts management) and eManage (data management) are also included in the scope of supply of Eplan Electric P8, Eplan Pro Panel and Eplan Preplanning.

Scan here to find out more:

Blue e+ chiller series

Rittal expands its chiller series for IT and industry

Following the expansion of its chiller portfolio for efficient machine cooling and climate control in enclosures and server racks, Rittal can now offer solutions that comply with the F-Gas Regulation for virtually every area of application – from mechanical engineering to battery energy storage systems and IT. At the heart of the portfolio expansion are new output classes (1.5 and 7 kW), the series production of outdoor models, and a hybrid IT chiller with a free cooler for particularly good energy efficiency.

New RiMatrix Data Center Configurator

Configure Rittal data centres online

When it comes to expanding a data centre, there is a huge amount of planning involved. Data centres are complete systems in which the safety mechanisms, racks, and power, cooling and monitoring equipment all interact, so these elements need to be carefully planned and coordinated. To address these challenges, Rittal now offers its RiMatrix configurator, which is available online 24/7. In just a few clicks, users get a possible configuration with all the key elements of the RiMatrix platform – a configuration that meets the user's specific requirements with highly standardised IT infrastructure. Thanks to this intuitive tool, the safety mechanisms, racks, and power, cooling and monitoring equipment can be planned quickly. What's more, intelligent algorithms check the plausibility of the selected configurations straight away. The 3D display means customers see a realistic visualisation of their customised solution, including a complete parts list. The tool also gives users the option to request a quote directly.

UL HazLoc

Ex enclosures certified up to +180 degrees Celsius

Rittal Ex enclosures now have UL HazLoc certification, which means they are certified for an operating temperature range of -50 to +180 degrees Celsius. These enclosures already have ATEX and IEC Ex certifications for the same operating temperature range.

The UL HazLoc certification particularly satisfies the requirements of the North American market, where Ex enclosures need to be able to cope with very high and very low operating temperatures.

ELE Verteilnetz GmbH (EVNG)

POWERING ON IN A BLACKOUT

What happens if there's a power cut and everything simply stops working – no emergency calls, no Internet and no shopping? What occurred in Spain in April 2025 couldn't be repeated elsewhere, could it? Unfortunately, yes – and that includes Germany. In such a scenario, this country's critical infrastructure companies (KRITIS) are actually supposed to be able to continue operating on a self-sufficient basis for up to 72 hours. Technically, being able to control power grids digitally makes this possible, but **ELE Verteilnetz GmbH (EVNG)** is the only company to date to have achieved it in practice – with the help of **Rittal** and **Bechtle**.

TEXT: CHARLOTTE ERDMANN

RELIABLE POWER GRIDS

How can digital solutions ensure stability in an emergency?

Find out more in this video:

Gas and electricity aren't magically available from nowhere in our homes. They have to be routed, distributed and transformed so they arrive when and where they are needed. Utility companies operate transformer substations, distribution substations and control stations for this purpose – some no larger than a cabinet, others the size of a house. These stations can be located in the open countryside or right in the middle of a residential area. Many are still operated using analogue controls and connected to the utility company's grid control centre via copper lines.

CONTROLLABLE = CRISIS-PROOF

That isn't exactly crisis-proof. In the spring of 2025, the failure of one single substation in Spain caused a nationwide blackout – with dire consequences, as reported in the media. Besides such risks, load distribution is also an important consideration, which is why Germany made this a statutory obligation at the beginning of 2024. Load distribution only works digitally, though, and each station requires its own autonomous, intelligent control system. According to the requirements of Germany's Federal Office for Security in Information Technology (BSI), this system must continue operating independently of the power grid for up to 72 hours. German grid operators can then respond faster in an emergency, distributing gas and electricity from various sources in a targeted way. This applies to every point in the energy network, whether substations, gas pressure regulating stations or transformer stations.

NEW TECHNOLOGY IN OLD FACILITIES

The challenge lies in the actual implementation. "We only realised the true complexity of the digitalisation process when we considered each of our sites specifically," explains Simon Bartoschewski, Team Leader Communication and Security Systems at ELE Verteilnetz GmbH ▸

"We had to equip decades-old medium-voltage stations with digital modules and sufficient battery capacity to operate for 72 hours."

SIMON BARTOSCHEWSKI, ELE VERTEILNETZ GMBH (EVNG)

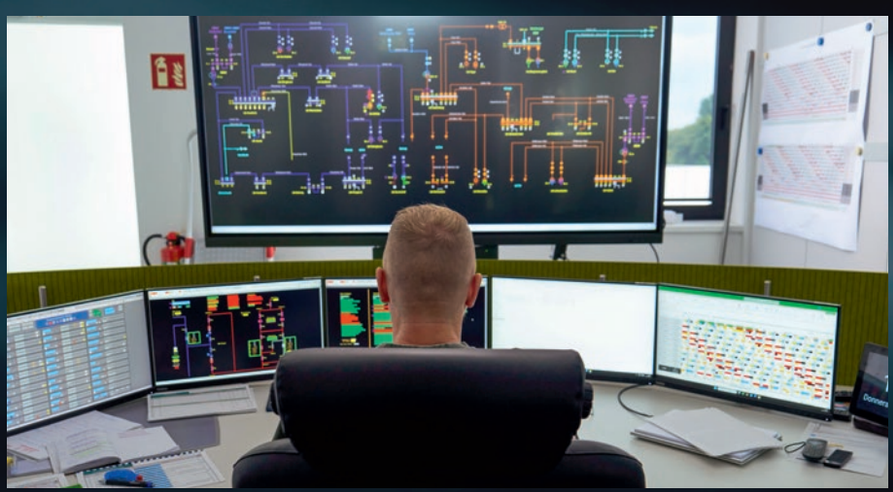
Eleven substations in the Emscher-Lippe region had to be equipped with the latest communication and control systems.

(EVNG), the grid operator for Bottrop, Gelsenkirchen and Gladbeck. “To create a state-of-the-art communication and control system for our total of 21 sites – eleven substations and ten gas pressure regulating stations – we had to install modern technology in old industrial facilities,” he adds.

In other words, EVNG’s often decades-old medium-voltage stations had to be equipped with digital modules and sufficient battery capacity to operate for 72 hours. This was no easy undertaking, particularly since, as Bartoschewski reveals: “We wanted a holistic solution from a single source.”

FINDING A SOLUTION TOGETHER

In more than one case, sites had insufficient space for 19" enclosures. Using smaller routers was not an option. “They didn’t solve the problem of the huge amount of space required for the UPS batteries, which had to last for 72 hours,” explains Bartoschewski.



All energy grid data comes together at the control centre of ELE Verteilnetz GmbH (EVNG), which can quickly take action in an emergency.

Only after an on-site visit by Bechtle and Rittal did it emerge that the solution was to be found not inside the stations, but rather outside. A software-defined wide area network (SD WAN) was a better solution for achieving digital control than copper cables. “You don’t need an external power plant or diesel generator for that, just an ingeniously configured UPS unit,” says Joachim Schwan, Team Leader Rittal Partner Management in the Key Account Management Germany department, outlining the new approach. “What’s more, our bayable and scalable climate-controlled outdoor enclosures are ideal for use outside the stations, protecting the sensitive IT technology against the elements and vandalism,” adds Stefan Hauser, System Consultant IT Infrastructure at Rittal Germany.

True teamwork produced a flexible solution based on standardised parts. “It took the joint efforts of Bechtle, Rittal and Wöhrle, together with components from Cisco, to provide EVNG with a satisfactory overall concept,” reports Ronny Jacob, Global Account Manager at the Bechtle IT System House in Rottenburg. “A single company would never have been able to come up with a solution on its own,” he adds.

“We didn’t get just products from Rittal and Bechtle, but a ready-made solution.”

SIMON BARTOSCHEWSKI, ELE VERTEILNETZ GMBH (EVNG)

Teamwork was essential to develop and implement the overall concept (top photo, from left to right): Simon Bartoschewski (ELE Verteilnetz GmbH) and Kevin Leuze (Bechtle IT System House) with Joachim Schwan and Stefan Hauser (both Rittal).

EVERYTHING STANDARDISED – UPS AND ALL

The simple and highly effective idea was to use just six variants for all 21 stations. “Incorporating the technical options of the industrial routers from Cisco, which withstand both very low and very high temperatures, solved all our major problems,” says Bartoschewski, who is clearly impressed. As for the power supply, it was incredibly complex. Rittal and its UPS partner had to carry out the relevant calculations individually for each site.

The facilities are now based on standardised UPSs. “We combined them with our modular Rittal system – for indoor or outdoor use, as required – and they can quickly be configured to create custom solutions,” reveals Schwan. Logistics ultimately also formed part of the overall solution. Rittal manufactured all the necessary IT rack solutions on a virtually turnkey basis and supplied them to EVNG’s central warehouse fully configured. From there, they were delivered to the individual stations, saving EVNG a great deal of time on site.

INTELLIGENT NETWORKING, PLEASE!

Based on this setup, the all-in-one IT racks use a cutting-edge SD WAN infrastructure to network the stations. “That means network security, bandwidths and prioritisation can be managed centrally, giving EVNG full control,” explains Jacob. Each individual station is connected directly to the control centre. If one line fails, the switch to a different one is made automatically. This is possible thanks to Cisco routers, including versions from its Rugged series in smaller stations. The result is a highly fail-safe solution that also ensures straightforward maintenance and operation. “The CMC III security monitoring system from Rittal supplies us with data such as temperature and humidity figures. That gives us certainty – not just when faults occur, but also during day-to-day operations,” says Bartoschewski.

A MODULAR SYSTEM FOR UTILITIES

Vandalism protection sensors on outdoor enclosures are triggered in the event of any interference. Battery status data can also be accessed at any time. “It works for any type of connection – fibre, copper, wireless or a combination of these – thanks to COM servers that we selected specifically for this purpose,” adds Jacob. That makes the solution even more versatile.

“This 72-hour concept with six variants in a modular system is a pretty big deal for a small, local utility company like ours. It gives us a genuine unique selling point, because we have achieved something that other companies are currently still grappling with,” says Bartoschewski, describing the result of the collaboration with a sense of satisfaction. Each station gets everything it needs and can be adapted to all kinds of situations. “It’s a blueprint for other utility companies and one that we are happy to share,” he continues.

A READY-MADE EMERGENCY SOLUTION

Besides supplying the hardware for this project, Rittal also worked with Bechtle to create a sophisticated all-in-one system that is able to operate self-sufficiently for the necessary period thanks to a perfect emergency concept. “The collaboration always felt like a partnership of equals. We didn’t get just products, but a ready-made solution,” sums up Bartoschewski. The end result was a controllable, self-sufficient and standardised communication network for stations run by utility companies – one that continues operating for up to 72 hours in the event of a blackout – reliable, intelligent and equipped for all future uncertainties. □

An independent study by Fraunhofer has shown that RiLineX represents a quantum leap in busbar technology. Rittal was keen to involve a user in the study who was familiar with the predecessor model – the RiLine60 – and could therefore realistically assess the changes, so gefeba was a perfect choice. Dominik Reimann from gefeba put RiLineX through its paces.

Rittal RiLineX

POWER PLATFORM PUT TO THE TEST

The results of a new study are impressive – in a **field study conducted at gefeba Elektro GmbH**, a specialist in industrial automation and switchgear manufacturing, use of the new **RiLineX** busbar platform from Rittal delivered absolutely incredible assembly times that were up to 75 percent faster than those of a conventional system. Even “old hands” are astonished by the results.

TEXT: MARTIN BARDE, JOHANNES STRÄHLE, STEFFEN MALTZAN

75%

TIME SAVING WHEN ASSEMBLING POWER DISTRIBUTION SYSTEMS

If you want to know how things are going in the switchgear manufacturing sector, you should talk to Marcel Birkenberger (46) from gefeba Elektro GmbH, a switchgear manufacturing company in Gladbeck, Germany. Birkenberger started out at the company as an apprentice – and now, 30 years later, he is in charge of production there. “It’s crazy how quickly the market is changing right now,” he says. He is referring, for example, to the soaring time and cost pressures and the growing demands on the team. He also points out that the quality of digital data is becoming more and more relevant. “gefeba is a family business that has prioritised a strong customer focus from the outset – and that’s part of what has made it successful. To continue like that, we need to keep an eye open for innovations that we can use to offer our customers tailored solutions – which are increasingly in demand – combined with short delivery times,” he explains.

This insight is what prompted Birkenberger and his team to take part in a study commissioned by Rittal. Conducted under independent observation, this study examined how quickly the new RiLineX busbar system platform can be assembled compared to a conventional busbar system. Despite all his experience, even Birkenberger himself was astonished by the results.

A SURPRISING INNOVATION

There were a few surprises in store. “We were astounded that a quantum leap of this kind was even still possible in busbar technology. We laid all the components out on a table and simply gave it a go. It quickly became clear that it all works really simply,” the switchgear expert explains.

In his view, one obvious benefit of the design is that there is only one way of putting the tool-free “Click & Work” system together. The system also predetermines exactly how equipment must be installed. Assembly errors are virtually impossible. “We can now let even semi-skilled staff work with the system ▸

“It’s absolutely staggering that we can save so much time.”

MARCEL BIRKENBERGER, PRODUCTION MANAGER AT GEFEBA

Getting voltage faster: The power infeed system has a flexible, space-saving design.

The bars are securely contained in the board without any need to plan supports for them – and have contact hazard protection up to IP 2XB or IP 3X.

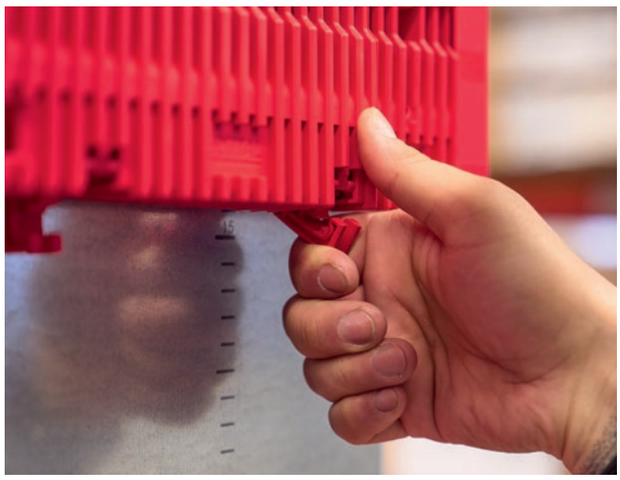
THE STUDY RESULTS AT A GLANCE

RiLineX complete boards

- 75% faster in the case of manual assembly
- 80% faster in the case of CNC-assisted assembly

RiLineX modular boards

- 60% faster in the case of manual assembly
- 55% faster in the case of machine-assisted assembly



Click & Work: Assembly errors are impossible.

and, given the skills shortage, that's obviously a major advantage," he says. He also comments that apprentices enjoy their work more when they achieve results quickly and easily. This is important, because keeping young people motivated over the long term is now much harder for employers than it was even just a few years ago.

SCIENTIFICALLY VALIDATED

If assembly times can be reduced, that's always going to be of particular interest to gefeba from a cost-efficiency perspective – and this important added value offered by RiLineX has now been scientifically proven.

Conducted under the independent supervision of the Fraunhofer Institute, the study at gefeba meticulously worked out the amount of time needed to carry out various assembly steps, comparing the new RiLineX with the conventional RiLine60. Various installation options were also compared, such as completely manual assembly and machine-assisted assembly, where an automated CNC milling machine drills the holes in the mounting plate. Similarly, the options available with RiLineX – installing a preassembled complete board or installing modular components individually – were also compared. "For the study, we deliberately identified work steps that are essential for almost all our projects. In that respect, what we have done here isn't just theory – instead, it's a realistic representation of many switchgear manufacturers' day-to-day work," Birkenberger explains. Volker Schmidt, who is in charge of RiLineX product management at Rittal, adds: "To ensure the study was relevant, it was important to us to select a company staffed by expert professionals who have lots of experience of using the old systems efficiently. gefeba fit the bill perfectly."

"The very latest technology has been installed here."

MARCEL BIRKENBERGER, PRODUCTION MANAGER AT GEFEBA

RESULTS OF THE STUDY

The results couldn't have been clearer. The measured increases in speed were so substantial that they exceeded even estimates from Rittal by a considerable margin. On average, the professionals

“We save half a shift per enclosure.”

MARCEL BIRKENBERGER, PRODUCTION MANAGER AT GEFEBA

at gefeba needed 75 percent less time to put together the preassembled complete board manually. This time saving even rose to 80 percent when using CNC technology to assist with assembly. The main reason for this is that RiLineX does not use individual supports that need to be arranged one by one to protect against short circuits. The bars are securely contained in the board, and components can be installed anywhere on them. Another advantage of the complete board is that busbars and contact hazard protection do not need to be cut to size. The boards are supplied ready to use, so it’s simply a case of unpacking them and screwing them in place. And that’s it.

As the modular boards offer greater flexibility, there’s a little extra work involved, but the amount of time saved compared to RiLine60 is still significant – 60 percent in the case of manual assembly and 55 percent in the case of machine-assisted assembly.

Whichever construction method is used, the RiLineX design is also a standout success when it comes to baying additional enclosures. To connect two separate busbar systems retrospectively, the gefeba experts took over 21 minutes with RiLine60, compared to under three and a half minutes with RiLineX. “From our perspective, this is one of the key ways in which RiLineX offers added value,” says Birkenberger, referring to this time saving. “It means less work for us when we’re expanding the power distribution system in a manufacturing company, for example. Even more importantly, it means a much shorter interruption to our customer’s production operations and, depending on the production environment, that can save the plant operator a huge amount of money,” he explains.

Installing accessories is also so much simpler in the case of RiLineX – and this has a similarly positive impact. The study recorded the time taken to install connection adaptors with and without electrical feed-through, fuse-switch disconnectors, circuit breakers and OM adaptors – and some of the results revealed huge increases in speed with the new busbar solution. For example, compared to RiLine60, installing an OM adaptor was 85 percent faster.

CUTTING SHIFTS IN HALF

“It’s absolutely staggering that we can save so much time simply by using the right busbar system,” says Birkenberger, commenting on the study results. “When I convert these percentages into working time, the results mean I can essentially save half a working shift for each enclosure. That’s a huge gain in efficiency.” However, what this experienced switchgear professional considers at least as important – if not more so – is that his customers will also benefit from the new Rittal solution. “The study has shown pretty clearly that RiLineX is one of those innovations that will enable us to respond to the changed market requirements in a really practical way. We ourselves will become more efficient, and our customers will get a solution that is very easy to handle and can be extended flexibly. It’s a win-win situation,” he says. He’s also a fan of the system’s red colour. “I really like the fact that the boards come in that unusually vibrant colour. Even from a distance, you can clearly see that the very latest technology has been installed here!” □

WORLDWIDE

From mining and coffee production to energy supply – Friedhelm Loh Group solutions can be found wherever robust enclosures, reliable IT infrastructure and efficient engineering processes are called for.

ROBUST SOLUTIONS FOR MINING

AUSTRALIA

In Australia, **Rockwell Automation** is using **system solutions from Rittal** in a large infrastructure project. Robust enclosures and cooling units ensure drive systems operate smoothly, even in harsh environments such as those found in the mining industry. The symmetrical design makes it easy to use the full height and depth of the enclosure when fitting accessories. What's more, enclosures have a load-bearing capacity of up to 1,400 kg, which is ideal for accommodating heavy drive systems. Further plus points include flexible baying and efficient cable management thanks to gland plates with multiple knock-outs for simple cable entry and installation. Triple treatment of enclosure surfaces using a nanoceramic coating, electrophoretic dipcoat priming and a textured powder coating ensures optimum corrosion protection under extreme conditions. **Software solutions from Eplan** were used for the engineering work, and design engineers benefited from excellent digital continuity during this process.

FINLAND

DEVELOPMENT TIME HALVED

The stated goals of **Enerke Oy** when introducing **Eplan software** were to boost efficiency, reduce the number of hours required for development work and improve the quality of documentation. The Finnish company offers its customers power distribution and telecommunication system services. The benefits of Eplan quickly became evident. “We were able to shorten development times considerably. In some areas, the time required was even halved,” says Kim Lillfors, Service Manager at Enerke Oy.

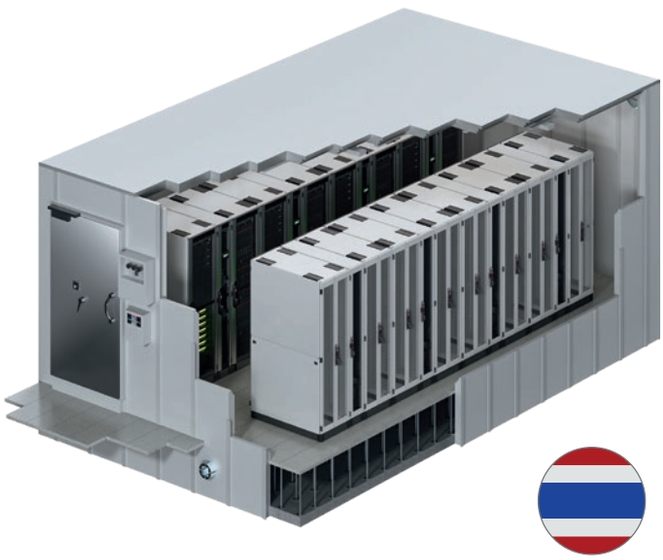
NO OUTAGES

Nova Poshta is a Ukrainian logistics company that transports over 1.5 million shipments every day. The unreliable power supply was causing repeated sorting line outages and unscheduled stoppages. **Process Control LLC** was therefore commissioned to provide an uninterruptible power supply with an output of 120 kW. The battery modules are installed in **VX25 enclosures from Rittal**, each of which has a load-bearing capacity of up to 1,400 kg.

UKRAINE

SIMPLY SECURE!

Based in the Thai capital Bangkok, the **Department of Provincial Administration** (DOPA) reports directly to the Ministry of the Interior. In the future, DOPA’s critical IT infrastructure will be accommodated in a **Rittal security room**. The project covers the entire high-availability room – complete with single door, ventilation and overpressure components, and an electronic control system.



THAILAND

USA

COLD COFFEE

The result of a comparative test for a well-known US coffee manufacturer revealed far lower energy consumption for enclosure climate control. The company was looking to boost its energy efficiency during coffee production and cut its CO_2 emissions. **Rittal** carried out a one-year comparative test using Blue e and Blue e+ cooling units. The results showed an impressive 72 percent reduction in energy consumption thanks to the hybrid technology of the **Blue e+ cooling units**.

Interview

READY FOR TOMORROW!

Caroline and Christian Trips have transformed the business their parents originally founded with just five people into the **TRIPS group**, a leading system house for automation solutions. Based in the Franconia region of Germany and a long-standing customer of **Eplan and Rittal**, this highly innovative company is something of an SME hero – more than enough reason to pay TRIPS a visit in Grafenrheinfeld. The topic of discussion? The small matter of the future.

INTERVIEW: HANS-ROBERT KOCH

It all turned out very differently from what had been planned. Caroline and Christian Trips became business owners overnight. When their parents were killed in an accident, they were forced to act quickly. Encouraged by the people around them and showing great determination, they took over the business in a matter of days and have now been running the company for 36 years. They have been highly successful, too, transforming their parents' small business into the TRIPS group. This leading system house now has 350 employees at five sites in Germany and Poland.

Caroline and Christian Trips, what have been the major milestones in your company's history?
Christian Trips: Our roots lie in big industry in Schweinfurt and Würzburg. SKF and Noell were amongst our first major customers and were followed by Siemens. They represented the major milestones. Working with Siemens meant we could expand our industrial operations and move into the energy business. We are now involved in many aspects of energy generation and transmission. The new building currently being constructed will increase our FAT (factory acceptance test) capacities.
Caroline Trips: One key milestone was in 1996. To achieve growth, we decided to invest here at this site. Working with Siemens as a solution partner was a landmark decision that opened up huge scope for us. The next milestone was founding our Advisory Board.

How has the Advisory Board influenced your development?
Caroline Trips: Since it was founded, we have focused more on our core business, moving away from areas that aren't faring so well and expanding areas where things are going well. That has taken our turnover from 20 million euros to its current level of around 50 million euros. By 2030, we are looking to generate a turnover of 100 million euros. When we started out, we needed to learn how to think strategically. Having become novice business owners overnight in 1989, we initially lacked that ability. We didn't have time for any training. With the appropriate training, we might already have made much more progress.

That sounds like a clear strategy. Can you really plan success in these uncertain times?
Caroline Trips: You absolutely can plan success! We have seen that over the past four years. We have clearly defined our strategy and goals. We now know the kind of turnover we will be generating in the next few years and are well placed to handle any risks that arise. Unforeseen events are always possible,

Together with his sister Caroline, Christian Trips has made the TRIPS group a leading system house for automation solutions

“We seek out the best suppliers and, in that respect, Rittal and Eplan are the perfect match for us.”

CHRISTIAN TRIPS,
MANAGING DIRECTOR
OF THE TRIPS GROUP

of course, but we’re not easily overwhelmed. We are a typical SME, with a conservative approach, resilience and a strong capital base. That’s what Germany is known for and we are a prime example, which is something we’re particularly proud of.

How far into the future do your goals extend?
Caroline Trips: Another thing that makes us proud is that we have made preparations for three of our children to take over from us and can pass on everything we have achieved. We didn’t plan to become business owners, didn’t know what direction to head in and had nothing, but we worked hard. That makes it all the better that we have sorted out our succession arrangements. We have already decided on the date of the handover. The big day is 30 June 2032. That’s when my brother and I will be stepping aside.
Christian Trips: Only 6 percent of businesses in the Lower Franconia region pay any attention to how they will transfer their company to the next generation. That makes us all the more grateful for the ▸

“We are a typical SME, with a conservative approach, resilience and a strong capital base.”

CAROLINE TRIPS, MANAGING DIRECTOR OF THE TRIPS GROUP

commitment our kids have shown. Having a plan is important – but we’ll see whether everything turns out that way in seven years’ time when we step away from the operational side of things and just attend special events and anniversaries (he laughs).

TRIPS has a very sector-oriented approach. What makes the group so successful?
Caroline Trips: Our key sectors are energy, food and beverages, and pharma. We have the advantage of offering the complete package – the entire automation solution from project planning through to commissioning, plus add-ons. That sets us apart from many of our competitors, who are merely switchgear manufacturers. Every enclosure we plan and build is also tested. Quality and sustainability are very important to us, and we seek active dialogue with customers to optimise solutions. We often use their questions as a basis for new business models.

What new business models are they?
Christian Trips: We provide a variety of services, from engineering to IT and OT security. Through our start-up company HUBSTER.S, we also offer support with data-driven processes using AI-based solutions. In other words, our services cover the entire value chain to make customers more competitive. We know that having successful customers means we, too, are successful.

What role do suppliers and partners play?
Caroline Trips: Having the right partners is vital! We have three main suppliers – Siemens, Rittal and Phoenix Contact. When it comes to innovations, that means we are always one step ahead and extremely well placed. These are true partnerships. In the case of Trimot, for instance, our partner is Rittal. We have always asked a lot of our suppliers, but that means we make progress together.
Christian Trips: We enjoy an excellent relationship with Rittal, including the company owner and management team, and the same applies to Siemens and Phoenix Contact. That was particularly advantageous during the coronavirus pandemic, when we, too, experienced supply problems. During this period, we developed some great ideas together, also working with customers. That was a great show of solidarity, one that sets an example for Germany. We should continue to make positive use of this energy.

What makes working with Rittal so appealing?
Christian Trips: The synergy with Rittal as an enclosure supplier and Eplan as a solution provider for engineering software is excellent. Our innovative and dynamic approach means we are always looking at the markets to see how we can boost our efficiency and productivity. We seek out the best suppliers and, in that respect, Rittal and Eplan are the perfect match for us. Both companies are true innovators. Ultimately, it’s a mutual challenge. You grow together and are only as good as each other.

HUBSTER.S GmbH

ANALYTICS AND ENGINEERING FOR SMES

The TRIPS start-up company HUBSTER.S specialises in a number of future-defining areas, developing software solutions and helping its customers optimise their production processes. This involves both hardware and software solutions, which work together to simplify and speed up workflows.

The next TRIPS generation is ready and waiting: Linus Trips (left), son of Christian Trips and CEO of HUBSTER.S GmbH, and Ferdinand Winter, son of Caroline Trips. Paulina Trips, the daughter of Christian Trips, does not appear in the photo.

Why is business going so well for you despite the ailing economy?
Caroline Trips: Every crisis offers an opportunity. It sounds paradoxical, but when others had no work, we always kept two shifts running. That's because we focused on the energy sector. We cover all the technologies in this sector – from switchgear for generating and distributing energy through to hydrogen, electrolysis and battery storage systems. The market tells us exactly what it needs. That's how we grew and how we will continue to expand our business. We don't need to worry about the next ten years. Things are going well!

You have built a new plant in Poland. What opportunities do you see there?
Christian Trips: Even though we are investing heavily in training and cooperating with universities, at the end of the day, we can't find enough staff in Germany. As we see it, Poland offers better prospects. Although wage levels are increasing there, too, we still have a different cost structure, especially when it comes to employers' social contributions. When you have a production facility in another country, the key issue is always competitiveness. Our business in Poland first and foremost enables us to create reserve capacity. We have identified good prospects in the energy and semiconductor sectors.

What values are you passing on to your children? What counts in business?
Caroline Trips: Besides being enthusiastic and enjoying what you do, it is important to keep your feet on the ground, get your teams on board and be grateful for what you have achieved. Having that kind of attitude as well as clear goals and strategies gives you endless possibilities. □

The new building currently being constructed in Grafenrheinfeld will increase FAT (factory acceptance test) capacities.

Plant engineering

NO WORRIES IN POLAND

Some companies are in crisis mode, while others need to manage their growth. **TRIPS** belongs to the second group. The automation technology specialist is looking to the future in a positive frame of mind, including in **Poland**. Working with solutions from **Eplan, Rittal and Rittal Automation Systems**, its new Polish plant has taken a systematic approach to planning growth. We discover how during a visit to Krapkowice.

TEXT: HANS-ROBERT KOCH

NEW PLANT IN POLAND
How to get off to a flying start.

The new plant in Krapkowice has a production area of around 4,000 m².

TRIPS doesn't think small. That immediately became clear when we arrived at the company's premises in Krapkowice. The people here are clearly proud of the large, ultramodern plant that started operating just last year and has a production area of approximately 4,000 m², where over 80 employees carry out large projects and manufacture systems for the energy market, mechanical engineering and other sectors.

GREENFIELD SITE

The plant is a greenfield development in the truest sense of the word. It is also an investment in the future, with plenty of scope to grow. An expansion on the 18,600 m² company premises has always been part of the plan. "We are ready for the future, have planned for rapid growth and can implement two further expansions of our production area at the site," says a proud Lukasz Kowalski, Managing Director of TRIPS Automatyka Polska.

A glance at the development plan reveals just how far into the future the company is looking. The routes for additional supply lines to expand the production area have already been prepared, along with the boreholes to make further use of geothermal energy. On the subject of sustainability, the use of renewable energies was a key consideration at the planning stage. Geothermal systems heat and cool the new plant. Together with a ventilation system that benefits from heat recovery and a 180 kW photovoltaic installation on the company roof, these systems ensure maximum energy efficiency and optimum net zero credentials.

MORE SPACE FOR BIG THINGS

Having so many prospects for the future is something new. It used to be a different story. Expanding the old production site in Wykroty, where TRIPS has been manufacturing on a smaller scale since 2016, was impossible and bottlenecks first started forming some years ago. "We have very customer-specific projects and need space to accommodate systems for large projects," explains Kowalski. "To expand our production capacities, we planned the new plant building to make the production area very modular and flexible so it can easily be adapted to the relevant customer project," he adds. Even large systems, shipping containers and eHouses don't pose any problems. Getting them into the building and fitting them out is straightforward, and they can remain in the production department for weeks and months.

MAXIMUM AUTOMATION

To improve production efficiency and quality, TRIPS uses integrated automation solutions for its enclosure machining, cable processing and system testing. There's no disruptive noise from drilling and milling work either. Staff can concentrate and work on the enclosures in peace. The noisy machining work has been "banished" to a separate production area, where a Perforex machining centre from Rittal processes enclosures and panels on an automated basis. "Thanks to the Perforex, we can ▸

Efficient cable processing calls for speed and precision. At TRIPS, women play a key part in this work.

automate up to 95 percent of all drilling and milling work," says Kowalski.

FULLY DIGITAL

When it comes to digitalisation, the company is not doing things by halves and is adopting a holistic approach. The digital workflows extend from the engineering section all the way through to the cutting-edge workstation at the enclosure, where specialists call up precise details of circuit diagrams and wiring routes on monitors. Printed circuit diagrams are no longer needed. "The Eplan software and its integration into the machine technology helps us create a fully digitalised workflow – from planning all the way through to the finished product," explains Kowalski. The hardware engineering was implemented on the basis of Eplan software in 2024, meaning commissioning and services are now also possible. "We are intending to roll out this comprehensive solution programme further over the next year," reveals Kowalski.

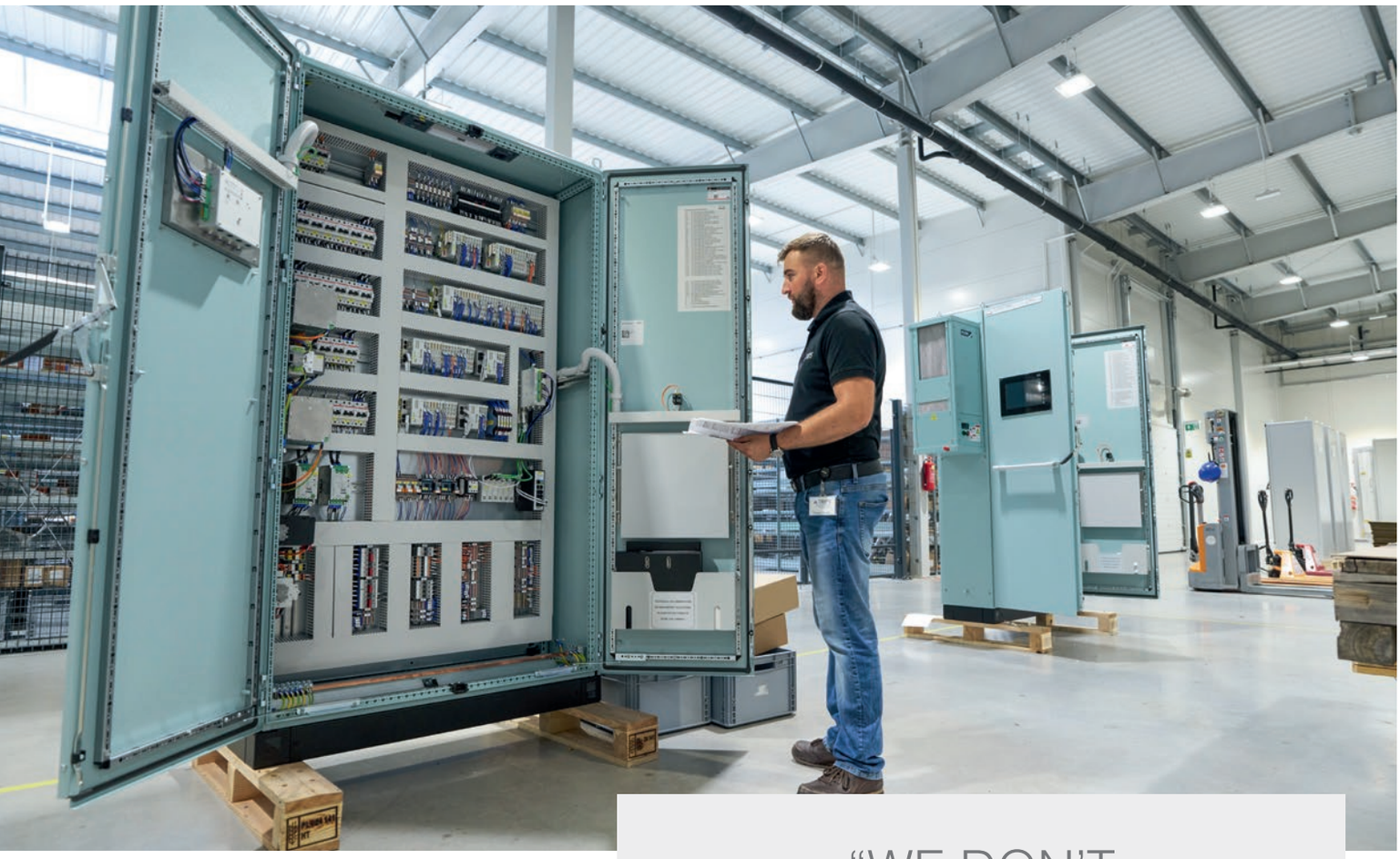
SEEING SKILLED STAFF AS AN ASSET

However, it has so far only been possible to automate certain aspects of production. "Some 90 percent of our production operations are customer specific and therefore still involve a great deal of manual work," admits Kowalski. Well-trained staff are needed. "Skilled workers are vital for success but are in short supply in Poland, too. We invest heavily in the training and development of unskilled workers," he emphasises. While the new plant was being built, TRIPS was already looking for staff and providing them with specific training for the new processes, making use of a temporary plant nearby. The company has also started collaborating with the technical college in Krapkowice. This means young people can complement their theoretical knowledge with practical experience at TRIPS – very similar to the standard three-year training programme in Germany.

WOMEN WITH PRECISION

While walking through the plant, the high proportion of women working in production, especially in the enclosure wiring section, is striking. There is a good reason for this, as Kowalski explains: "A large number of our female staff have many years of prefabrication experience, and women generally have a better feel for precision anyway, which is vital for our projects." □

At the new plant of TRIPS Automatyka Polska, enclosures and panels can be machined automatically at the touch of a button using the Perforex machining centre from Rittal.



“The extensive integration of Eplan and Rittal systems makes our production work faster, more precise and more efficient.”

LUKASZ KOWALSKI,
MANAGING DIRECTOR OF
TRIPS AUTOMATYKA POLSKA

Find out more in our video:

“WE DON’T NEED TO WORRY!”

Mr. Kowalski, thanks to the new plant, you are completely repositioning the company on the market. What are the defining features of TRIPS in Poland?
Our biggest strength is our highly competent and committed team, which combines experience with a state-of-the-art approach to production. Thanks to our enhanced added value, we can support our customers at every stage of their project – from the concept and planning through to production and commissioning. Our automated processes and fully digital workflows ensure maximum efficiency.

How are solutions from Eplan, Rittal and Rittal Automation Systems supporting your business?
The integration of Eplan and Rittal solutions is turning the vision of Industry 4.0 into reality. We use Eplan software to produce digital data models and control machinery at the touch of a button – with speed, precision and zero errors. This combination of digital design and automation means we can significantly reduce production times, improve quality and optimise costs.

What difference do these solutions make on a day-to-day basis?
We don’t need to worry about something not working properly. Eplan software runs smoothly. As for Rittal enclosures, we know there will be no issues with quality. Even when large quantities are required, it remains consistently high. When fitting out enclosures with accessories, we can always be sure everything will fit. In other words, we can focus our full attention on our customers and our growth! □

Toptec Outdoor Enclosures Calculated, Using RiTherm

"IT LOVES THE GREAT OUTDOORS!"

SUITABLE FOR OUTDOOR USE

The ideal enclosure systems in action

Sometimes there is no other option – when insufficient space is available indoors, enclosures have to be "banished" to the outside. That's easier said than done, though. From heat and rain in the summer to cold and snow in the winter, conditions can be challenging for the electronics inside. In a project for one of its customers in Switzerland, **Pezag AG** has shown just how ingenious an **outdoor enclosure solution** from **Rittal** can be.

TEXT: RALF STECK

The finished solution based on bayable Toptec enclosures from Rittal.

Pezag was given an unusual challenge by Swiss company TMP AG in Salmsach. It was asked to find a way of fitting a new plant system and associated enclosures into a confined space. As part of a facility for manufacturing fodder blends, an infeed system needed to be installed between the loading ramp and two autoclaves. However, space was so tight in the existing building that it wasn't possible to find anywhere to install the necessary enclosure alongside the new system.

NOWHERE FOR THE ENCLOSURE

The planners from TMP and Pezag had to locate the enclosure outside, on the wall of the building, and run the connection cable into the building. Unfortunately, that meant the enclosure – together with its sensitive electronics – was exposed to the elements, including heat in the summer, cold and snow in the winter and rain, too. What's more, when temperatures are low, it doesn't take long at all for condensation to form on warm, active components. The planners first considered putting the enclosure in its own little housing, but that would have been expensive and required separate planning permission, which would have delayed the entire project.

ELECTRONICS IN OUTDOOR GARB

Pezag was able to offer a better solution. Rittal had recently added a bayable model to its Toptec range of outdoor enclosures. This model enables several adjacent modules to be connected together to create a single unit. Since it is already designed for outdoor use, there is no need for an additional housing.

Toptec enclosures are made from powder-coated stainless steel and equipped with a rain canopy for outdoor applications. Besides a double-walled design, they also have water-resistant openings at the top and bottom. This creates a "chimney effect" that results in passive heat dissipation.

In addition, a climate control unit can be fitted in one of the enclosure doors. This controls the temperature inside the enclosure so the electronics can always operate under ideal environmental conditions. External influences and the heat generated by the components installed in the enclosure are both taken into consideration.

"Thanks to the Toptec family's new bayed enclosures, we were able to meet the tight schedule."

STEFAN BRÜHLMANN, CO-OWNER AND DEPUTY CEO OF PEZAG IN SWITZERLAND

CLIMATE CONTROL SOFTWARE

To configure the climate control system correctly, the Pezag specialists used the new version of RiTherm for the first time. By taking into account what heat sources are installed where, this software ensures all equipment benefits from the same amount of cooling air.

Importing the design documentation that had been created using Eplan into RiTherm meant no additional work was required to ascertain the position of all the components installed. As Stefan Brühlmann, a design engineer at Pezag, explains: "Three 30 kW frequency inverters are installed, as well as two further inverters with outputs of 18 and 11 kW. The enclosure also accommodates peripheral devices, the power supply and the control system. All that generates a good deal of heat."

Thermal data for Rittal enclosures is already stored in the software. Having used this to determine heat and loss zones, RiTherm proposes the climate control unit with the smallest dimensions possible that will offer maximum energy efficiency.

EVERYTHING READY ON TIME

"Thanks to the new bayed enclosures, we were able to meet the tight schedule," recalls Brühlmann. "We received the customer's enquiry on 19 September, and the aim was to have the system ready for delivery before Christmas. Toptec enclosures and the cooling unit are standard products that can be supplied from stock, so we were able to deliver everything on time," he adds.

"We supplied an all-in-one solution comprising an enclosure, a climate control unit, and calculation and consulting services," explains Kai Wittlinger from Rittal Switzerland. "That helped Pezag provide a complete solution, meaning everyone was ultimately happy. Most importantly of all, Pezag's customer could commission its new system on time," he sums up. □

SGAC

DIGITAL EXCELLENCE IN CHINA

CHINA'S INDUSTRY IN SHIFT
Toward fully digital processes

With its "Smart Manufacturing and Digitized Assembly Factory", Chinese company **SGAC,** together with **Rittal, Rittal Automation Systems and Eplan,** is setting new standards for smart manufacturing. This integrated solution comprising software, hardware and service is significantly increasing the pace of the digital transformation. **It is an exemplary project.**

TEXT: DANIEL GIEBEL

SGAC – China's leading provider of control solutions for large compressor systems – partnered with Rittal and Eplan for a flagship project that is taking the company's own production to a new level. With its "Smart Manufacturing and Digitized Assembly Factory", SGAC has set a new benchmark in terms of automation in China, creating an ecosystem of digital excellence. Tian Sheng, Deputy General Manager of SGAC: "After completion, the Smart Manufacturing and Digitized Assembly Factory of Shenyang Blower Group Automation Control System Engineering Co., Ltd will serve as a premier digital delivery center for compressor unit control systems across Northeast China."

DIGITAL FROM A TO Z

In the first phase, SGAC developed a holistic digital concept for the new production facility. The idea was to digitalise processes systematically. The new assembly and production lines are designed so that they boost both productivity and quality. SGAC is also using cutting-edge automation in controller programming and testing as a means of ensuring precision and efficiency. The system is complemented by digital twins that help implement the automated process control (APC) much faster.

The setting of the production facility posed a real challenge – high temperatures, humidity and corrosive conditions

made robust housing solutions necessary. This is where Rittal came in, supplying suitable modular enclosures that boast high mechanical strength and outstanding electrical properties.

MEASURABLE SUCCESSES

Wire processing in Shenyang is now carried out using the Wire Terminal WT 36 from Rittal Automation Systems – a solution that automates every step from cutting to length to labelling. This process is supported by Eplan Smart Wiring. The software guides operators step by step through the wiring process – without using any conventional circuit diagrams. As a result, SGAC has been able to both cut costs and significantly improve productivity, while also ensuring standardised processes.

The success of the transformation is measurable. Efficiency in the engineering section has been boosted by around 40 percent. Design quality is up by about 50 percent. The assembly centre has increased its capacity by roughly 50 percent. At the same time, the communication outlay between engineering and production has been reduced by around 70 percent.

NEW INDUSTRY BENCHMARK

With its new smart factory, SGAC is establishing a digital competence centre for north-east China. The plant is a core element in the strategic modernisation being rolled out across the entire SBW Group – of which SGAC, as a subsidiary, is a key part – and a model example of the revolution sweeping through Chinese industry. “Our vision is of a smarter, networked system,” says Bill Qin, CEO of Eplan Greater China. “Industrial software, AI, and decision-making based on data will become the keys to future innovations.”

Rittal also sees this partnership as a blueprint for the industry. “Value creation through integration – along the entire chain,” says Mario De Marco, Chief Sales Officer at Rittal. “This is only possible when it is based on trust and shared goals.” That’s the only way to create effects that can be more than the sum of their parts. □

40%

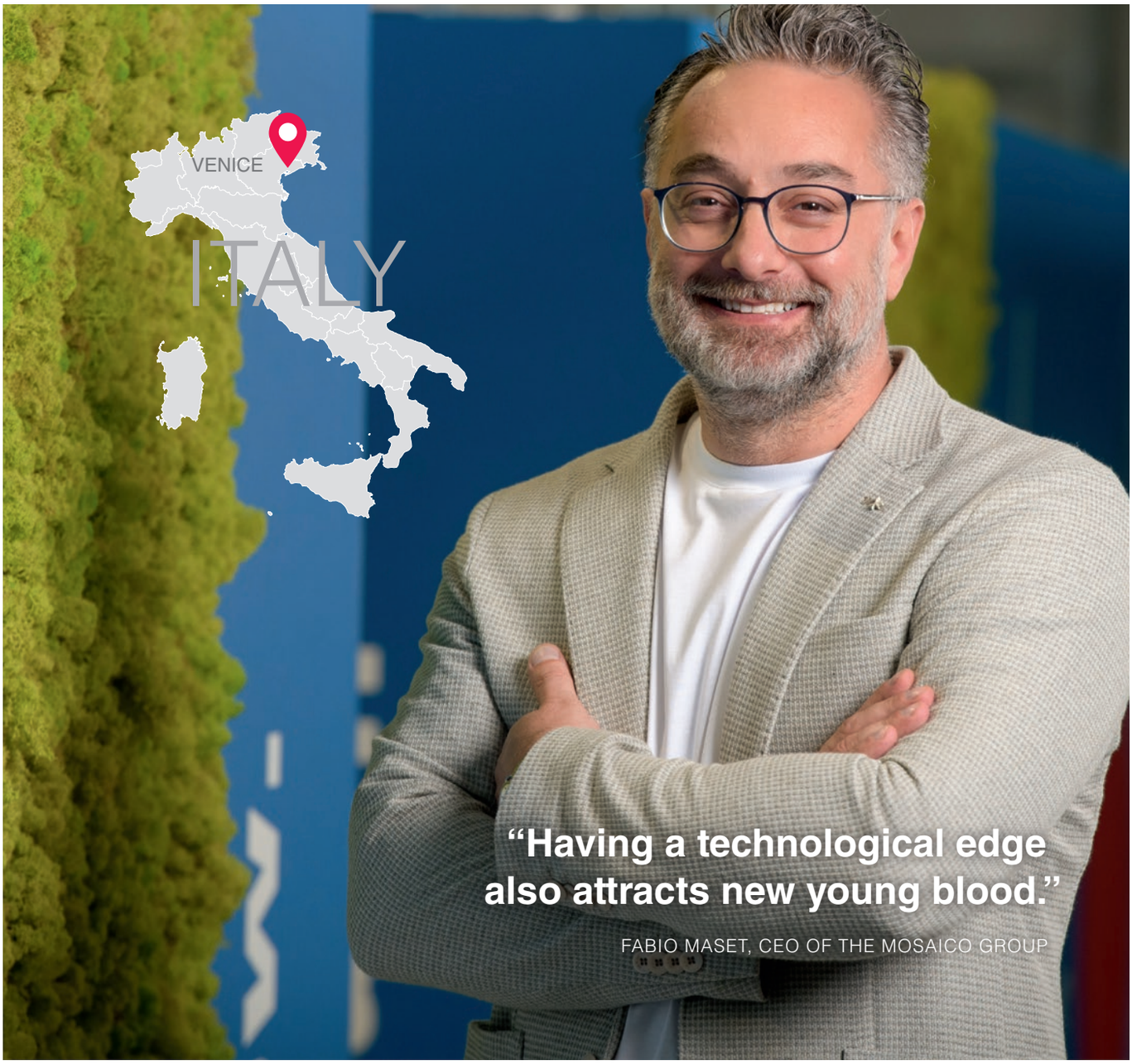
MORE EFFICIENCY IN ENGINEERING – THE SUCCESSFUL TRANSFORMATION AT SGAC IS TANGIBLE AND MEASURABLE.

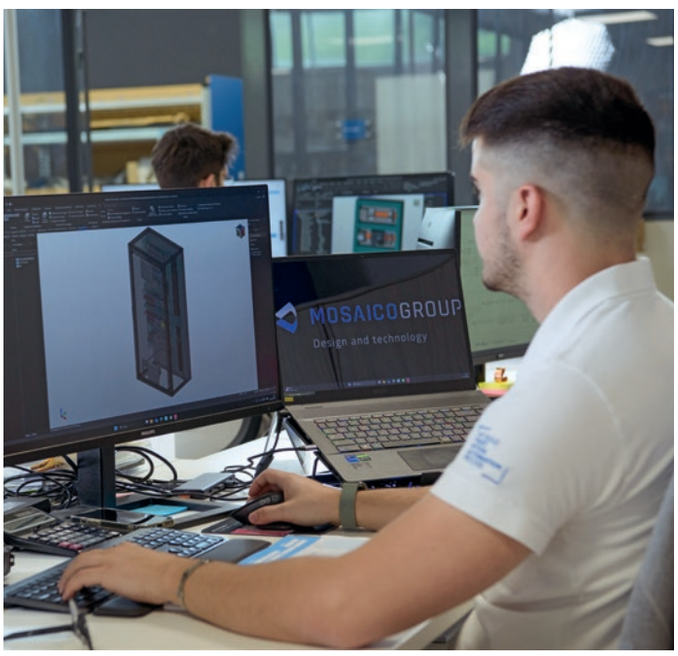
“The solutions from Rittal and Eplan enable us to take a huge step closer to smart production.”

TIAN SHENG, DEPUTY GENERAL MANAGER, SGAC

One of the premier digital delivery centers for compressor unit control systems across Northeast China: the SGAC smart factory in Shenyang.

A smart, networked system – innovative solutions and products from Eplan and Rittal have moved in at SGAC.





The Mosaico Group has been a successful systems integrator for over 25 years.

The Perforex system, along with further machines and solutions from Rittal and Eplan, has helped the Mosaico Group modernise its production.

Mosaico Group

CIAO! AUTOMATION

The **Mosaico Group in Italy** is looking to the future and investing in systematic automation. Solutions from Eplan, Rittal and Rittal Automation Systems have helped the systems integrator become more efficient and competitive, which has also made it a more attractive employer in the battle for young talent.

TEXT: STEFFEN MALTZAN AND DANIEL GIEBEL

From TV studios for the broadcaster RAI to a hotel in the seaside resort of Jesolo and a conference room for UNESCO in Paris – the Mosaico Group has been a successful and versatile systems integrator in Italy and beyond for over 25 years. “Our mission is to build trust, and we are passionate about it,” says Fabio Maset, CEO of the company based near Venice. In a highly technology-driven sector, Maset regards ongoing development as a must. “I firmly believe that automation is now essential for business survival,” he emphasises.

Maset is referring to the fact that companies today are facing growing requirements, volatile markets and, in particular, a shortage of skilled workers. The decision to modernise Mosaico’s production department, which currently has around 160 staff, was therefore a no-brainer. “Our aim is to optimise production by rapidly taking our technology to the next level,” he explains.

TOOLS THAT OFFER A HELPING HAND

When it comes to enclosure manufacturing, Mosaico combines state-of-the-art solutions from Eplan, Rittal and Rittal Automation Systems, including Pro Panel, Smart Wiring, Cogineer and the Perforex and Wire Terminal machines. “These tools help us with the scalability and efficiency of our production processes, while also ensuring their quality,” continues Maset. Digital planning and automated machining of enclosures mean sources of error can be minimised and processes made much faster.

Maset was able to learn about the Eplan, Rittal and Rittal Automation Systems solutions and see them in action at the Rittal Automation Center (RAC) in Valeggio, which opened two years ago. “An authentic environment of this kind is much better than a showroom. It was great being able to chat with experienced staff,” he says.

Further establishing Eplan software as the company’s central design tool is now a long-term goal. “We want to advance the automation of planning and machinery to make our business scalable – and this process must be fast and able to adapt to today’s market,” Maset adds. This strategy is already paying off. “Thanks to our investments, we have won new customers who were previously beyond our reach,” he reveals.

ADVICE COMBINED WITH VISION

Besides the technology itself, Maset also appreciates the collaborative communication with Rittal and Eplan. “The people at these companies have become true technology consultants for us,” he says, adding that the wide-ranging and practical support includes technical, production and development advice. This close collaboration is to be taken to the next level, for example by making increased use of enclosures and mechanical components from Rittal.

The development of in-house staff is another key focal point. Maset is convinced that an innovative team spirit lays the foundations for growth and success. New staff joining Mosaico always work closely with experienced colleagues, including on the new machines. “The positive team feeling this creates motivates our staff to work together to make things happen. In Italy, too, competition for motivated trainees is fierce. Having the edge when it comes to in-house technology also enables you to attract the most talented young blood. We have embarked on an exciting human-machine communication journey that will pay dividends in the long term,” concludes Maset. □

Rittal IT Solutions at Frankfurt Airport

MISSING A FAULT? IMPOSSIBLE!

On peak days, **Frankfurt Airport** uses its highly automated, complex baggage conveyor systems to handle more than 100,000 items of luggage for international passengers. Everything is carefully monitored and controlled from the new **Baggage Control Center**. We took a look around the heart of this control room – the data centre.

TEXT: HANS ROBERT KOCH

OPERATING 24/7

How state-of-the-art data centres ensure smooth processes.

Monitor upon monitor, dashboard upon dashboard – nothing escapes the new Baggage Control Center at Frankfurt Airport.

When passengers check in at Frankfurt, their luggage is the first thing to start its journey. Quick as you like, suitcases and rucksacks are transferred to special container systems, travelling at speeds of up to 18 km/h on conveyor belts from one part of the airport to another, depending on the final destination. The infrastructure creates the conditions that enable a transfer time of 45 minutes for passengers and their luggage. Frankfurt Airport is considered a leading example worldwide in this regard. The conveyor lines in Terminals 1 and 2 – which are soon to be joined by the new Terminal 3 – ensure baggage items are transferred smoothly. "The baggage handling systems boast 99.65 percent availability, thanks to state-of-the-art IT," explains Hubert Grünewald, who is responsible for baggage handling in the ground traffic services team of airport operator Fraport.

WHEN PROBLEMS HIT

"Faults happen all the time – mostly due to the luggage itself," says Grünewald. The reason for this is that many passengers travel with rucksacks that often have tabs and straps on the outside. Due to the centrifugal force on the conveyor belts, these straps can get caught on the equipment and cause jams. "It takes us about eleven or twelve minutes to ▸

"The baggage handling systems boast 99.65 percent availability – thanks to state-of-the-art IT."

HUBERT GRÜNEWALD,
HEAD OF OPERATIONS AND
PROCEDURES AT FRAPORT

Clever solution!
The expansion frame from Rittal makes it possible to expand racks by 200 mm retrospectively without taking them out of use. “This saved us the time-consuming, expensive dismantling of the enclosures,” says Ralf Jinschek.

deal with this kind of typical disruption,” Grünewald says. However, faults can also occur in the roughly 24,000 electric drives on the belts. “If there’s a fault there, it can easily take an hour to switch out the drive,” he explains. In such cases, the systems are immediately put into reverse, and the conveyor belts are reconfigured like the points on a railway to avoid the problem area. And the show goes on!

KNOWING WHAT’S HAPPENING

It’s clear, therefore, that a lot can happen on the 81 kilometres of the baggage handling system. All the same, nothing goes unseen. The new Baggage Control Center takes care of that. “We see everything here – the status of the entire Frankfurt Airport baggage handling system,” says Grünewald. “We can pinpoint every disruption with precision and act immediately. Plus, we always know which suitcase is where.” The first thing you see on entering the new control room are banks of screens that give staff maximum transparency across all processes – at a glance. The beating heart of the Baggage Control Center is next door – the brand new data centre. This is where all the status data from the baggage handling system comes together almost in real time.

“JUST ASK RITTAL!”

Interview with Ralf Jinschek,
Senior Project Manager at IUK-PM,
Frankfurt Airport

Mr Jinschek, what were your criteria when you were choosing the enclosure technology for the control room?
Our starting point was the communication technology at Frankfurt Airport. When there’s a need for high levels of availability, we rely on proven standards. A standard for distribution enclosures has already been in place for several years, and that was developed with Rittal. We took precisely these enclosures and adapted them for the control room. Since then, our experience with Rittal has been nothing other than excellent in the control room, too.

What experience is that, exactly?
We know the quality advantages that Rittal enclosures give us – starting with the door handles. In terms of cooling – where technology has to exhibit excellent operational reliability – we didn’t want to risk any major experiments when rolling out LCP technology, so we’re very happy to have a reliable partner at our side. It’s the same thing when we need a quick solution. The best example is the expansion frame for the racks. We made a couple of calls, and we quickly had a simple, cost-effective solution that was technically sound.

What about those expansion frames?
It was a while ago that we laid the plans to use racks in the data centre that are 1,000 mm deep. IT has moved on in the meantime, and suddenly we needed deeper racks to accommodate the cabling for the new generation of servers. However, we only identified the problem after the heavy-duty frame, underfloor pipework and racks had been installed. Swapping in 1,200-mm-deep racks would have required a complete renovation, and would have caused delays and enormous additional costs. Looking for alternative servers, on the other hand, would also have been very complicated and time consuming. We therefore needed a quick solution!

And what exactly was that solution?
We said to ourselves: “Let’s just ask Rittal!” The solution was actually straightforward – but you have to think of it first! We simply fitted expansion frames to the racks, creating more space in the interior. Rittal took care of that in no time at all. Trust, close understanding and problem-solving expertise – these are the reasons why we value collaboration with Rittal in the control room, too.

“Trust, close understanding and problem-solving expertise – these are the reasons why we value collaboration with Rittal in the control room, too.”

RALF JINSCHEK, SENIOR PROJECT MANAGER AT IUK-PM, FRANKFURT AIRPORT

LOW-MAINTENANCE TECHNOLOGY

Another, separate data centre provides the requisite redundancy, even in emergencies. “We need systems in the control room to have high availability – on a 24/7 basis – without any usage problems or risk of outage,” explains Ralf Jinschek, Senior Project Manager for IT at Frankfurt Airport. “In addition, we need stable, high-availability, low-maintenance components, including in the infrastructure technology. That’s why efficiency wasn’t the only priority for our experts when choosing a preferred cooling technology. Another key factor was which technology had lower maintenance requirements.”

RELIABLE COOLING

Liquid Cooling Packages (LCP) from Rittal, with a cooling output of 7 KW per LCP, provide the ideal climate for the master computers – thus ensuring high IT availability. The liquid-based cooling systems are installed between the VX IT racks. The servers suck in the cold air blown in at the sides by the LCPs and feed the warmed air back into the cycle at the rear. The air/water heat exchangers in the LCPs then recool the air.

The LCPs provide reliable climate control, and as a rack-based water cooling system, they are more space-saving and energy-efficient than an ambient-air climate control system. Another advantage of cooling with water is that it is quieter. Cooled air stays within a closed system in the racks, and doesn’t need to be arduously blown through air-conditioning units into raised floors and through perforated base plates in front of the racks.

Grünewald is delighted to say that it is not only the staff in the control room next door who benefit from the sudden quiet in the data centre. “Our service technicians no longer have to dress up warm to carry out work in the server room.” It’s a win-win situation all round! □

RITTAL IN THE NEW TERMINAL 3

The new Terminal 3 at Frankfurt Airport is one of the largest infrastructure projects in Europe. Up to 25 million passengers will be able to pass through there in future. The baggage handling system is fitted with state-of-the-art technology – including enclosure systems from Rittal.

Digital continuity in mechanical engineering

WE'LL CLARIFY THAT!

GEA builds equipment and machinery. The company is enlisting the help of **Eplan, Rittal and Rockwell Automation** to automate a centrifuge for the foodstuffs industry. An Eplan project is being used as a common software environment for design engineering work, which benefits efficiency.

TEXT: CATHRIN HESSELER

SPEED AND EFFICIENCY

From engineering to operation and maintenance

Developed by GEA for craft breweries – the efficient plug & win i separator.

Building machinery is a complex task. It's all about creating highly technical systems and devices with ever greater and – wherever possible – fully automated manufacturing capabilities. What's more, competition is fierce. Mechanical engineering companies are therefore always looking for ways of boosting their efficiency. One way of doing that is to get machinery ready to start production faster by speeding up the engineering phase. This is the approach being taken by GEA – in collaboration with Eplan and Rittal and its partner Rockwell Automation.

A SMART CENTRIFUGE DESIGNED BY GEA

Mechanical engineering company GEA is a long-standing Eplan customer. It explicitly looks for all-in-one solutions that incorporate various engineering disciplines. GEA sells machinery and equipment worldwide – to customers from the food, beverage and pharmaceutical industries, amongst others. Its products include devices known as separators – vertically arranged centrifuges that are used to separate and clarify ▸

Seamless transition: Adding parts from the Eplan Cloud to the project and parts database.

Find out more in our video:

liquids. One example is GEA's plug & win i separator, which has been developed for craft breweries and cider producers with the aim of increasing the yield from each batch.

This device was designed in line with the principle of digital continuity. In other words, data from the enclosure design stage was used for further steps and made available to teams from different disciplines, utilising Eplan as the overarching software and platform. Rockwell solutions were also incorporated, as they control the separator. A sector-specific enclosure system from Rittal was used to protect these components. The end result was a continuous flow of data – from the engineering and production stages all the way through to operation and maintenance.

A "holistic" approach of this kind makes it easier to select appropriate hardware. For example, Rittal provides informative data from its various enclosure solutions via the Eplan Data Portal. Integrating the Rittal RiPanel product configurator into this portal ensures from the outset of the planning process that the enclosure selected is suitable for the environmental conditions and can accommodate the envisaged components. As a result of the close link between software and hardware, quality requirements are reliably met. When a selection is being made via the Eplan Data Portal and Rittal RiPanel, engineering-relevant data for the Rittal enclosures is made directly available, thus ensuring the solution arrived at is the right fit.

This same principle applies to other partners and further components. "The digital twin of the machine enclosure, together with its detailed component data, is one of the most important aspects of the project," explains Simon Budde, Head of Partner Management at Eplan. "This also includes data relating to the components provided by our partner Rockwell Automation," he adds.

BENEFITS OF A COMMON SOFTWARE ENVIRONMENT

That's the key advantage of an Eplan project. The solution makes it possible for the various disciplines and different companies involved to use the same software environment, with all relevant data available in one place. This is helpful during the design phase, when manufacturing the enclosure or machine, and later on during operation. That's because up-to-date documentation is easy to find and changes are mapped digitally straight away. Customers using Rittal enclosures can activate the ePocket digital wiring plan pocket, where data generat-

"The digital twin of the enclosure, together with its data, is one of the most important aspects of the project."

SIMON BUDDE, HEAD OF PARTNER MANAGEMENT AT EPLAN

ed using Eplan software at the engineering stage – such as machine documentation for the plug & win i separator – can be filed digitally. ePocket is always up to date and directly accessible from any location. That opens up further possibilities such as the digital documentation of changes in projects using Project Viewer (formerly Eplan eView), including redlining and greenlining. As a result, tracking down where something has been changed, and why, is easy. In other words, all the enclosure information is available in ePocket and doesn't get lost.

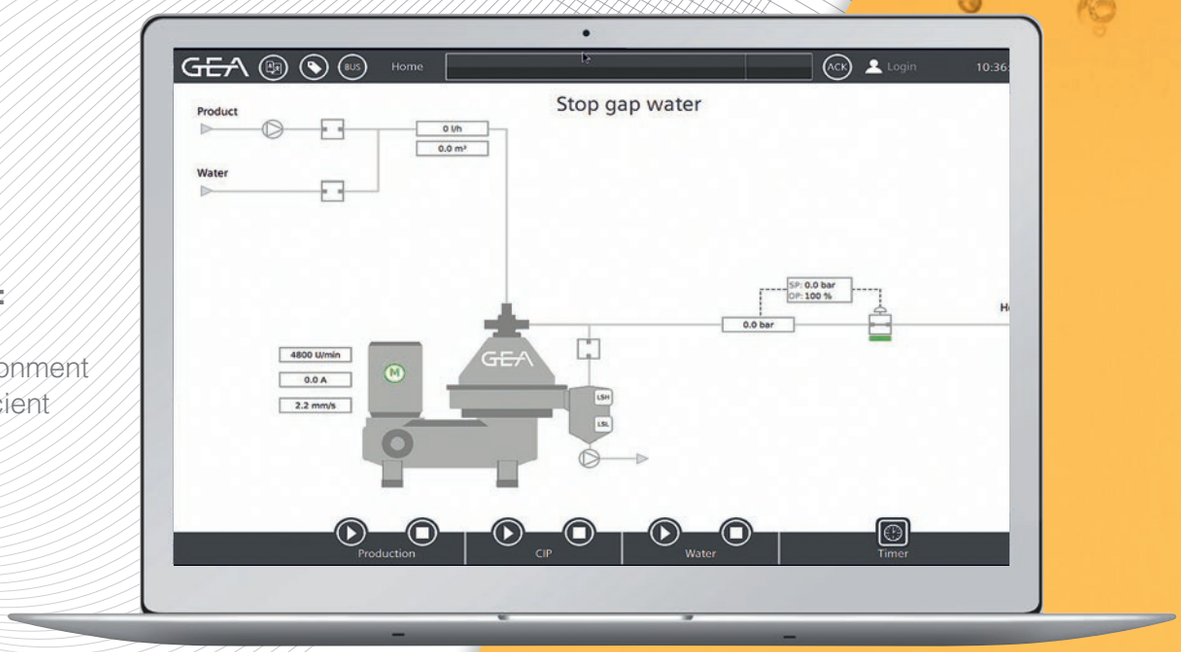
This concept of having one fully comprehensive overview is a huge help, including in the event of glitches somewhere in the machinery, for instance. When a motor stops working, a frantic search for the necessary information – such as the location of the components responsible for controlling and supplying power to the motor – often ensues. The Eplan project maps the interaction of machine functions, so this information is easy to find. Data from the piping and instrumentation diagram, for example, is visualised in the technical preplanning tool Eplan Preplanning, where it is easy to locate the motor and navigate to the relevant point in the wiring schematic.
In our example, a cable connects the centrifuge motor to a PowerFlex 753 drive from Rockwell Automation, a control system for applications up to 400 HP and 270 kW. This is one of over 30,000 Rockwell Automation components in the Eplan Data Portal that can be incorporated into the automation documentation in Eplan using a simple drag & drop operation. The information stored in the portal makes it quick and easy to organise a replacement for the defective component in the drivetrain.

DATA EXCHANGE USING AML

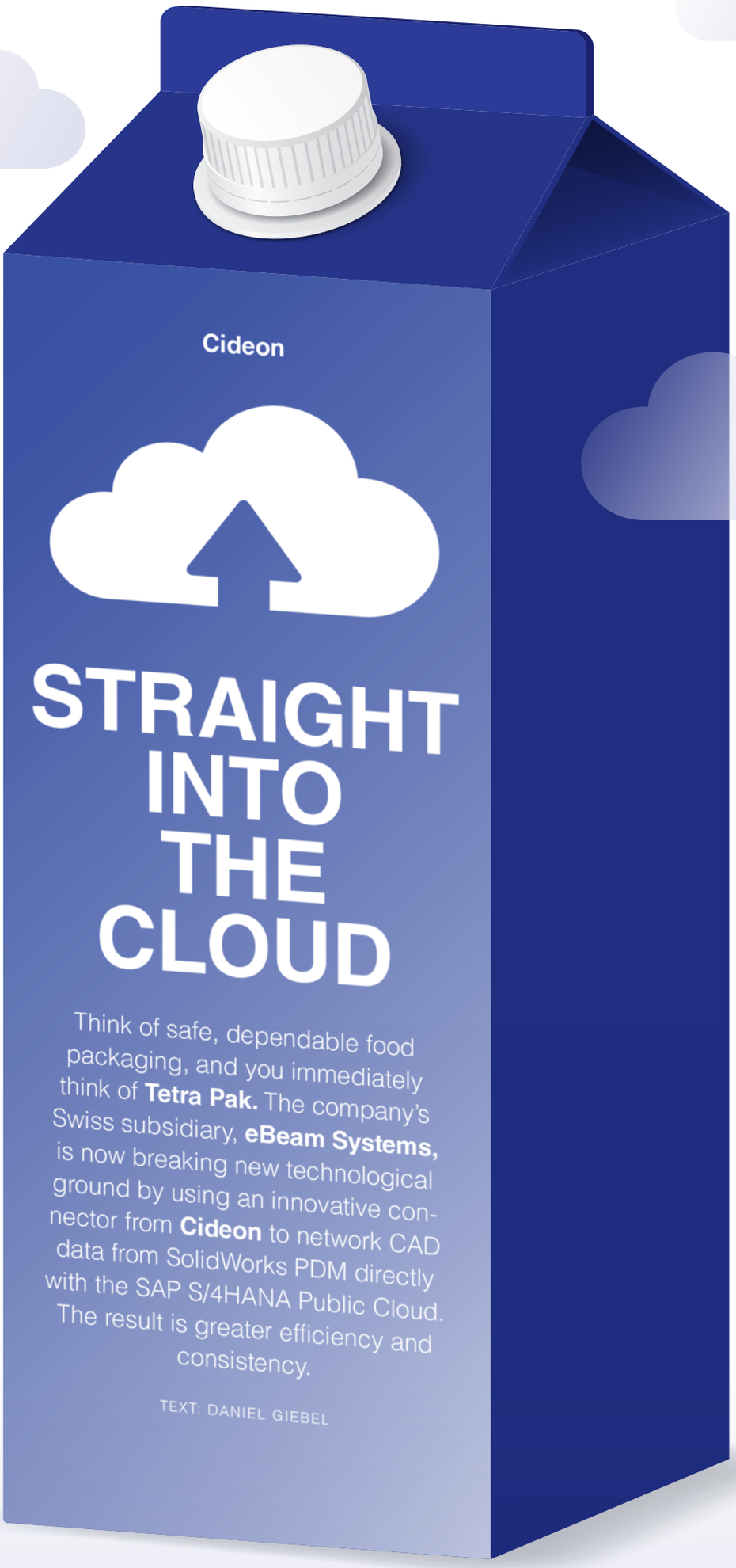
The Eplan project's data continuity delivers further benefits, because data can be exchanged on an automated basis across different disciplines. For example, it can be transferred to Rockwell Automation's Studio 5000 programming environment via an AutomationML (AML) interface. This means the data required to program PLCs no longer needs to be input separately. Instead, the interface enables programmers to use the existing data from the Eplan project. □

"Automation ML and Rittal Automation Systems are helping GEA to automate processes and cut throughput times."

THORSTEN FREYTAG
FROM THE VALUE CHAIN &
DIGITALISATION TEAM
AT RITTAL



Simply smart:
The common software environment makes for efficient planning.



STRAIGHT INTO THE CLOUD

Think of safe, dependable food packaging, and you immediately think of **Tetra Pak.** The company's Swiss subsidiary, **eBeam Systems,** is now breaking new technological ground by using an innovative connector from **Cideon** to network CAD data from SolidWorks PDM directly with the SAP S/4HANA Public Cloud. The result is greater efficiency and consistency.

TEXT: DANIEL GIEBEL

Tetra Pak has long been synonymous with drinks cartons – but nowadays, these "cartons" are state-of-the-art aseptic packaging solutions that keep foodstuffs safe and give them long shelf lives, without any need to keep them in the fridge. The global technology leader produces not only packaging materials, but the necessary machinery, too. One of these machines is manufactured in Flamatt, Switzerland, where Tetra Pak subsidiary eBeam Systems is working on innovative low-voltage modules that sterilise packaging without using any chemicals.

When building its highly specialised systems, the eBeam team puts its trust in SolidWorks, which has so far been connected to SAP ECC via conventional CAD desktop integration. When the decision was made to switch the system to SolidWorks PDM Professional and the SAP S/4HANA Public Cloud, a new solution for connecting the two worlds was needed. "Since the engineers were happy with SolidWorks, we took the next step – but with a clear idea about how integrated the new system should be," explains Sven Muregard, Project Leader at Tetra Pak.

"We're really delighted with the service from Cideon – both the project management and the technical implementation."

SVEN MUREGARD,
PROJECT LEADER TETRA PAK
EBEAM SYSTEMS

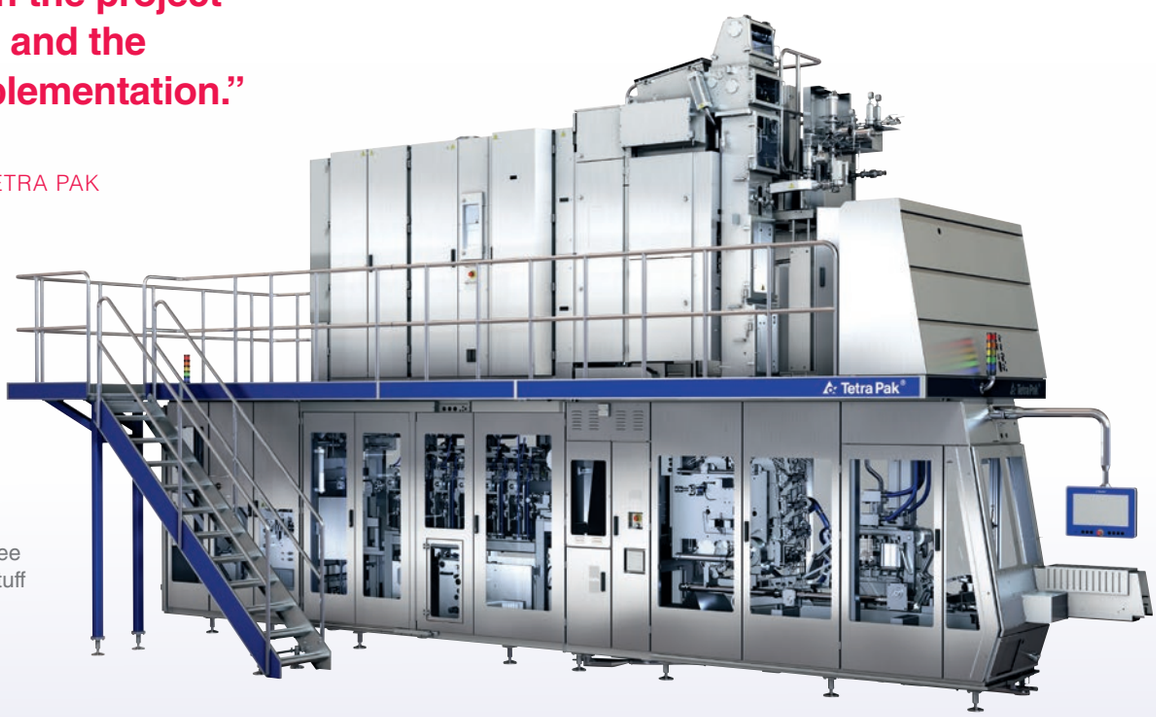
CIDEON CONNECTS

The solution came in the form of a new connector from Cideon – a specially developed interface that connects Solid-Works PDM directly to the SAP Public Cloud. Tetra Pak decided on this solution quickly – partly thanks to its positive experience of Cideon in the CAD environment. "We had a seamless process between engineering and ERP – and that was something we definitely didn't want to lose," reports Muregard.

As this specific connection was uncharted territory for both partners, the migration was planned with meticulous care. Cideon extracted the CAD data and metadata from the old ECC system, and the new PDM system was set up at the same time. Meanwhile, SAP migrated neutral formats. The ultimate result was a clean data flow with an installed interface.

A SMART LINK

The concept is based on a clear principle – large files remain local in PDM, while smaller files such as PDFs or STEP files are transferred into the cloud. Duplication of data is avoided, as the interface creates links – and this also saves storage space in the Public Cloud. Both the procurement team and external partners benefit from easy access to the information they need, without having to navigate complex data structures. "We're delighted with the solution – in both technical and organisational terms," Muregard sums up. A cutting-edge, cloud-based platform for product data management and ERP is now a reality – and it's integrated, powerful and fit for the future. □



eBEAM

Germ-free thanks to low voltage: Energy-efficient, chemical-free sterilisation of foodstuff packaging thanks to eBeam technology from Tetra Pak.

Cideon Conify

THE DIRECT ROUTE TO **MCAD** AND **ECAD DATA**

EASY CONFIGURATION
Data from sales to the build-to-order design

Today's solution of choice for staying competitive in a global market could be called "series-standard multivariant mechanical engineering". Engineering automation is called for – from the product configurator to the order system, including the generation of CAD data. Lara Bernetz, Head of Portfolio Management at Cideon, and Achim Potthoff, Director Business Development at Eplan, explain how **Cideon Conify** software reduces the time it takes from the initial enquiry through to completion of the order.

INTERVIEW: MICHAEL CORBAN / KEM

“The ECAD connection to Cideon Conify makes build-to-order design much easier.”

ACHIM POTTHOFF,
DIRECTOR BUSINESS
DEVELOPMENT
AT EPLAN

Why are configurators such an attractive option for specialist mechanical engineering?
Lara Bernetz (Cideon): A product configurator is really useful, especially in sales. It makes it easier to pull together the right components and very quickly calculate the price for the quote. But that’s generally followed by lots of manual steps. Design engineers typically refer back to former projects and copy data, which generally results in lots of duplicates and copies in the system. It would be better if PDM-compliant data could be made available automatically based on the configuration and also be transferred to the ERP system at the time of the handover to production.

How can this kind of system discontinuity be resolved?
Bernetz: We use Cideon Conify to resolve the issue of system discontinuity between the quotation and sales phase and the order processing stage. This software makes it possible to generate design engineering data and parts lists directly from the configurator, on the basis of the native CAD data. Consequently, design engineers no longer have to create each option manually – instead, Cideon Conify gives them the data at the touch of a button. Complex designs can be generated automatically in the MCAD software – Autodesk Inventor or Solidworks, for example – and stored in the PDM system, while the parts lists are made available in the ERP system. In the ECAD world, the same applies to Eplan.

Does that mean Cideon Conify isn’t a configurator, but rather an interface between sales configuration and the world of CAD?
Bernetz: That’s right. We take data from the sales configurators, which can come from various manufacturers. Dimensions, features, characteristics and much more can be incorporated into CAD models directly and automatically – and that applies to both the mechanical and the electrical design. In the case of mechanical design engineering, these are 3D models from which the corresponding drawings can be derived straight away. All data is stored in a PDM-compatible format, just as though the design engineer had prepared it manually. This means the user gets a design that is up to 80 percent complete on average. This can then be used as the basis for the build-to-order or special design.

What about the electrical side of a design – how can that be mapped?
Achim Potthoff (Eplan): With Eplan Engineering Configuration (EEC) and Eplan eBuild, there’s nothing new about wiring schematics at the touch of a button. What is new, however, is the ECAD connection via Cideon Conify to an upstream configurator. This facilitates a customised, automated build-to-order design for both the mechanics and the electrics, and a mechatronics parts list can be created simultaneously. Depending on how detailed the configuration is, we can usually generate the bulk of the production documentation automatically – and even all of it in some cases. What’s important is that we use Cideon Conify to automatically transfer as much information as possible from the upstream configurator to the order system. Thanks to the high level of consistency from the configuration to automated design engineering and all the way through to the production of the machine, a mechanical engineer can make the process much, much shorter, while also enhancing its quality. And, of course, significantly faster delivery times are a powerful sales argument.

Do these benefits also apply on a cross-disciplinary basis?
Potthoff: They certainly do! This interdisciplinary approach is a huge hub. The parts list is a truly me-

chatronic parts list, so the next steps at both the production and commercial stages are much simpler – or perhaps "clearer" would be a better word. To give you an example, time and again, sensors are ordered in mechanics, but the same sensors are also included in the electrical parts list. In a mechatronic parts list, you can resolve that easily with a locational reference. Once the configuration has been completed at the order processing stage, the production documentation and mechatronic parts list are generated for the machine. The production department can therefore begin planning and the procurement team can start ordering the necessary components. This is advanced engineering automation – it offers process reliability and can handle even challenging design variants automatically.

"Cideon Conify resolves the issue of system discontinuity between the sales phase and the order processing stage."

LARA BERNETZ,
HEAD OF PORTFOLIO MANAGEMENT
AT CIDEON

What are the relevant requirements?

Potthoff: The major, never-ending task involves clearly structuring the machine and specifying options and variants on a functional level. Once that's been done, mechanical and electrical design engineering tasks can be automated. Admittedly, that's challenging – but it's worth it. If my configuration needs various pump units, for example, that needs to be thought through in advance. Do all options have the same power supply, the same sensors, and so on? It's also important to work out which variants should no longer be sold. It's a bit like a tidying-up process, and it makes sense to think about the product structure in advance and standardise it. To put it another way, how can you implement a practical reuse concept that can be automated?

Bernetz: It is particularly important that the user has an overview of the entire process and can achieve a shared understanding of the relevant product and its structure and modularisation within their own company. The sales team should only be able to configure solutions that are technically feasible. The key word is standardisation – and it has huge potential. □

Scan here to find out more:

STEEL FOR AUTOMOBILES:
Opportunities and challenges throughout the sector

Steel service

LASER CUTTING AND SUPPLY CHAINS

Automotive manufacturing is in the midst of a revolution. Electromobility, digitalisation and competition from the Far East are all posing challenges for the industry in Germany. **Stahlo** is right at the heart of things. As an independent steel service centre, the company acts as an **interface between steel producers, automobile manufacturers, and their suppliers.** As a result, Stahlo is familiar with the risks – and opportunities – in this vital sector.

TEXT: MARKUS HUNEKE, STEFFEN MALTZAN

The biggest feature of this sector right now is uncertainty," asserts Benedikt Raspovic, Head of Key Account Management Automotive at Stahlo. As he explains, it is not just the economic, political and technological conditions that are constantly changing both internationally and in Germany: "It has become much more difficult for manufacturers to predict which strategies and models will really appeal to their customers – and which won't." For the suppliers, their economic situation is very dependent on the models in which their products and services are used.

THE RISKS ARE GROWING

Situations where the planned production numbers for a new model don't tally with actual sales figures are much more common than they used to be. When you're talking about a product that takes years to develop and initially generates only costs rather than revenue, that poses a serious risk – for manufacturers and suppliers. At the same time, there are positive surprises, such as models that resonate unexpectedly well with customers. Overall, the role of suppliers is changing. Although the steel service centre's business is still shaped by the triad of enquiries, quotations and deliveries, contacts are increasingly going beyond the basics as a need emerges to discuss entire processes. "Manufacturers need a new level of flexibility and technological focus from us."

TECHNOLOGY AND CUSTOMER PROXIMITY

With its Steel Compass, Stahlo has become the first company to develop a concept for categorising green steel products. What's more, the Digital Material Passport provides a tamperproof means of tracing products back through the supply chain. Besides these forward-looking developments, the most important aspect of the company's focus on technology is

As Head of Key Account Management Automotive, Benedikt Raspovic knows what is most important to his customers.

investment in equipment. For example, Stahlo has greatly increased its flexibility by acquiring a new laser cutting plant. Being able to produce small pre-production series without having to invest huge sums in development is exactly what OEMs and suppliers need – especially now.

However, technology is not enough on its own, and never has been. Despite all the digitalisation, customer proximity is still key. “We have to understand exactly where the problems lie. Nothing beats a face-to-face discussion for that,” emphasises Raspovic. Regular visits to suppliers and OEMs are therefore part of his everyday work. Indeed, the 31-year-old has just returned from a mini tour of Germany, visiting a series of automotive suppliers and vehicle manufacturers for discussions over the course of just a few days.

“We’re not just salespeople any more. Conversations are increasingly about flexibility and skills across the entire process.”

BENEDIKT RASPOVIC, STAHLO

After all, the automotive sector is still a business where personal contact matters. Raspovic explains what is changing: “The things we’re talking about are becoming more and more multilayered. Gone are the days when we were simply salespeople. Whether it’s steel goods, manufacturing and machining processes, or logistics, conversations are increasingly about flexibility and skills across the entire process – especially in volatile times.” □

NEWS
COMMITMENT

Whether at the company sites or through the work of the **Debora Foundation** and the **Rittal Foundation**, people from the Friedhelm Loh Group provide aid, create hope and take action to protect their environment. Whether locally or internationally – **we get involved!**

Investing in our staff

We are family!

The "dining room" Rittal has built at the Haiger site is much more than a mere canteen. It is an excellent meeting place for everyone from production workers to administrative staff. "We want to be a family – and having a single dining room for everyone is part of that," emphasises our owner, Prof. Friedhelm Loh. Investing over five million euros in the new building, which is inspired by the timelessly modern architecture of the New National Gallery in Berlin, reflects the goal of helping staff look beyond their day-to-day working lives. The next step is the construction of a new Rittal Innovation Center at the Kalteiche site, complete with a hotel boasting around 200 rooms. The Rittal Germany subsidiary will also be based here. These initiatives represent another significant investment in the region by the Friedhelm Loh Group – one that is creating further impetus for the future and some 300 new jobs.

Forest of the future campaign

Regrowth

Close to 40 volunteers from the Friedhelm Loh Group have planted over 800 new trees in Ewersbach. After a first team of volunteers planted seedlings over a comparable area back in 2024, this has extended the Group's forest of the future to a total of 1.2 hectares. The campaign is focused on a former spruce woodland in Dietzhölztal, which had to be completely cleared due to the consequences of climate change. It is to be replaced by climate-resilient mixed woodland. The new species being planted include red oaks from North America and sweet chestnut trees from Italy, both of which are regarded as being particularly drought tolerant. The initiative was organised by the state forest management company HessenForst and the Rittal Foundation. The shared long-term goal of the trainees, students and retired employees taking part in this planting campaign is to safeguard a healthy forest ecosystem for future generations.

A forest will soon be growing here. "Environment" became the fourth funding priority of the Rittal Foundation in 2022. It addresses the issue of how to actively experience and embrace biodiversity and nature.

The catastrophic floods in the area around the Spanish city of Valencia in the autumn of 2024 met with a global response and urgently needed offers of assistance.

The Hephata Christian welfare organisation's social commitment covers a number of different activities.

Hesse's food banks help supply food for some 110,000 people in need in and around Wetzlar. They also support social participation.

FLG annual donation

Helping out – with 200,000 euros

The annual staff donation from the Friedhelm Loh Group shows how joint efforts translate into practical assistance – locally, regionally and internationally. In 2024, the Group's employees and owner raised a total of 200,000 euros. This is now arriving exactly where people are most in need of support.

Following the disastrous floods in Spain last year, 30,000 euros of this donation helped the Red Cross provide emergency assistance, funding psychological primary care, emergency accommodation and the distribution of vital provisions. The next step is a three-year restoration plan to give affected communities long-term stability.

Görlitz's Christlicher Hospizdienst supports people who are dying, including children, and their families. Our donation means it can organise a very special weekend – a little escape from everyday reality – including a programme for children and parents run with the caring commitment of volunteers.

Hesse's food banks have been a key focus of our support for many years. A total of 40,000 euros – half from the annual donation and half from the Rittal Foundation – is helping to supply food for some 110,000 people and encourage social participation. Packages are distributed weekly throughout Hesse from the central warehouse in Wetzlar – a feat that is only possible thanks to donations.

"Thank you for your donations and for actively showing love for your neighbour," Prof. Loh told staff from his Group of companies. "Many disadvantaged people around the world and in our region need us if they are to have the chance of a better future," he added.

Besides the beneficiaries mentioned above, our annual donation is supporting a further ten charities – Ukrainehilfe Breitscheid, the Debora Foundation India, Hephata Diakonie Schwalmstadt-Treysa, Jumpers Gera, Evangelische Integrative Kindertagesstätte Monheim, Caritas Werkstätten Montabaur, Diakonisches Werk Dillenburg-Herborn, Lebenshilfe Altenkirchen, Oberlausitzer Kinderhilfe Bautzen and Evenzkreis Mühlacker/Wiernsheim.

Debora Foundation

DIGITAL LITERACY FOR A **NEW FUTURE**

Disadvantaged children in the villages around Bangalore are acquiring digital literacy skills thanks to the **Debora Foundation India**, which is making a huge investment to offer new opportunities.

TEXT: SARAH BENSCHEIDT

Getting prepared for the digital world – it sounds mundane, but the goal of the new pilot project initiated by the Debora Foundation India (DFI) has hidden depths and opens the door to completely new ways of life.

"Children living in poverty in India's rural villages have barely any access to high-quality education. The aim of our computer courses is to give them access to digital resources," says Thomas Rajkumar, Managing Trustee of the DFI, who has decades of experience in education and development aid. Building genuine bridges is, he says, the best way to overcome digital divides.

HELPING PEOPLE HELP THEMSELVES

Some of the young participants (in school years 6 and 7) from the villages around Bangalore have to walk for hours to reach these bridges, which don't just span gaps in their education but can also guide them into a new future. As Rajkumar explains, these children would have virtually no chance of acquiring (digital) literacy skills within their families. Their parents, many of whom are day labourers, often have no way of breaking the cycle of poverty on their own. That is exactly why the Debora Foundation endeavours to help people help themselves. It has already set up Educational Activity Centres in the villages, providing tutoring for schoolchildren as well as sewing and cosmetics courses for young women.

BUILDING GENUINE BRIDGES

According to Rajkumar, the specific vision of the new computer pilot project is to improve educational and career opportunities for marginalised young people. This is working out well. Having begun as a one-month course for 24 children – twelve boys and twelve girls – the project has got off to such a good start that it is now to be turned into a permanent programme supported by 50,000 euros from the Friedhelm Loh Group's annual employee donation.

Rajkumar reveals that many parents have been very positive about the impact of the course and that teachers, too, have already reported significant early learning achievements. As for the kids, he says their keen interest has underlined the importance of the programme and its integrative effect: "The pilot initiative has shown huge potential. The children have quickly grasped that digital literacy gives them tools for the rest of their lives. As a result of this enthusiasm, all 24 participants passed the test at the end of the course with flying colours." Amongst other things, this test covered an understanding of hardware, software and Office applications, along with Internet use and digital communication skills.

Building on this success, the DFI is planning to cater to the growing interest by extending the programme to further villages, introducing advanced, more in-depth modules, improving the infrastructure and training capacities – and thus creating digital bridges that reach far and wide. □

New digital skills acquired and recognised – these kids have made the pilot computer programme a resounding success. It is now being expanded.

COOL AND PRACTICAL

Inspiring young people with technology.

All in – apprentices Nick Rosin (above), Moritz Walter (below, left), and Sebastian Hain (below, right).

How do you build a wind tunnel to test vehicle aerodynamics? Clemens Weil (left) and Simon Christ demonstrate how – on a smaller scale.

NATIONALES AUTOMUSEUM THE LOH COLLECTION

KNOWLEDGE AND WONDER

An immersive experience of design and technology – in the Nationales Automuseum, apprentices encounter the **history, creativity, and innovation of automobile design.** The on-site education campus provides inspiration well beyond the walls of the classroom, through workshops with top experts, special learning venues such as the Technikum, and joint projects that offer real "aha" moments.

TEXT: DANIEL GIEBEL

What happens when you make vocational training about more than passing exams? What if it also stimulates heart and mind? At the Nationales Automuseum, apprentices from the Friedhelm Loh Group enjoy technology not just as a subject, but as an experience. They experience history, not just as something to look back on, but as something that inspires. The educational campus that is continuing to take shape around the museum offers an extraordinary learning environment where young talents take on new responsibilities and explore their creativity in exciting projects.

SPARKING ENTHUSIASM

"The Technikum builds on these ideas. It aims to make technology something young people can experience on an intuitive level," says Daniel Wirth, Head of Training at Rittal. Together with his team, he organises project-based training phases during which groups of apprentices from the whole group work on exhibits and other ways of presenting information.

At the heart of it all is the desire to teach about technology – both as an economic and cultural benefit and as a personal opportunity. Prof. Friedhelm Loh, initiator of the museum explains, "I've always been captivated by the daring of Mr Ferrari and Mr Bugatti, and by the technology and design skills of the engineers through the years." Loh adds that it is important to pass on this sense of wonder to young people – not least as an answer to the question of why technical professions are shaping the future now more than ever before.

Whether it's feeling for themselves how different carbon and steel doors are or even developing a wind tunnel, the apprentices learn that technology combines thinking and doing. Project Manager Jan-Frederick Templin and classic car expert Uwe Schüler – after whom the Technikum is named – ensure this is a place where ideas come to life. "It is my honour to get young people excited about technology," says Schüler, who works closely with Prof. Loh on the vision for the museum as a whole.

INPUT FROM A PRO

One highlight for the young people was an exclusive presentation by Prof. Wolfgang Henseler. The design expert, who works with the museum, provided the apprentices with practical examples of the interplay of good design and strong presentation. Drawing on iconic brands such as Apple and Porsche, he explained how strategy, aesthetics, and emotion can turn a product into an experience. His knowledge of AI, experience design, and storytelling was particularly in demand. Apprentice product designer Fenja Hildebrandt, for example, got a real "aha moment" from this workshop. "I feel very inspired. The workshop provided lots of new perspectives that I would like to start exploring right away." This practical focus is very much what the Automuseum is about – same as the Friedhelm Loh Group. □

In Issue 01|2026:

HIGH STANDARDS FOR TOP PERFORMANCE

Przemyslaw Orlik has good reason to be happy. At OREX Rotomoulding, the smooth running of business operations matches the true running of the rotational moulding machines that the company manufactures in Chybie, Poland, for customers around the world. Solutions from Eplan, Rittal and Rittal Automation Systems are part of this success story.

Find out more in the next issue of be top!

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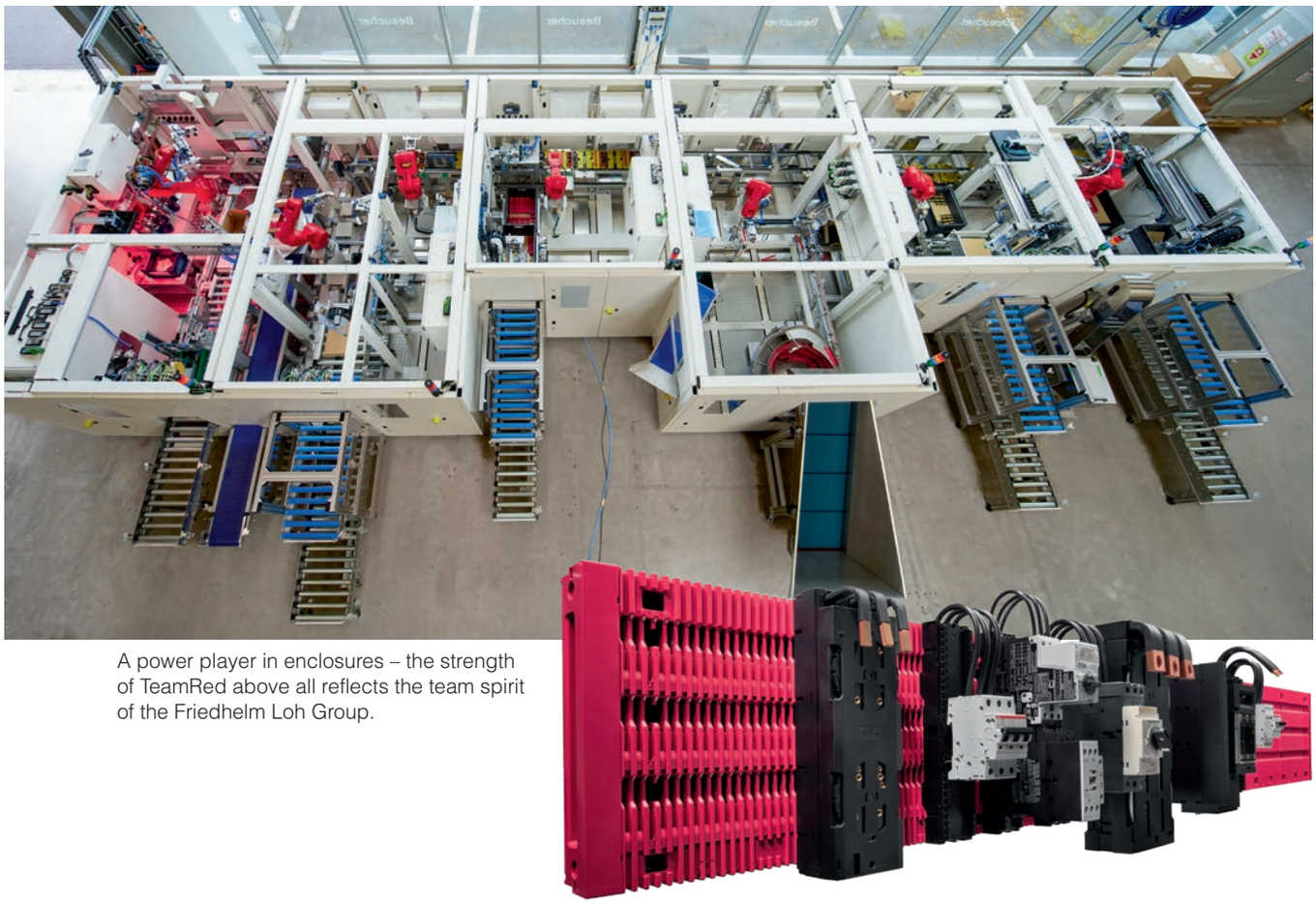
LKH and RiLineX

INNOVATION IN BRIGHT RED



A power player in enclosures – the strength of TeamRed above all reflects the team spirit of the Friedhelm Loh Group.

With RiLineX, Rittal has redefined power distribution in enclosures. The open platform system for 60 mm busbars makes for particularly easy planning, maximum flexibility and rapid assembly. It also sets new standards in efficiency and reliability.

The solution was developed by Rittal and plastics specialist LKH in a joint project. Together, they have created a system geared specifically towards industrial requirements and large volumes from the outset. Some 400 moulds were designed and digitally validated for the project. Two new, highly automated assembly lines at LKH manufacture around 10,000 high-precision components every day.

RiLineX also makes its mark visually. The characteristic red colour of the components is an instantly recognisable sign of innovation in enclosures.

Following its successful international launch at this year's Hannover Messe, RiLineX didn't have to wait long for the next milestone – winning a German Design Award 2025. This award is a clear indication of an innovative solution – but it's only the start … □

A winner in the "Excellent Product Design Energy" category.

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