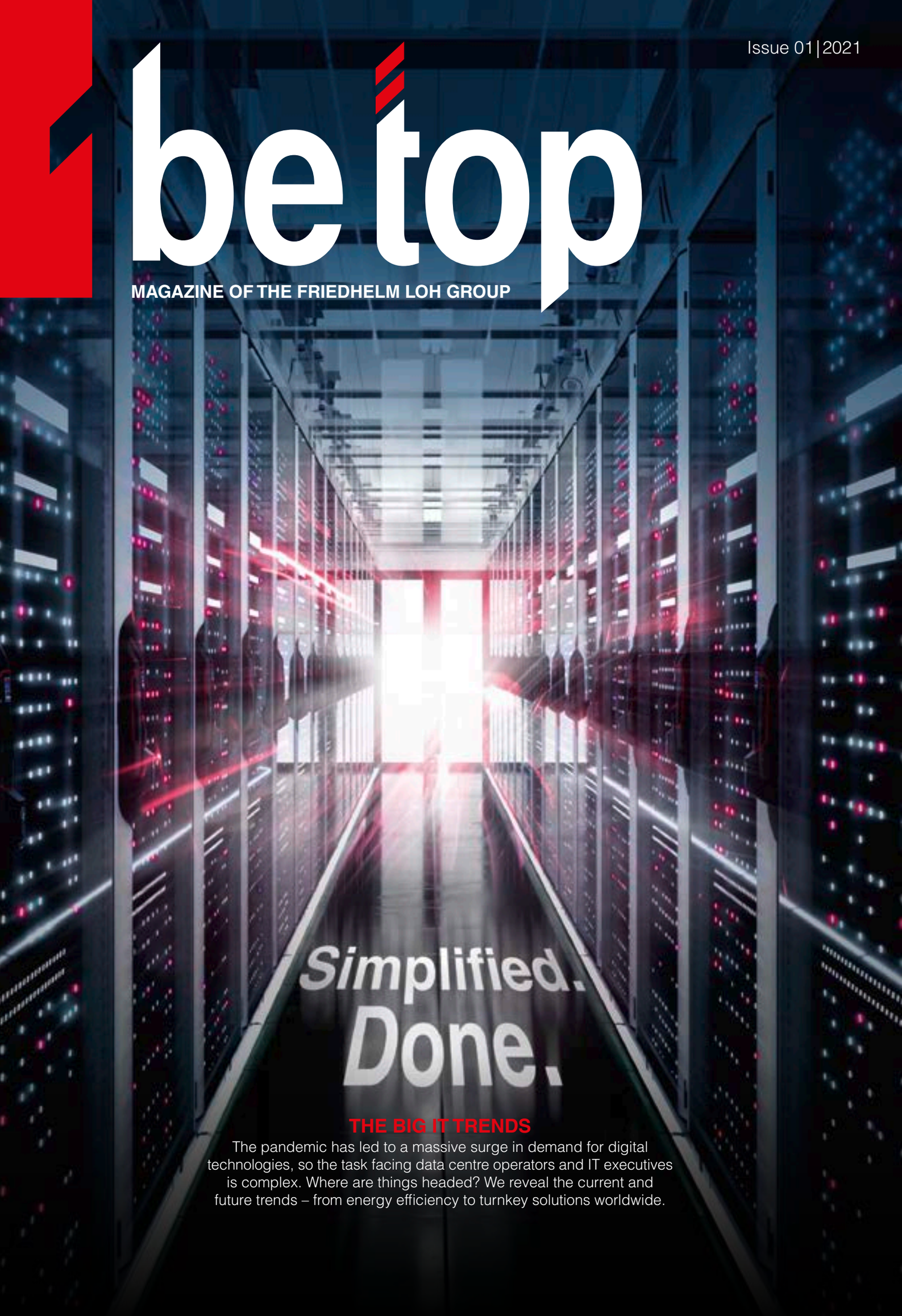
Issue 01|2021

be top

MAGAZINE OF THE FRIEDHELM LOH GROUP



THE BIG IT TRENDS

The pandemic has led to a massive surge in demand for digital technologies, so the task facing data centre operators and IT executives is complex. Where are things headed? We reveal the current and future trends – from energy efficiency to turnkey solutions worldwide.

Simplified. Done. Easy to say?

Dear readers,

We're certainly not living in the simplest of times right now. The challenges we face are huge and complex. The global pandemic is calling into question many things we'd grown accustomed to. No-one can fail to have noticed that technological developments – especially in IT – are taking place faster than before and are ramping up the pressure. If you're not careful, competitors will get the inside track and leave you behind. Speed and flexibility are the new "better" and are taking on new significance. They're becoming the key to success.

Simply DO: Doing something – taking action – is vital. Products and solutions need to be developed even more efficiently, with further improvements to processes and the ability to react. It's all about getting developments up and running faster. The things that work and solve problems right now are what adds value.

Do SIMPLY: Speed is only achieved when products help make solutions and processes simpler, though. The new be top provides a whole host of examples.

Read the cover story to discover how the new RiMatrix Next Generation IT infrastructure platform makes it quick and easy to build data centres and flexibly adapt them to constantly changing requirements. You can also find out about the opportunities offered by our 100 percent green Lefdal Mine Datacenter in Norway.

With Eplan, Rittal and Phoenix Contact as your panel building and switchgear technology partners, machining and assembly operations are even quicker and more efficient. Another exciting development is the new Eplan Platform, which heralds a new era in engineering.

ONCITE from German Edge Cloud – a founding member of GAIA-X and now also a member of the Catena-X Automotive Initiative – is an all-in-one edge and cloud solution for digitalizing your industrial manufacturing processes that can be implemented quickly and ensures data sovereignty.

Be inspired by these and further solutions from the Friedhelm Loh Group. We tell you about new developments, provide specific practical examples and offer tips on creating new possibilities for your business.

Last but not least, accompany us on a journey through time and celebrate 60 years of Rittal – a success story that you have helped us shape.

We're grateful to you for this long and trusting partnership.

Prof. Dr. Friedhelm Loh

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

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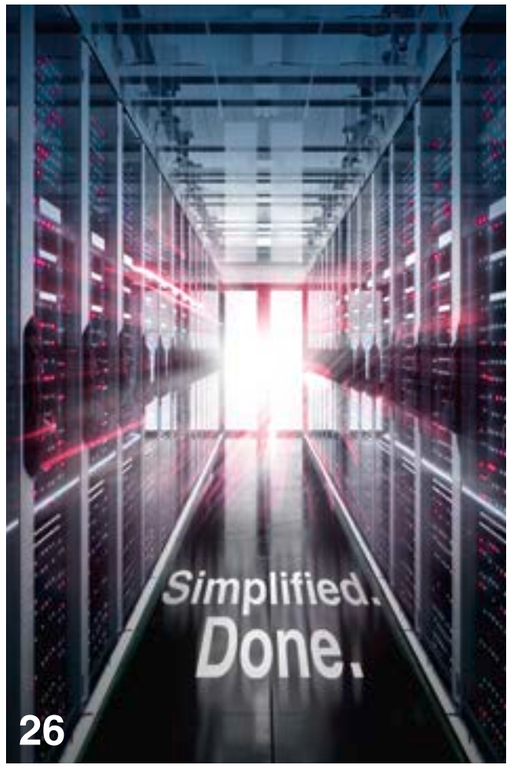

MAKE “IT” SIMPLE
The pandemic has led to a massive surge in demand for digital technologies, so the task facing data centre operators and IT executives is complex. Where are things headed? We show the trends – from energy efficiency to turnkey solutions worldwide!

Please note

To prevent the spread of COVID-19, we should all wear face coverings and keep a distance of at least 1.5 metres from other people. These guidelines are not being followed in some of the photographs you will see here, but this is because they were taken prior to the pandemic.

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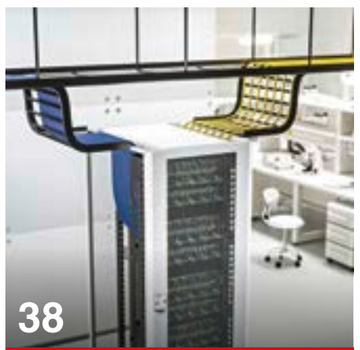

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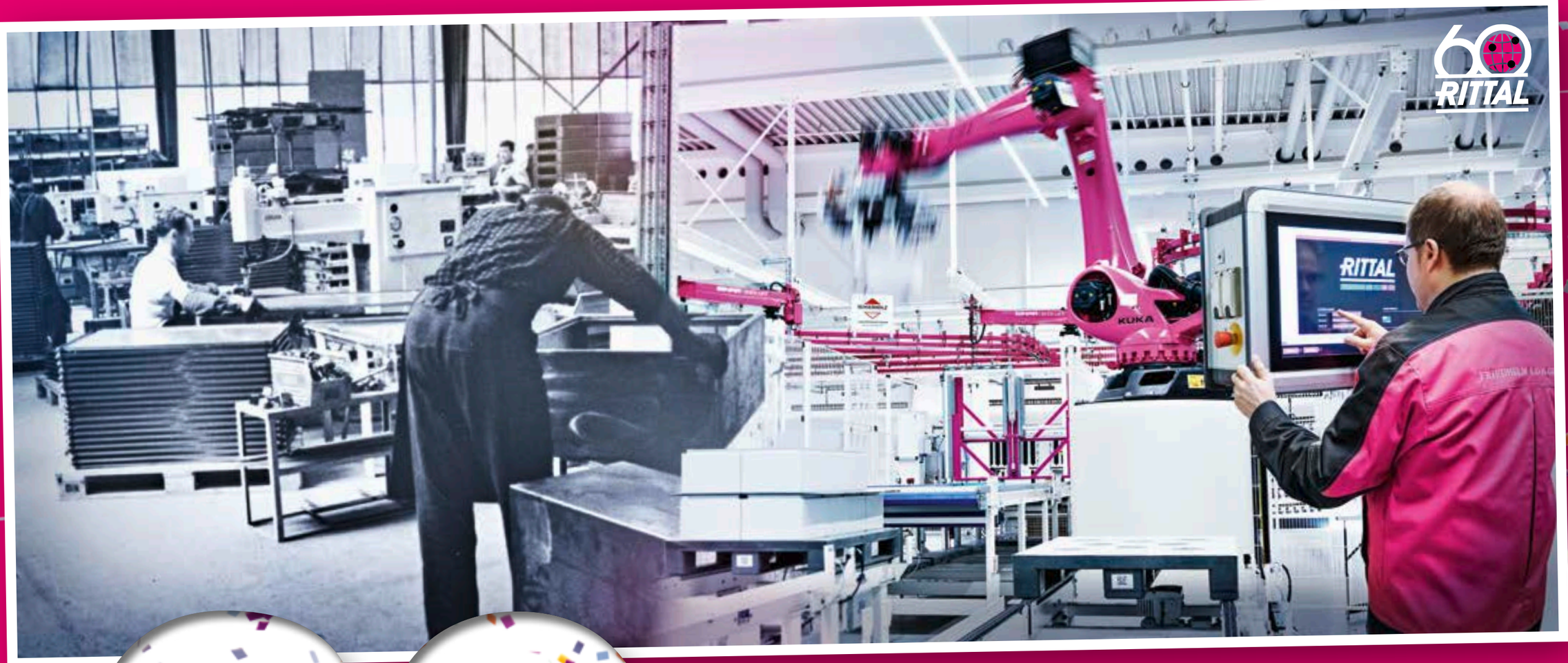
Your opinion matters

Do you have any questions, suggestions, praise or criticism about the current issue? Simply e-mail the editorial team at:
betop@friedhelm-loh-group.com

be top online

Check out the digital version of be top when you’re out and about – for all the stories here and more besides:
https://betop.friedhelm-loh-group.com

60 YEARS OF RITTAL



60 years of Rittal

From steel manufacturer to digital company

Rittal is celebrating its anniversary. In 1961, Rudolf Loh decided to start building series enclosures. The average lifespan of companies 60 years ago was just under a decade, but Rittal has remained a global success story to this very day and is continuously reinventing itself – for its customers, for its staff and for the future.

Text: Sabine Spinnarke and Dr Carola Hilbrand

The company based in the German town of Herborn has lost none of its innovative strength over this long period, nor has it held onto outdated structures – quite the opposite, in fact. Rittal has reinvented itself many times over. Six milestones in its history define the company to this day. Standardisation during the post-war years paved the way for today's fully digitally integrated production. The system enclosure provided a modular system for industry that now extends into the world of IT, software and edge computing. And investment in engineering software is now optimising entire value chains of panel building and switchgear customers. These are just a few examples. Rittal anticipated developments and transformed accordingly – from metalworking business to system supplier and the present-day digital company. A break with old ways of thinking is required for any transformation, and courageous decisions need to be taken.

Rittal has embraced new ways of thinking six times, while still remaining true to its original values. The focus remains on enclosures, but the universe that has evolved around them has now reached cloud level.

Rudolf Loh – a courageous and visionary entrepreneur. In 1966, he and his wife Irene celebrated their silver wedding anniversary. The Loh family is seen here on the way to the anniversary celebration in the company's canteen, to which the entire workforce was invited.

Local base – **global success ...**

1961 is a momentous year in history! John F. Kennedy became the youngest ever president of the USA, Juri Gagarin was the first human in space and, in the village of Rittershausen in the German region of Hesse, a small team embarked on an uncertain future with the creation of Rudolf Loh Elektrogerätebau. Company founder Rudolf Loh had an idea and a great deal of courage. Ignoring the industry's advice, he started the series production of standardised enclosures. This innovation took the market and its customers by surprise, which brought the company great success. The Loh family's inquisitive nature, strong will and creative strength has long since turned the small business from Rittershausen into a global player that now has nearly 10,000 staff and manufactures 15,000 enclosures per day across eight production sites. That's not all the company takes pride in, though. For 60 years, the Loh family's pioneering, innovative spirit has been a prime example of the vitality, strength and global success of German SMEs.

The nucleus of the company – the Schneider weaving mill (above). Demonstration vehicles appeared on Europe's roads from 1970 onwards.

Global player

"This is a fine company."

Barack Obama
at Hannover Messe in 2016, when he was U.S. president

220,000
m² OF PRODUCTION SPACE WORLDWIDE

8
PRODUCTION SITES

58
SUBSIDIARIES

15,000
ENCLOSURES PER DAY

9,700
EMPLOYEES

Six innovations – reinvented **six** times

"We associate Rittal with real people. Over the decades that we've worked together, we've developed a strong bond. Good business requires good relationships."

Martin Ulrich
Head of Industry Sales at
Alexander Bürkle GmbH

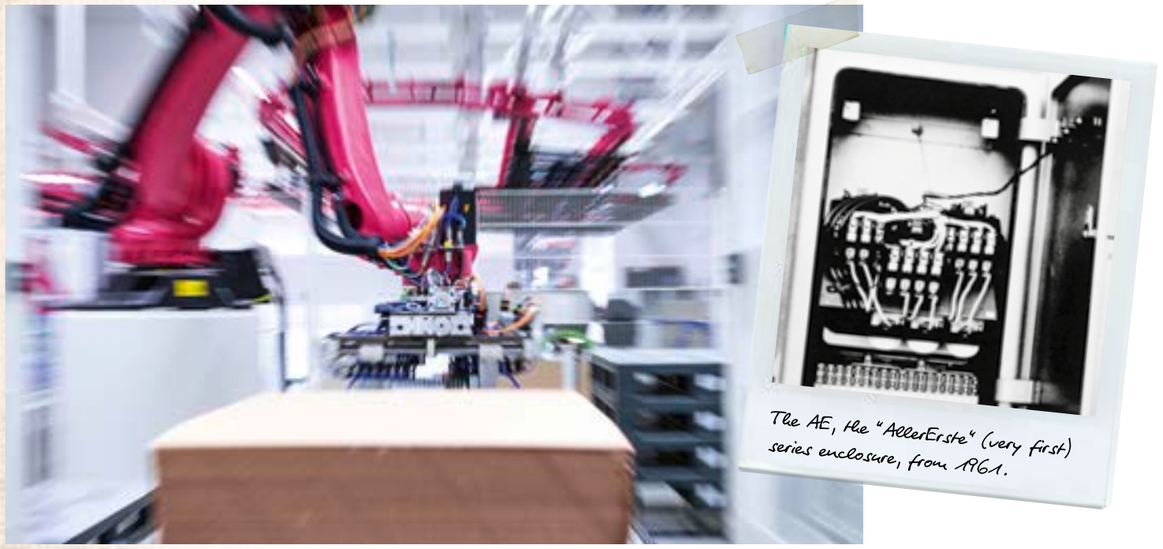
1961

01 // With standardisation: **Simply faster**

Rittal creates a whole new dimension in enclosure manufacturing, with professional series production as opposed to one-off, hand-made sheet metal products

In 1961, Rittal founder Rudolf Loh hit the bullseye with his idea of standardising enclosures to enable series production and delivery from stock. He called the series product the AE, which stands for "AllerErste" (very first). The market was initially sceptical about ordering enclosures from a catalogue, though. Rudolf Loh, Norbert Müller and their small team spent years working to win people over. They were ultimately proved right.

In 1971, Volkswagen started using Rittal enclosures as standard at all its plants worldwide. Rittal now supplies customers across the globe – and in Germany, series products are even available within 24 hours. Using standardisation to make complex things simple – the guiding principle and the inspiration in the early days – remains the driving force behind all innovations, now and in the future. Based on this standard, it is now possible for the successor to the AE – the AX – to be manufactured at the Rittal plant in Haiger in a fully digitally integrated process.



02 // With system technology: **More options**

Rittal takes the enclosure concept to the next stage and lays the foundation for "Rittal – The System."

The AE was available in four sizes, but when industrial automation took off, the Rittal team quickly realised that enhanced flexibility was the order of the day. Enclosures were no longer regarded as rigid units but were split into their component parts. With its RS bayed enclosures, Rittal took the first step towards a system that enabled add-ons and extensions – to make them higher, wider and deeper and include accessories. This coincided with an increase in the power density of the components inside the enclosure, which called for new cooling concepts. Rittal responded by setting up a climate control division and, later on, a power distribution division.

The system concept remains the defining principle to this day. The aim is to create an infinite number of configuration options – based on modularity, flexibility and speed.

1969

1984

03 // With software: **More professional planning**

Electrical planning and enclosure from a single source – Rittal does software, too

A man, a woman and a dog in an old supermarket is how Professor Friedhelm Loh described his first impression of software developers Harald and Renate Wiechers. The small, compact program they had written on one of the first affordable PCs with graphical user interface could be used to draw circuit diagrams.

The team at Rittal immediately saw the opportunity this presented. It was now possible not only to supply enclosures, but also to go one stage back in the plant engineering process – to the design engineers.

Wiechers & Partner went on to become Eplan. Today, the company offers one of the world's leading software solutions for mechanical and plant engineering and enclosure manufacturing. This marked a further milestone for Rittal in terms of its customers' value creation process.

04 // With IT infrastructure:

Better data protection

Rittal moves into a new sector, bridging the gap between industry and IT

The inspiration came from the automotive industry. Could the globally successful PS enclosure being produced at the time not also be turned into a rack for data technology (IT) with appropriate accessories? The answer was yes, which led to Rittal entering a completely new market segment and becoming a new player in information technology. The company is now one of the leading solution providers for IT infrastructures of all sizes – from single racks to entire data centres. With RiMatrix S, Rittal invented the first standardised data centre – a scalable solution including rack, power supply, cooling and monitoring. And with its new Energy & Power Solutions business unit, it is currently once again embarking on new areas of application, such as energy storage systems and electromobility.

1989

05 // With enclosure manufacturing 4.0:

Upping the tempo

As the 4.0 era arrives, Rittal looks beyond panel building and switchgear

In response to Industry 4.0, Rittal initiated a number of changes – at its own plants and those of its customers. The company started by working with Eplan to develop a solutions portfolio for its customers' integrated value creation processes. With the digital twin taking centre stage, and with interfaces between software and automation, panel builders and switchgear manufacturers now have access to an integrated database that makes planning and manufacturing operations more efficient than ever before. This bold approach is continuing, with the aim of integrating everything seamlessly into Industry 4.0. Transforming the company's own production operations involved hundreds of machines and highly complex processes – from ordering and production all the way through to customer service. This courage paid off, and Rittal can now justifiably call itself a digital company.

2012

2019

06 // With edge and cloud computing:

A more digital future

With digitalization, nothing is off the shelf and everything has to be learned from scratch

When digitalizing its new plant in Haiger, Rittal had realised how important edge cloud computing would become to the company and also to other businesses. It worked with German Edge Cloud to develop edge and cloud solutions geared to the needs of industry – housed in a dedicated data centre, trialled in-house and once again designed for standardisation.

German Edge Cloud (GEC) is a founding member of the European data infrastructure consortium GAIA-X and part of the newly founded Catena-X Automotive Network. GEC merged with iNNOVO Cloud, a professional cloud automation company with customers in the banking sector, and with IoTOS, the pioneer of edge computing in production.

"Striving for perfection and innovation is the defining feature of Rittal and its team."

Uwe Pohlmann
Authorised Representative and Department Manager at Blumenbecker Automatisierungstechnik GmbH

"Having a partner like Rittal to help us achieve new innovations resulted in joint growth."

Udo Plenge
Owner of Plenge GmbH

“We all have a responsibility and stand together – with and for the weaker in our society.”

Professor Friedhelm Loh
Owner and CEO of the
Friedhelm Loh Group

1980: The Rittal management team and workforce visit the Hephata Diakonie Evangelical community care centre to make a donation in 1980.

Rittal Foundation

60 YEARS OF COMMITMENT

Initiatives such as the latest annual donation to regional charitable organisations and the special donation campaigns for international aid organisations show that every individual counts. Rittal and the Friedhelm Loh Group have a long tradition of social responsibility – it’s in their DNA and is actively embraced by Rittal owner Professor Friedhelm Loh, his family and the workforce. The Rittal Foundation plays a key role when it comes to social commitment. This charitable organisation has been supporting social, educational and cultural projects since 2011.

IT’S A BIG THUMBS UP FROM US BECAUSE …

“… I found my dream job at Rittal, so I chose the right employer.”

Milena Manderbach
Apprentice at Rittal

“… my decision to join the company was spot-on. I feel very much at home here.”

Felix Klehmet
Head of Operational Services at Eplan

“… I was able to spend five years at Rittal in the USA and am still benefiting from this experience.”

Judith Kötzsch
Head of the Business Development Service at Rittal

OVER
5 million euros
HAVE BEEN DONATED TO GOOD CAUSES
BY FLG STAFF IN RECENT YEARS.

Commitment to schools and the environment – tutorials for schoolchildren and collecting litter in the Ambachtal biotope.

Commitment to people who need help, whether in Germany, Mozambique or India.

“… we do a lot for the people in our local region and ensure no-one gets left behind.”

Friedemann Hensgen
Chairman of the Rittal Foundation

“… we apprentices get the best support you could imagine.”

Jakob Schönauer
Apprentice at Rittal

“… I’m very proud to be one of the first to work in Industry 4.0.”

Maxim Böttcher
Machine operator at Rittal Haiger plant

NEWS

NEWS FROM THE WORLD OF THE
FRIEDHELM LOH GROUP

COOPERATION WITH STULZ

Really cool times ahead

Rittal and Stulz, the leading data centre climate control specialist from Hamburg, are now working together to offer premium data centre solutions worldwide. Stulz's high-performance cold water systems, free cooling systems, side coolers, indoor chillers, consulting activities and service operations are the perfect complement to the Rittal IT infrastructure portfolio.

The new partners are committed to providing top-quality, all-in-one data centre solutions. In addition to offering high quality and safety standards, the solutions IT managers need for their IT infrastructures worldwide must be implemented quickly and have the ability to be tailored to specific requirements. Rittal and Stulz are innovation leaders in this field – both globally and locally. Customers can now obtain their entire IT infrastructure from a single source and benefit from an even wider range of efficient premium precision systems for cooling medium-sized and large data centres. "The family-run companies Rittal and Stulz combine innovative strength with a focus on customers," says Professor Friedhelm Loh. "Together with Rittal, we ensure fast, reliable implementation of IT requirements and an agile service organisation with branches worldwide in over 120 countries," adds Jürgen Stulz, Managing Director of Stulz GmbH.

RITTAL AND SERMES

A partnership spanning half a century

In the autumn of 1970, Rudolf Loh and Robert Schmittheisler – the fathers of the current company owners – signed a cooperation agreement. Sermes, based in Strasbourg, then became one of the first importers to introduce series enclosures made from robust steel of standardised quality from Rittal in the eastern part of France – a real innovation. Fifty years on, the two family-owned businesses offer complete solutions that help their customers move forward. The Friedhelm Loh Group optimises the supply chains of its industrial and IT customers, while Sermes develops and manufactures series and custom electrical solutions. The two company owners and their teams met in Herborn to mark this anniversary and build on their joint vision for the future. "We see particular growth potential in the IT sector," says Dr René Umlauft, Managing Director International Sales at Rittal.

CUSTOMER SERVICE IN THE USA

New modification centre in Nevada

Rittal North America has opened its third modification centre – in Sparks, Nevada – and, by doing so, has further expanded the range of services this facility located in the western part of the country is able to offer. Thanks to a Perforex BC 1008 that drills, taps and mills in a single, fully automated cycle, it will now be able to provide fast, efficient and affordable enclosure modification, assembly and delivery. "As a result, our desire to put engineering decisions and value closer to the customer has become a reality," says Greg Storm, Regional Sales Director (West).

Markus Asch (50) is the new CEO of Rittal International Stiftung & Co. KG and Chairman of the Management Board of Rittal GmbH & Co. KG.

MARKUS ASCH

The new Rittal **CEO**

Welcome! On 1 February 2021, Professor Friedhelm Loh, Owner and CEO of the Friedhelm Loh Group, appointed Markus Asch (50) as CEO of Rittal International Stiftung & Co. KG and Chairman of the Management Board of Rittal GmbH & Co. KG. In this role, Asch is responsible for all areas of business at the world's leading provider of enclosure, power distribution, climate control, IT infrastructure, software and service solutions. He also assumes overall responsibility for Rittal Software & Service (RSS) International, together with Eplan and Cideon. These three companies of the Friedhelm Loh Group offer software solutions, system technology and automation equipment to optimise the processes of their panel building and switchgear manufacturing customers across the board and drive future areas of business.

MANAGER WITH A WORLD MARKET LEADER

Asch is an engineering graduate of Esslingen University of Applied Sciences. He started his professional career at the family-owned company Alfred Kärcher SE & Co. KG, the world market leader for cleaning equipment, where he held various management positions over the past 25 years – most recently, Deputy CEO and CTO. Under his leadership, Kärcher Professional became the clear technology and market leader in the B2B sector. Asch accelerated the development of modular and scalable product and solution platforms. He also successfully aligned the sales organisation to access potential new customers and markets.

HIGHLY DEVELOPED TECHNICAL UNDERSTANDING OF PRODUCTS

"Mr. Asch brings many years of experience in the management of globally successful family-owned companies to this challenging new position. He has a highly developed technical understanding of products, production and solutions and sees himself as a driver of innovation. Placing the focus firmly on customers, Mr. Asch thinks and acts from a global perspective," remarks Professor Friedhelm Loh.

"I'm looking forward to working with Professor Friedhelm Loh, the management team and the employees of this impressive world market leader, and I'm proud to have the opportunity to serve this company and help it develop," says Asch.

EPLAN

Partner network for new chances

FIND OUT MORE

www.eplan-software.com/partner

Kicking off the new year in style. The new Eplan Partner Network (EPN) is now up and running worldwide. Its aim is the **joint development of integrated solutions** to offer customers the best possible support with the challenges they face. The EPN partnership is based on fixed interface support and development targets, **increasing customer benefits** and also improving quality. Key players in the area of automation – such as Bosch Rexroth, B&R, Endress+Hauser, Festo, ifm electronic, Mitsubishi Electric, Phoenix Contact, Pilz, Rittal and Rockwell Automation – are already on board. Software partners including Configit, Contact Software, encoway, Gain, ISD, ISG, keytech, machineering, PROCAD, Quanos and SAE have also joined the new network, and UDMTEK from Korea has become the first member from Asia. Eplan is currently holding talks with other companies. “The EPN maximises the overall benefits of our own solutions and those of our partners in the industrial automation ecosystem for the customers we all serve,” explains Eplan CEO **Sebastian Seitz**. “Together with our partners in the EPN, we are taking our customer-centric approach to a whole new level,” adds **Marco Litto**, Senior Vice President Strategy & Corporate Program.

AWARD FROM RWTH AACHEN UNIVERSITY

Rittal top for market intelligence

According to an international consortium benchmarking study in the autumn of 2020 by RWTH Aachen University’s Laboratory for Machine Tools and Production Engineering (WZL) and the Complexity Management Academy, Rittal is one of the top five companies for market intelligence. A total of 200 businesses from the production industry took part. The aim of the study was to identify success factors for implementing and applying market intelligence. As one of the top performers in this regard, Rittal received the accolade of “Successful Practice Company” from the university.

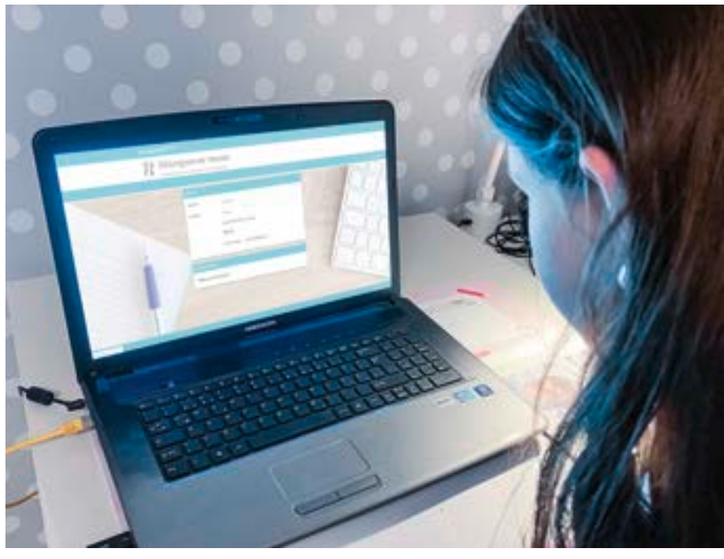
LKH KUNSTSTOFFWERK

Higher protection, lower consumption

ISO certification. LKH Kunststoffwerk’s state-of-the-art production processes ensure the health and safety of staff, while also protecting the environment. It uses energy-efficient production machinery with low power consumption – and that’s now official! The **ISO 45001** (occupational safety), **ISO 14001** (environmental management) and **ISO 50001** (energy management) certification obtained by the plant in Heiligenroth confirms that it applies the highest safety standards and gives top priority to **occupational safety** and health protection. It has also been certified that the **material and production cycles** and the **waste management system** conserve resources, use recycled material and consume power in a very targeted way.

TABLETS REPLACE BLACKBOARDS

German Edge Cloud goes to school



New digital learning. At around 9 a.m. on the first day back at school in 2021, just under 100,000 users simultaneously logged into Hesse’s schools portal. Despite the high demands placed on the platform, all went smoothly – thanks in part to the scalable cloud architecture of German Edge Cloud.

The Hessian Ministry of Higher Education, Research and the Arts and the HZD (Hesse’s central office for data processing and the federal government’s central IT service provider) brought German Edge Cloud on board when it became clear that the remote learning made necessary by the coronavirus pandemic would dramatically increase the numbers accessing the schools portal. The server and application architecture simply wasn’t designed for demands of this kind. The system needed to be placed on a new technical footing to stabilise it for such widespread use and ensure its reliability. German Edge Cloud is using dynamic resource expansion to balance spontaneous load peaks and offer access for as many as 2.5 million users. Data protection and data sovereignty requirements based on the GAIA-X principle have also been complied with. The ministry’s highly positive assessment is as follows: “Since November 2020, the platform has been hosted via German Edge Cloud and has proved its stability, even when demand was extremely high at the start of the year.”

INTERVIEW WITH CIDEON MANAGING DIRECTOR DR CLEMENS WEIS AFTER 100 DAYS IN THE JOB

Vital for SMEs

As a general rule of thumb, journalists assume it takes 100 days to get to grips with a new job, which makes this milestone the ideal time for a first interview. We are keeping to this tradition and speaking to **Dr Clemens Weis**, who was appointed **Managing Director of Cideon Software & Services** on November 1, 2020.

Ralf Steck

Dr Weis, you've been in the job for about 100 days. What have you focused on during this period? Two things were important to me to start with – optimum support for our customers' process chain, and the HR and organisational setup of Cideon Software & Services.

In terms of HR and organisation, I'm continuing the excellent work of my predecessor, Clemens Voegele. He started the process of reorganising Cideon to ensure staff work together more closely and efficiently. That optimises the planning of HR resources for projects. I was also keen to get to know my new colleagues and their individual capabilities.

My second focal point is the process chain. We help our customers become more efficient, and that doesn't just apply to engineering. We're looking to extend our services throughout the process chain. That starts with engineering – our core area of expertise – and continues with production and service operations. We're gradually developing our existing strengths in these new areas.

You've come from a mechanical engineering company, where you were responsible for digitalization. Are you finding this experience useful? I'd like to go a little further back. My time at SAP in Japan had already given me a good insight into Cideon interfaces, the way the company works and its products. With my most recent employer, I gained a great deal of experience relating to customers and applications. Service operations are one example. Imagine you sell your machines globally and one of them somewhere in the world grinds to a halt – the customer affected will want help as quickly as possible. To reduce response times, Cideon has been working on remote technologies that service engineers can use from their current location to help the customer's fitters rectify the problem, which often isn't very serious at all. You simply need plenty of experience to identify these minor issues and resolve them using remote maintenance.

Has coronavirus made remote technologies more relevant? Yes, they're becoming far more significant. All of a sudden, travel has become virtually impossible and we're being asked to find alternative solutions. This is where the experience Cideon can offer comes in. An electronic spare parts catalogue and an online shop enable customers to quickly find and order the appropriate parts. What's more, a digital link between individual machines and their documentation ensures the service engineer who is at the customer's site always has all the correct, up-to-date documentation to hand. New business models can be implemented, such as service and maintenance contracts with short, guaranteed response times based on remote collaboration.

Our task here at Cideon is to provide the technology for such models and help our customers implement it. Our focus on SMEs works to our benefit, because they need simple, efficient solutions. Many solutions on the market are primarily intended for large corporations and are so complex that they are virtually impossible for SMEs to implement.

Can you give some examples of how SMEs can get off to a good start with digitalization? They should begin with simpler solutions rather than complex aspects such as data lakes, IIoT or AI. For example, most machines already have a large number of sensors, which means there is no need to immediately install a highly complex, self-learning IoT solution. Basic alarms that potentially also alert the manufacturer when triggered are sufficient to start with. The next stage is to analyse the situation over time and evaluate this data.

"We're on our way to becoming a system integrator for SMEs."

Dr Clemens Weis
Managing Director of Cideon Software & Services

It's important to create a well-structured, reliable database, use this as a basis for implementing simple solutions and then gradually take things further – at the speed required by the company. Many solutions are in actual fact obvious. The trick is to recognise them. In addition to using our experience to help customers with this, we can also offer solutions ensuring, for example, that the right documentation is automatically provided when equipment is being serviced.

What do these trends mean for Cideon and your strategy? We're expanding many parts of our portfolio by extending our well-established expertise and experience to new areas such as consulting. In parallel to this, we're adding to our range of solutions by utilising our long-standing, close collaboration with SAP and Autodesk to complement the existing solutions with our own software offerings.

How is the coronavirus pandemic affecting your customers and Cideon itself? Companies have now had over a year to adapt to the situation, so coronavirus is having less of an impact on business operations. SMEs in the mechanical engineering sector in particular have always had relatively short supply chains – not due to the risk of a pandemic, but to ensure a faster response. Their suppliers tend to be based in eastern Europe rather than China, so this sector has been less badly affected by interruptions in supply than some others, who were left without input materials from Asia for weeks on end.

The thing I notice most when I walk around the company are the empty training rooms. It's highly unlikely that they will ever be as full as they once were, because here, too, companies are looking to minimise absences, the time spent travelling and the associated costs. Online training is becoming increasingly popular and, accordingly, we will be adapting more and more topics to enable customers to use the training courses online.

What are your future plans for Cideon? Cideon is already extremely well positioned. For two or three years now, we've been transforming into a system integrator, moving away from products and more towards integration and consulting. We will be systematically continuing along this path. In the next few months, we'll also be reorganising our consulting activities. Looking further ahead, the task will be to create additional intellectual property based on the development process and, as already mentioned, establish our know-how and solutions throughout the process chain. This will ensure our organic growth and market success.

Many thanks for this interview, Dr Weis. ■

“We’re demonstrating the feasibility and advantages of cross-company data usage with initial lighthouse projects.”

Dieter Meuser
CEO Cloud & Industrial Solutions
at German Edge Cloud

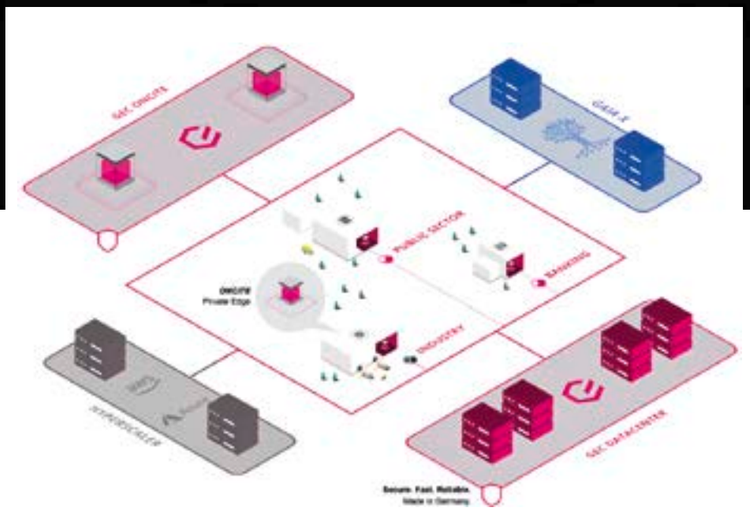
“We’re looking to establish platform standards for sharing data securely and creating new business models.”

Dr Sebastian Ritz
CEO Cloud & Edge Computing
at German Edge Cloud

GERMAN EDGE CLOUD A MEMBER OF CATENA-X

Data security for industry

gaia-x



The sharing of data between companies throughout the entire automotive industry value chain is set to become easier and more secure. The objective of the **Catena-X** initiative is to develop a uniform industry standard. Big players and SMEs alike have joined the newly founded Catena-X Automotive Network, and **German Edge Cloud** is amongst them.

The future of the entire German and European automotive industry is at stake. The creation of open B2B industry platforms is intended to digitalize the sharing of information between OEMs, suppliers and customers – and, by doing so, to make this process simpler and more secure, while also rolling out new, data-driven business models. Uniform industry standards are the prerequisite for this – and that’s where Catena-X comes in.

OPEN NETWORK

The initiative is working on creating an open, scalable network based on GAIA-X for sharing data securely between companies in the motor industry. Members such as BMW, Mercedes-Benz, Deutsche Telekom, Robert Bosch, SAP SE, Siemens, ZF and German Edge Cloud are looking to use the B2B platform that is being set up to significantly boost the German automotive industry’s international competitiveness. The network is designed to be accessible to the European motor industry and its partners, above all also incorporating medium-sized suppliers.

SOVEREIGN INFRASTRUCTURE

The data platform is based on a sovereign infrastructure – GAIA-X – that ensures companies retain full control over any sensitive data that they share in the cloud. As the first big user industry to implement GAIA-X application scenarios, the motor industry, which is in the midst of a major upheaval, is likely to be able to draw particular benefits from the platform.

GERMAN EDGE CLOUD CONTRIBUTES SOLUTIONS

German Edge Cloud (GEC) is an industry pioneer when it comes to data protection and data sovereignty. GEC solutions support particularly data-intensive and performance-critical Industry 4.0 applications. The Friedhelm Loh Group and its subsidiary German Edge Cloud are founding members of GAIA-X. Professor Friedhelm Loh helped initiate the large-scale European project launched by Germany’s Federal Minister for Economic Affairs and Energy, Peter Altmaier, in the autumn of 2019.

ONCITE from German Edge Cloud is one of the products being used to ensure the necessary data sovereignty. This edge cloud data centre with industrial software applications enables real-time capable, production-related applications, while also providing a secure connection to existing cloud solutions. This means data from production and other processes in the value chain can be shared and used securely by different companies. Thereby German Edge Cloud is helping to create a secure European data infrastructure.

STRENGTHENING INDUSTRY

Through its commitment to the Catena-X alliance, German Edge Cloud is aiming to forge a link between GAIA-X concepts and practical application scenarios in the automotive industry. “We’re looking to start by demonstrating the feasibility and advantages of cross-company data usage in the supply chain with initial lighthouse projects focusing on issues such as component traceability. As a medium-sized equipment supplier, we’ll also be actively transferring the concepts to SMEs on the production side,” explains Dieter Meuser, CEO Cloud & Industrial Solutions at German Edge Cloud. “By joining the Catena-X Automotive Network, we’re taking a further key step towards establishing platform standards that apply throughout Germany and Europe for sharing data securely and creating new business models in the industry. This initiative will significantly boost the automotive sector’s international competitiveness,” adds Dr Sebastian Ritz, CEO Cloud & Edge Computing at German Edge Cloud. ■

Technologies such as edge computing, managed cloud services, IIoT and smart MOM create the basis for the digitalization and automation solutions of German Edge Cloud for the manufacturing industry. The aim is to ensure cognitive, resilient production with data sovereignty built in.

FIND OUT MORE
German Edge Cloud
www.gec.io/en

CREATING IIOT ARCHITECTURES

IIoT in manufacturing – but how?

The future of production lies in manufacturing facilities and logistics systems that – ideally – organise themselves without any human intervention. A great many companies are aware of the need for action in this area, but the relevant solutions often still seem somewhat abstract. **German Edge Cloud (GEC)** is showing what an integration and migration strategy looks like.

Manufacturing processes of this kind can benefit from IIoT-based system architectures that process mass data from machinery and feed this into industrial real-time analytics and manufacturing operations management – MOM – systems. The latter consolidate all production processes and offer services for holistic manufacturing management. “An IIoT-based architecture of this type can be efficiently created using an edge appliance such as ONCITE – hardware plus software – combined with managed services. This enables factory operators to focus on their core business and benefit from a high level of digitalization, without needing to have the necessary know-how or resources themselves,” explains Dr Sebastian Ritz, CEO Cloud & Edge Computing at German Edge Cloud.

Existing applications can run on the platform and be combined with new ones. Separate machine data islands are merged and homogenised. A flexible software system controls the production facilities. Rigid linear concepts are thus replaced by modular manufacturing with a flexible design. The new Rittal plant in Haiger shows what this can look like in practice.

RITTAL SMART FACTORY

The Haiger plant manufactures up to 8,000 compact and small enclosures per day in a highly automated process, with over 250 networked high-tech machines spread across 24,000 square metres. The various machines and handling systems communicate with each other and with higher-level control systems. A total of 20 automated guided vehicles (AGVs) take care of transport operations at the plant. Packaging, labelling and handover to the Global Distribution Centre next door are also automated, networked processes.

Solutions from the Rittal subsidiary German Edge Cloud help make this smart factory possible.

Up to 18 terabytes of data a day from 250 machines and systems plus 20 automated guided vehicles at the Rittal plant in Haiger can be used to create value thanks to ONCITE.

Moritz Heide, Rittal: “Excellent transparency and control options across all lines and systems are resulting in efficiency improvements.”

TRANSPARENT MANUFACTURING

A live dashboard system developed by GEC, based on the edge cloud appliance ONCITE, enables the entire production operation to be monitored, with rapid intervention if necessary. Data and analyses relating to the current situation and production planning are provided, and warnings are displayed in the event of potential problems.

“We recently recorded a fault on the packaging line. Thanks to the live dashboard system, this was rectified in less than a minute,” says Moritz Heide, Head of System Maintenance and Work Preparation at the Rittal plant in Haiger. “That creates transparency and gives us control options across all production lines and systems, which results in big efficiency improvements,” he continues. The next step being planned is to link SAP ERP to ONCITE so that Rittal can see the order situation and display availability details.

“We’re also using a GEC data analytics solution to create the basis for predictive maintenance – a further key step towards autonomously controlled production,” explains Bernd Kremer, Head of ONCITE Industrial at German Edge Cloud.

The GEC solutions are already proving themselves within the Group, and are also increasingly being used in the industry. One driving force behind this development is the partnership between German Edge Cloud and IBM. ■

GEC AND IBM

Off to a flying start with IBM

IBM has enhanced the ONCITE industrial edge appliance with its Cloud Pak solution. This results in faster commissioning for industrial users and also more flexible integration of the appliance into all control levels in the manufacturing process.

The initial IBM Cloud Pak modules being used address OT-IT integration. IBM’s Operational Decision Manager is also being put to good use. It enables non-IT staff to control actions and data flows on the shop floor using business rules. All operational data (OT) is recorded and standardised with the IT system data before being made available to the smart MOM system.

“Companies themselves require no extensive expertise.”

Dr Sebastian Ritz
CEO Cloud & Edge Computing at German Edge Cloud

This process is based on Red Hat Open Shift, meaning that components provided by GEC and IBM – and also third-party solutions – operate in a cutting-edge container, automation and virtualised environment as new manufacturing IT. It gives customers the flexibility to run their applications either locally or in the cloud. “By using hyperscale technology, production companies quickly benefit from a high level of digitalization in their manufacturing operations, without having to acquire extensive expertise themselves. GEC and IBM provide IT infrastructure that matches the production requirements, investment plans and data sovereignty demands, leaving factory operators to focus on their core business,” says Dr Sebastian Ritz, CEO Cloud & Edge Computing at German Edge Cloud. ■

German Edge Cloud and IBM are using “ONCITE powered by IBM” to address the manufacturing industry’s digitalization needs with relevant shop floor functions as an all-in-one hybrid cloud solution.

MAKE IT SIMPLE

The coronavirus pandemic has led to a massive surge in demand for digital technologies. However, at the same time, companies have to slow down the pace of IT, postpone projects and drive on sight. All in all, the task facing data centre operators and IT executives is complex. They need to find solutions that satisfy technical requirements and do so cost-effectively and quickly while also ensuring their organisation is well prepared for the future. On the following pages, we take a look at some studies and listen to some IT experts from Rittal who have a good idea of what is happening in the market. There are five trends that show where things are headed and what steps can be taken right now.

Text: Stefan Mutschler, Hans-Robert Koch

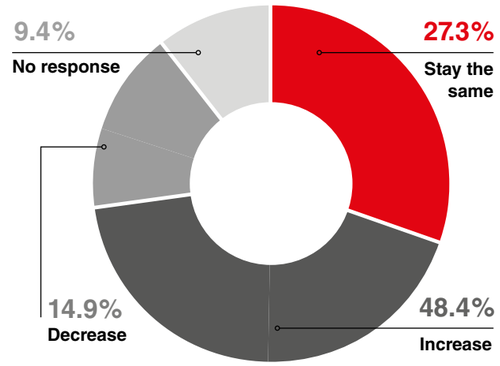
The coronavirus pandemic has held the world firmly in its grasp for around 15 months, and although the arrival of vaccines hints it might soon be coming to an end, one thing is clear: It will leave deep and lasting traces on almost all aspects of life – including IT.

Thanks to working from home and social distancing, IT is attracting a level of attention it has never experienced before. Despite the uncertainty that continues to cloud the economic outlook, IT budgets are set to rise yet again in 2021, albeit less steeply than they did in the previous year. Almost nine out of ten organisations aim to make investing in further digitalization a top priority. This is borne out by analysis results from the latest IT trends study by Capgemini, in which a total of 144 IT and specialist executives from major companies and authorities in Germany, Austria and Switzerland took part in September and October 2020.

“The challenges in IT are huge. What’s needed are solutions that fit the current technical and cost-efficiency requirements perfectly, can be made available quickly, and safeguard the future.”

Uwe Scharf
Managing Director Business Units
and Marketing at Rittal

HOW WILL THE IT BUDGET FOR 2021 CHANGE COMPARED TO THE 2020 BUDGET?



Basis: All those surveyed = n
Source: IT trends study by Capgemini, Sept./Oct. 2020

Just under half of the companies surveyed (48.4 per cent) want to increase their IT budgets, although this proportion is not quite as high as the previous year (63.1 per cent). The number of companies intending to reduce their IT expenditure has remained constant at 15 per cent. However, this has less to do with strategy and more to do with an existential necessity the long lockdowns have caused in many companies.

CONSULTING EXPERTISE IN DEMAND

All the same, requirements and demand still exist in terms of project business. “What is striking is the clear growth in demand for consulting expertise,” points out Konstantin Bobyliov, a data centre specialist and Head of the Rittal Competence Center in Lithuania. Despite the pandemic, new data centre projects are still being launched in places such as Eastern Europe and the Baltic states. This puts the expert in a better position than ever before to apply his know-how as an Uptime-accredited tier designer. As Bobyliov explains, the economic fallout of the pandemic means it is more important than ever for companies to make the right decisions when it comes to new projects. Having a holistic overview of all the associated conditions and the insight that comes from many years of practical experience with scalable, efficient cooling solutions, for example, goes a long way towards avoiding errors in data centre planning and developing future-proof, cost-effective solutions.

THE FIVE RITTAL IT COMPETENCE CENTERS

Engineering excellence

The Rittal IT Competence Centers stand for comprehensive expertise and many years of experience gained through numerous international IT projects.

- Uptime and IPMA certified engineers and project managers
- Project planning in Germany based on DIN EN 50600
- Concept development by tier designers who are accredited by the Uptime Institute
- Planning certainty thanks to extensive experience and a broad product portfolio
- Professional support for IT projects that spans all phases

IT Competence Center
Engineered Excellence

TREND 01

ENERGY EFFICIENCY STILL A LONG-RUNNING ISSUE

In 2018, data centres in EU member states consumed 76.8 terawatt-hours of power, equating to around 2.7 per cent of total energy consumption. That was the finding of a study published by the EU Commission at the end of 2020. According to this study, the increase in energy consumption between 2010 and 2018 was nowhere near as high as many had predicted in 2010. The reason cited for this lower energy consumption is the clear progress that has been made in improving energy efficiency. Nonetheless, the study claims that advancing digitalization and particularly the increasing availability of cloud services will cause energy consumption to increase by another 21 per cent to reach 92.6 terawatt-hours by 2025.

While cloud data centres accounted for 10 per cent of the total energy consumption of EU data centres in 2010, the study found this share had grown to 35 per cent by 2018. It is set to rise to around 60 per cent by 2025. This also shows where the biggest growth potential lies for data centres. The proportion of small edge data centres that are needed on-site will also grow considerably in the future. By 2025, edge data centres could account for 12 per cent of the energy consumption of data centres in the EU. Over recent years, there have been huge improvements in the infrastructure efficiency and PUE (power usage effectiveness) of data centres. However, the potential for further energy efficiency gains is shrinking as the technology approaches its physical limits, and tapping into that potential is becoming an increasingly complex task, too. That is why energy-aware software development will play a key role in the efficiency of cloud computing, primarily when it comes to computing-intensive applications such as blockchain technologies and AI.

All the same, as the EU Code of Conduct on Data Centre Energy Efficiency makes clear, there will still be a range of additional, very effective approaches for curbing the energy consumption of data centres.

THE MOST COMMON APPROACHES ARE:

- Using cooling systems that are more efficient
- Reusing heat that is generated, for instance for district heating systems
- Virtualising software, achieving optimum utilisation of server capacity
- Ensuring all components work together on an energy-efficient basis
- Using renewable energy sources to power data centres
- Building data centres in regions with a cold climate

"In many data centres, cooling still accounts for up to 40 per cent of overall energy consumption. Energy-efficient cooling concepts are therefore critical when seeking to run a data centre on an economical and environmentally friendly basis," explains Michael Nicolai. The primary problem is still the need to dissipate the heat that is generated, which is why there is a strong trend towards indirect free cooling, particularly in combination with adiabatic evaporation cooling (cooling based on the evaporation of water). Air-cooled climate control technology also continues to dominate. In the future, liquid cooling such as chip cooling will be used where air cooling is no longer able to meet the needs associated with high power densities, such as in hyperscalers and colocation data centres.

↗

Energy consumption of all EU data centres by 2025

21 %
increase to 92.6 terawatt-hours

60 %
from cloud data centres

12 %
from edge data centres

Source: EU Commission, end of 2020

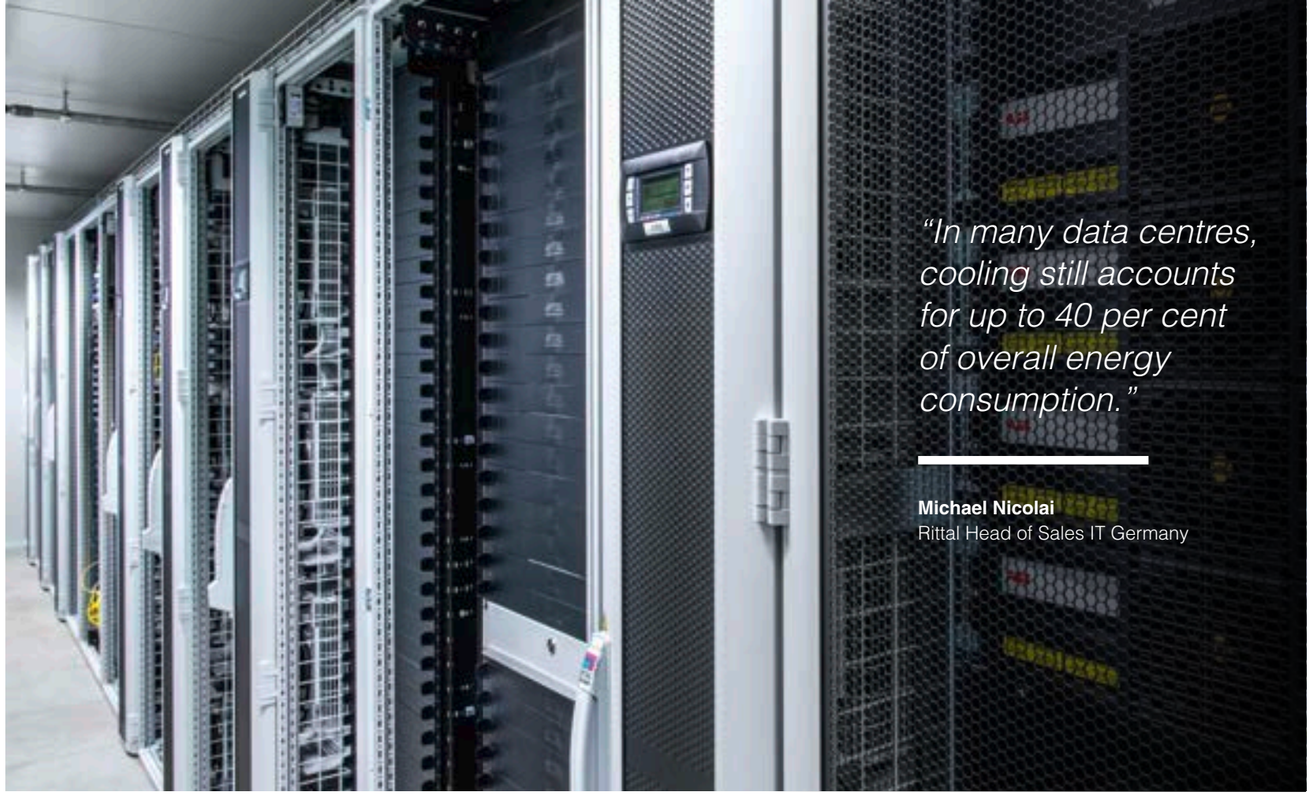
100 MW

of installed performance planned for the next few years in Lefdal Mine Datacenter

Andreas Herden
CSO – Lefdal Mine Datacenter

SCALABLE COOLING TECHNOLOGY

"Data centre operators prefer modular solutions they can use to plan and implement an energy-efficient IT infrastructure quickly and flexibly as appropriate to requirements. What they want is scalability," explains Nicolai. The sales executive is confident that the new, open IT infrastructure platform from Rittal – RiMatrix Next Generation (see page 40) – meets these needs. It can be used to implement air, refrigerant or water-based cooling solutions, and hybrid versions, too. It is suitable for rack, bay and room climate control, as well as direct chip cooling solutions for demanding high-performance computing (HPC) applications. The new platform's modular concept is rounded off by added cooling versatility for efficient, high-precision climate-control solutions with a free-cooling function and adiabatic technology from Stulz.



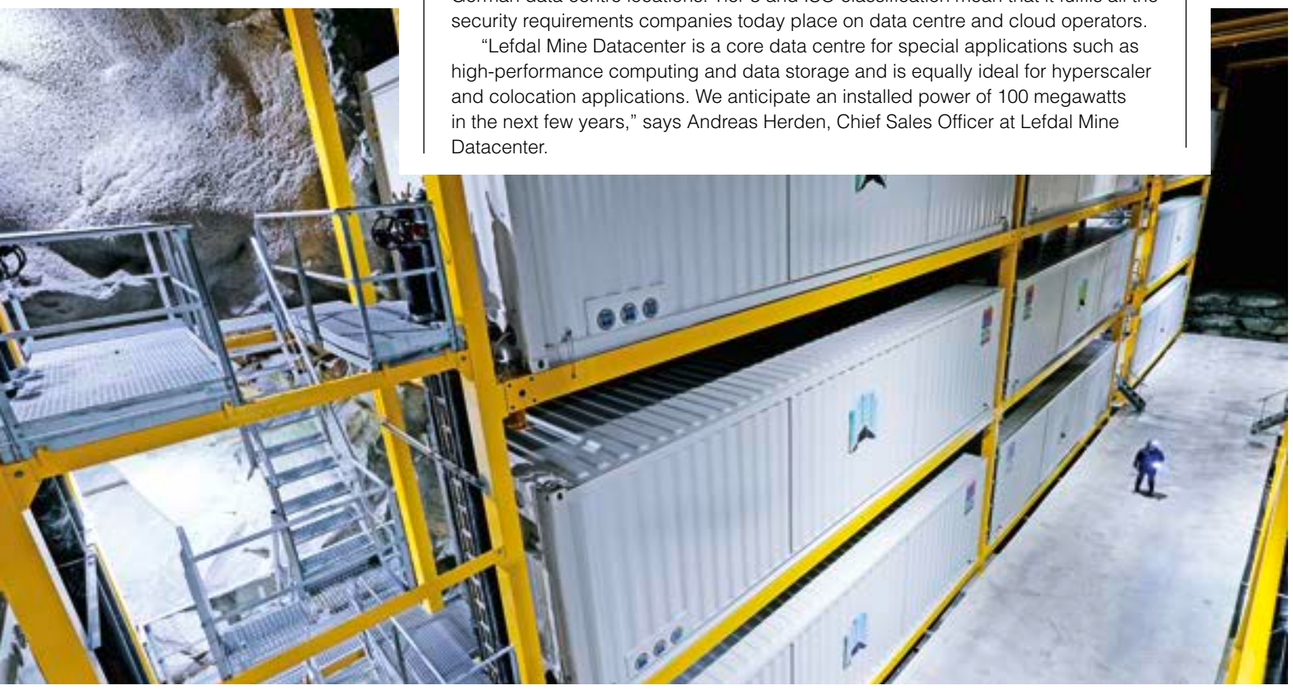
"In many data centres, cooling still accounts for up to 40 per cent of overall energy consumption."

Michael Nicolai
Rittal Head of Sales IT Germany

Lefdal Mine: Green data centre

A decommissioned mine in Norway is home to the Lefdal Mine Datacenter. Based on a modular overall concept, the data centre is spread over five levels, offers 120,000 square metres of floor space and can potentially co-locate up to 10,000 racks or 1,500 containers. The use of renewable power and seawater cooling ensures exceptional energy efficiency, with a PUE of 1.15. Its electricity is entirely from renewable sources. IT components are cooled by means of water from a nearby fjord. All this ensures that electricity costs are considerably lower than they are at German data centre locations. Tier 3 and ISO classification mean that it fulfils all the security requirements companies today place on data centre and cloud operators.

"Lefdal Mine Datacenter is a core data centre for special applications such as high-performance computing and data storage and is equally ideal for hyperscaler and colocation applications. We anticipate an installed power of 100 megawatts in the next few years," says Andreas Herden, Chief Sales Officer at Lefdal Mine Datacenter.

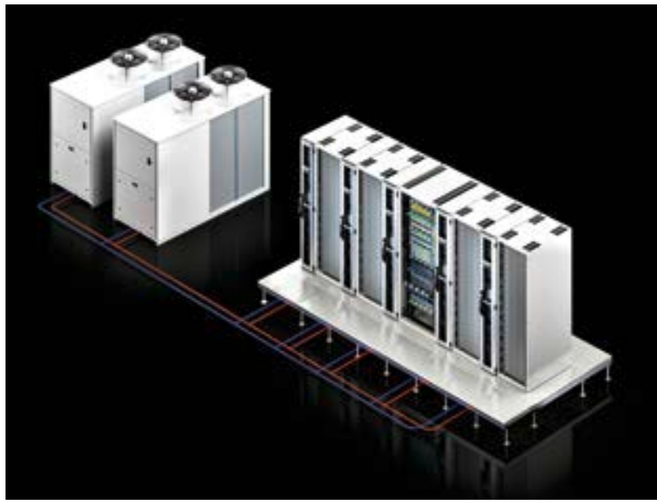


RITTAL

STULZ
CLIMATE. CUSTOMIZED.

The new cooling expertise – for all IT scenarios

Rittal and Stulz are working together worldwide on data centre infrastructure solutions, providing entire IT infrastructures from a single source. Customers benefit from a broad offering of premium precision cooling systems, with high-performance cold water systems, free cooling systems, side coolers and indoor chillers from Stulz providing the perfect complement to the comprehensive IT infrastructure portfolio from Rittal. This portfolio includes IT racks, cooling technology and power supply systems, as well as software solutions for data centre management and IT monitoring. On top of that, data centre operators can rely on a global service offering and optimisation services that span the entire IT life cycle. The end result is a package of data centre solutions that provides certainty for investments and for the future.



Enough space for data centre cooling? The Rittal LCP (Liquid Cooling Package) uses external chillers to achieve maximum cooling performance in the smallest of spaces. The advantage is that it frees up more space for active components.

TREND 02

MODERNISATION AIMS FOR CRISIS RESILIENCE

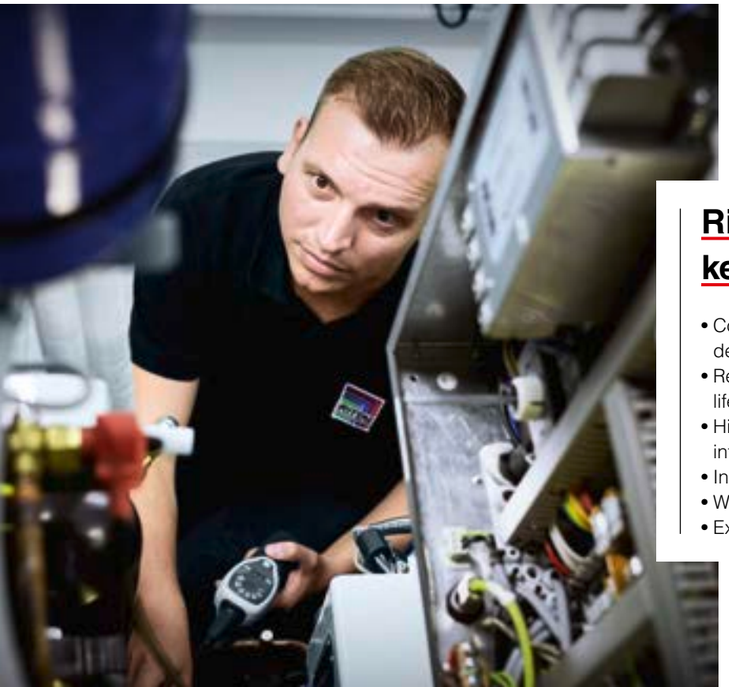
Data centre managers are often known for being far-sighted. All the same, the pandemic took them all by surprise. Many now have a bad feeling that another pandemic will occur – or perhaps even several at the same time. However, better crisis resilience requires extensive modernisation measures – and not just in terms of technology, but most importantly on an organisational and structural level, too. According to a study carried out in July 2020 by the Uptime Institute, many companies have already made pandemic awareness and planning part of their business continuity framework.

Almost all the participants in this study (94 per cent) said they will improve their readiness for a pandemic and their business continuity planning. Some of the procedures and processes planned for the medium term require changes to technology and strategy – combined with bigger investments. Among the measures that almost every data centre operator wants to put in place quickly are shorter cleaning cycles, health screening for visitors, more frequent replacement of air filters and bigger spare parts stores. All these elements result from a heightened awareness of pandemics and form part of modified processes. Some – primarily in the USA – are even planning to set up emergency on-site accommodation and food stores.

Data centre operators also want to improve their plans for immediate measures so they can be ready to go on alert at any time. This includes, for example, rapidly implementing staffing plans, organising fuel stores and modifying maintenance processes. They also aim to participate in regular training on how to fight and respond to a pandemic. However, all that falls under just a single category – "More and better pandemic planning". The Uptime Institute has identified many more areas where data centre operators want to modernise, including:

- More automation and remote administration
- Improved local site resilience
- Increased distributed fail-safe operation/ disaster recovery
- More extensive use of ready-made solutions
- Switching from planned to predictive maintenance
- Changing procurement and supply chain guidelines

Few of these changes seem revolutionary, but taken as a whole they represent a new phase in the maturity of the data centre sector. In line with the long-term trends, data centres are becoming increasingly automated and more resilient, making wider use of remote operation and putting in place close monitoring and supervision systems. The services that keep IT infrastructures operational at all times and ensure they run reliably also play a big part in enabling data centres to better cope with crises. This is where Rittal IT service offers in-depth expertise, rapid response times and the highest standards of support – throughout the entire data centre life cycle.



Rittal IT service – keeping things running!

- Comprehensive support, from concept development to after-sales service
- Reliable support for IT systems based on life cycle management
- Highly skilled service engineers and infrastructure specialists
- In-depth expertise including manufacturer know-how
- Web-based and automated service processes
- Excellent availability of original spare parts

Turnkey data centres in a container

Demand for CPU and storage capacity is rocketing, which means that more and more servers and storage systems are needed, while the floorspace available for IT infrastructure has barely changed. Turnkey data centres in a container – Rittal Data Cubes – offer an ideal solution. These standardised systems can be installed quickly and tailored to customer requirements.

TREND 03

STANDARDISED TECHNOLOGY IS TAKING CENTRE STAGE

The use of renewable energies is increasingly becoming compulsory for data centre operators, and particularly for hyperscalers. A large data centre set up close to a wind or solar farm will benefit from clean energy that doesn't need to travel far. However, there is another factor that could come to the fore in the future. Since data centres generate a lot of heat, it would make sense to build them close to infrastructures that can utilise that heat, such as hothouses and aquaponic facilities. When a data centre is equipped with water cooling systems, the warm water these produce, which reaches around 60 degrees Celsius, could be used to heat nearby buildings, for example. Green IT experts at the Borderstep Institute in Berlin have calculated that, in theory, a tenth of the heating requirements in Frankfurt – one of Germany's data centre hotspots – could be met today using waste heat from local data centres.

OPEN COMPUTE PROJECT (OCP)

Large hyperscalers such as Amazon (AWS), Google and Microsoft are making ever greater use of an open standardised technology for this kind of purpose. As a result, Open Compute has been catapulted to centre stage. Rittal is a member and technology driver in the Open Compute Project (OCP), which is redefining hardware and making it more efficient, flexible and scalable. Numerous technological pioneers have come together as part of the project to collaborate on dismantling the black box of proprietary IT infrastructures. The aim is to achieve a wider selection, better adaptability and cost savings. Whereas, in the past, hyperscalers used sometimes very different technology in their various data centres, they are now focused on end-to-end harmonisation. One trend that addresses both the lack of space in data centres and the issue of energy consumption is the use of DC technology. This helps eliminate the use of bulky power packs while increasing energy efficiency.

OPEN COMMUNITY®

Rittal is a member of the OCP community

Where DC meets AC

The Open Compute Project (OCP) aims to reduce investment and operating costs, energy consumption and the environmental impact of data centres through fully standardised IT architectures. OCP is helping run homogeneous and scalable data centres, optimise IT cooling and achieve additional cost benefits in data centres. Rittal is a member of the OCP community and offers standardised racks in the current OCP design.

TREND 04

THE DEMAND FOR RACKS IS ROCKETING

“On its own, manufacturing racks isn’t enough these days. Hyperscalers want to make sure worldwide demands are met. They expect the right kind of logistics and solutions that are available globally.”

Martin Kipping
Vice President Datacenter at Rittal

OEM business is experiencing a real boom. “The demand for IT racks is rocketing,” says Thomas Schreiner, a Key Account Manager at Rittal. “Hyperscalers are seizing the opportunity to expand their market position and are safeguarding infrastructure projects through the global procurement of IT products.” Racks are being fully configured by integrators before being “slotted into” data centres as finished products. The primary aim is operational speed. System integrators are supplying turnkey solutions that are tailored precisely to the needs of hyperscalers. Rittal scores highly in this area for two reasons. The first is that the company supports mechanical standardisation at rack level. “We are the leading development partner and rack manufacturer in this area for the big OEMs,” points out Schreiner. The second is that Rittal has a global footprint with international production facilities and a worldwide logistics network. Martin Kipping, Head of the Global Datacenter Project at Rittal, explains: “On its own, manufacturing racks isn’t enough these days. Hyperscalers want to make sure worldwide demands are met. They expect the right kind of logistics and solutions that are available globally.” Corona has increasingly brought these requirements to light.

RIMATRIX NEXT GENERATION

Schreiner cites RiMatrix Next Generation as the perfect example of the latest newcomers among the globally available solutions: “RiMatrix Next Generation builds on the principle of an open system platform. Thanks to its modularity and flexibility, it creates the basis for an IT infrastructure that can be configured to suit specific regional and international requirements.” Racks, power distribution, cooling, monitoring and security are all perfectly coordinated. It is also the first IT platform to support the use of OCP direct current technology in standard alternating current environments.

8,000 racks for Chindata

Rittal is helping data centre operators in China design new data centres and build them quickly. These include the Chinese cloud and data centre provider Chindata, which has set up a new data centre in Guanting. The data centre covers an area of more than 130,000 square metres and has an IT capacity of up to 16 megawatts, making it one of China’s largest data centres. Rittal installed a modified rack system with more than 52 height units in the new hyperscale data centre.
Hot aisle containment with indirect, adiabatic cooling is being used to cool the IT systems so as to optimise energy efficiency. Rittal has fitted more than 8,000 racks and over 250 hot aisle containment units in the data centre.

RiMatrix Next Generation – for faster IT

IT managers realise they will constantly be faced with new, as-yet unknown challenges in the future. They must be able to respond faster than ever and create data centres that offer a high level of flexibility for the future. This is why Rittal has developed the new RiMatrix Next Generation IT infrastructure platform. “During the development process, we thought ahead and considered the ability to adapt to diverse and constantly evolving requirements,” says Uwe Scharf, Managing Director Business Units and Marketing at Rittal. The result is an open platform system that is unique in the world and ideal for establishing data centres of all performance classes flexibly, reliably and fast, not to mention comprehensive consulting and services throughout the entire IT life cycle.

FIND OUT MORE

Cooling systems from RiMatrix Next Generation from page 40.

“Together with partners, Rittal offers a range of new plug-and-play IT solutions for edge data centres. These guarantee secure, efficient and powerful IT applications no matter where they are located – in factories, warehouses or offices.”

MARCUS FISCHBACH
Head of Strategic Alliances at Rittal

TREND 05

CUSTOMERS EXPECT TURNKEY SOLUTIONS WORLDWIDE

Another trend is the trade in solutions. “Customers aren’t just asking for products, they are increasingly looking for solutions – for edge data centres, for instance,” explains Markus Fischbach, Head of Strategic Alliances at Rittal. Edge data centres are decentralised IT systems that deliver computing power directly to the location where the data is generated. They are situated in the immediate vicinity of the data sources – which helps ensure exceptionally fast initial data processing – and are also linked to cloud data centres for downstream processing. The primary drivers of edge computing are the Internet of Things (IoT) and Industry 4.0.

It is crucial that edge systems can be implemented quickly and easily. The ideal scenario is for the manufacturer to supply a turnkey, ready-assembled system complete with cooling unit for plug-and-play connection to the power supply and network technology. Edge system operation should also be automated and largely maintenance-free so as to minimise running costs. This requires comprehensive monitoring that covers the power supply, cooling, fire detection and extinguishing. To safeguard the edge data centre from external influences, it can be established in a room-in-room environment or in a micro data center. A security room of this kind offers maximum protection in the event of fires or highly contaminated surroundings.

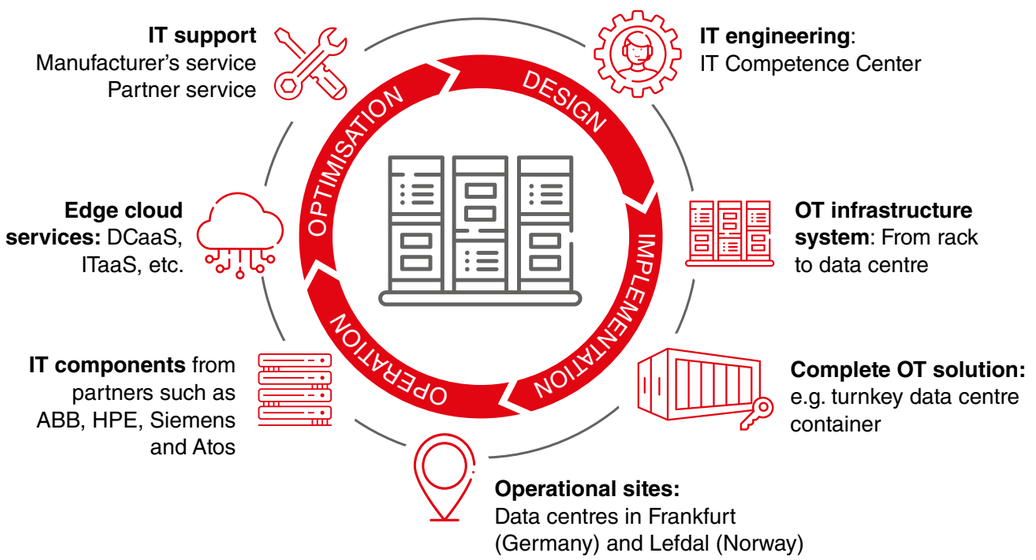
EDGE – COMPLETE, FAST, WORLDWIDE

To ensure edge solutions can be supplied as a complete package, quickly and worldwide, Rittal has worked with other companies to establish a global network of partners. “Whether the customer is a hyperscaler, a colocation data centre or an enterprise – a finely coordinated network of partners ensures tailor-made turnkey solutions, preconfigured components, delivery and support,” says Fischbach. This partner network incorporates system integrators and resellers, global market-leading manufacturers and consulting companies such as ABB, HPE, Siemens and Atos. These partnerships make sure customers can get everything they need from one place. “The result is a predefined, standardised complete plug-and-play edge solution that can be supplied, if required, ready to go and with additional active IT components and as-a-service elements. This safeguards the success of new, decentralised IT infrastructures and makes it easy to take the first steps in edge computing,” sums up Fischbach.

Rittal IT partnerships – like those with ABB, HPE, Siemens and Atos

Strategic alliances with big-name international market leaders help leverage synergy effects in terms of knowledge sharing, market access and support for globally operating customers. Together, they can offer fully comprehensive IT solutions and wide-ranging services – from the right IT hardware to secure, efficient and scalable infrastructure.

Spanning all phases of a data centre: The Rittal IT ecosystem



NEWS

INNOVATIONS FROM THE FRIEDHELM LOH GROUP

NEW TX CABLENET NETWORK DISTRIBUTOR

Cabling made easy

IT managers are having to extend and manage increasingly interconnected networks under growing time pressure. The new TX CableNet network distributor from Rittal responds to this challenge by speeding up network cabling, while also ensuring the necessary quality. “TX CableNet combines innovative cable management with professional quality standards,” explains Luis Brücher, Head of Product Management IT at Rittal.

The new network distributor is designed for perfect cable routing and fast installation. Even large cable harnesses can simply be inserted, without the need for laborious pulling. They slide down from the roof into the distributor with a soft bending radius in no time at all. This “waterfall principle” for cable routing follows the best-practice method for copper and fibre optic cables. Even when feeding in cables via the floor, the open frame construction enables the entire depth to be used. The Rittal delivery promise for its TX CableNet is that standard orders from stock will reach customers within 24 hours in Germany and within 48 hours elsewhere in Europe.

COMPACT ENCLOSURE AX

New protection against the heat

The compact enclosure AX now has a completely new outdoor exterior to protect it come wind, rain or shine. Rittal developed this innovation in collaboration with airport operator Fraport, which had been using a custom solution based on the predecessor model, the AE. The new exterior for the AX consists of a wall-mounted outdoor enclosure made of aluminium, which is put over the AX and can be attached to objects such as lighting poles. With this type of installation, it is even possible to dispense with active climate control in many cases. When the sun is shining, the double walls ensure the enclosure only heats up to a very limited extent and the components inside don’t get too hot. The three standard types developed are available from stock to all customers and can be ordered from the AX special accessories section of the Rittal catalogue. Items such as 19" components for safety applications or WLAN routers are installed in these AX enclosures.

NEW LED SIGNAL PILLARS

All kinds of signal options

Signal pillars help ensure an instant response to machinery and equipment malfunctions. They need to work reliably under challenging industrial conditions, without requiring any maintenance. The new signal pillars from Rittal are ideal for this purpose. The plug-and-play system is available with the three standard signal colours – red, amber and green – while the modular system offers enhanced flexibility. Depending on requirements, up to five colours are possible in various modes such as steady, flashing and strobing light, which enables custom solutions.

TECHNICAL SUPPORT CENTER

Rittal experts answer user questions

Rittal Service GmbH has opened a Technical Support Center (TCS) to respond to technical queries and complaints from customers even faster and more effectively. The TCS is split into “Technical Training” and “Technical Support & Hotline” sections that handle and resolve technical product/application queries and technical complaints on a centralised basis to shorten response times for customers.

“By pooling experts from MTS user support, service coordination and complaints handling, we have laid the organisational foundations that will help us boost customer satisfaction, first and foremost in after sales,” explains Helge Kreuzinger, Managing Director of Rittal Service GmbH. The TCS is affiliated to this company’s Business Unit Service. “At the same time, this is also helping us to make processing even more transparent and derive training requirements for Germany and the wider world,” adds Kreuzinger.

RITTAL INNOVATION CENTER IN SWITZERLAND

Hands-on digital transformation

The Rittal Innovation Center (RIC) in Haiger is already a big hit, so why not also showcase Rittal and Eplan solutions in Switzerland? Step forward the small but perfectly formed version of the RIC at the Neuenhof site. Swiss visitors to the new “laboratory of the future” can discover every process step – from preliminary planning and design using Eplan software to selection and configuration of Rittal system products, and automated enclosure machining. Just like its big brother in Haiger, RIC 2.0 places the digital twin at the heart of the processes in the industrial value chain.

The large number of customers who have seen the Rittal and Eplan portfolio in action at the RIC in Neuenhof and are now using the automation and software solution for their own processes demonstrates that this idea was worth its weight in gold. “Our aim is to offer the Swiss market products and solutions that will boost efficiency, and to build on the market-leading position enjoyed by Eplan and Rittal. The RIC is playing a key role in this regard,” says Stefan Güntner, Managing Director of Rittal Switzerland.

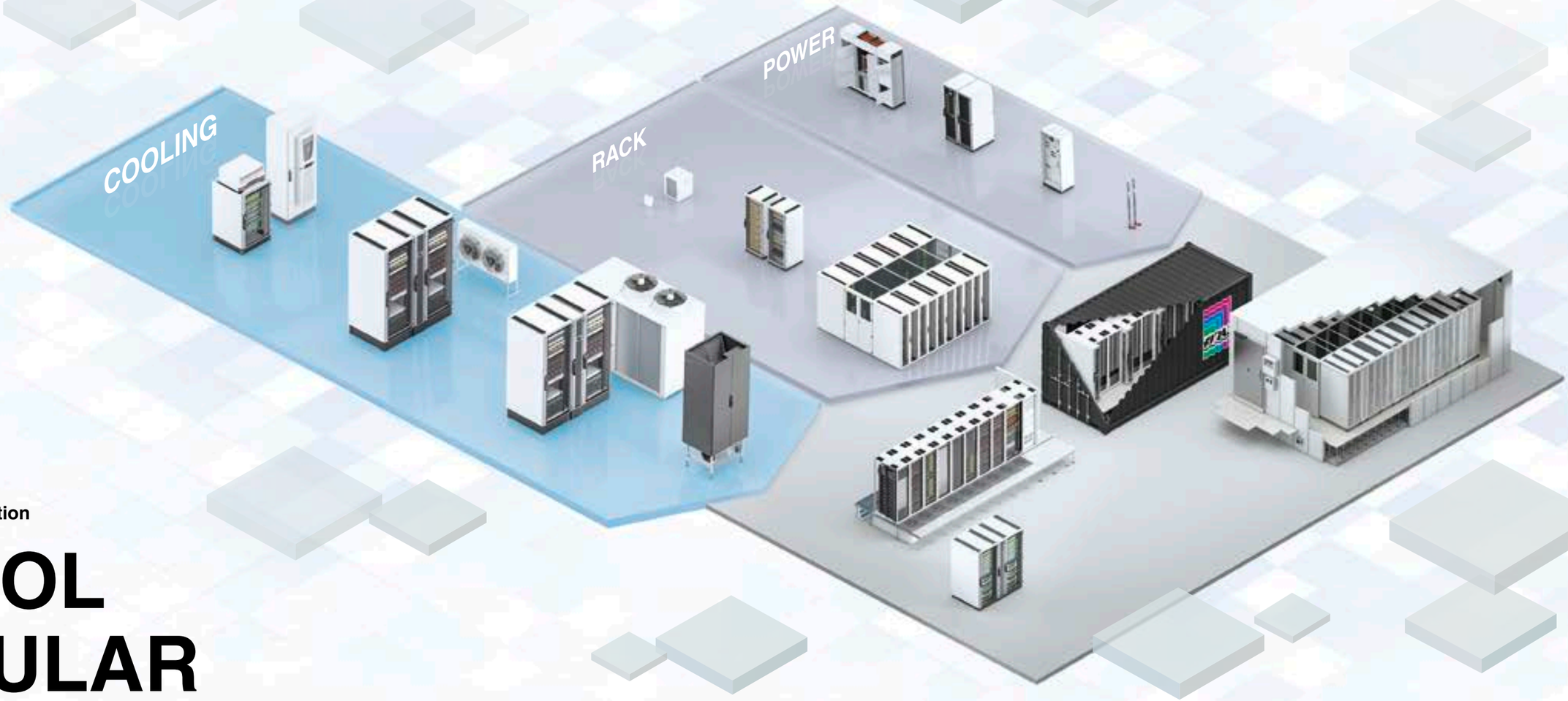
Radek Stolar, Director Business Development & Strategy IT Global at Rittal, holding the platinum award.

AWARDS

Rittal and German Edge Cloud win IT awards

Over 50,000 readers have voted, and the winners are ... Rittal and German Edge Cloud. When Vogel IT-Medien’s insider portals presented the IT Awards 2020, both Friedhelm Loh Group companies won platinum in the pre-built data centre category – one better than last year’s gold award. The Group’s cloud specialists participated under the name iNNOVO Cloud, but they are now part of the new German Edge Cloud (GEC) team.

The commitment of German Edge Cloud to data sovereignty in Europe also won it the next prize on offer – a DCS award from the UK – for helping to initiate and being a founding member of GAIA-X. This organisation is the driving force behind the creation of a European data infrastructure for the reliable digitalization and networking of the industrial, financial and healthcare sectors.



RiMatrix Next Generation

A COOL MODULAR SOLUTION

IT decision-makers and data centre operators need to respond to the growing computing, power and cooling requirements in data centres as quickly, flexibly and energy-efficiently as possible. That's no easy task! **RiMatrix Next Generation (NG)** – the new IT infrastructure platform from Rittal – is the solution they are looking for. What does it involve and what makes cooling solutions so special?

Text: Michael Siedenhans

Markus Schwarz's everyday routine focuses almost entirely on one goal – reliable data centre processes. "Data centre services must be available 24/7. We can't afford a system failure," says the Data Centre Manager from Arvato Systems in Gütersloh. He is non-committal about what the future holds. "Nobody can predict exactly how data centre requirements will change in the next three, five or ten years," emphasises the IT expert. Many data centre operators and IT managers are in the same situation as Schwarz. They need to adapt to the onward march of digitalization, but how can they plan with any certainty for an unknown future? Is it possible to design a data centre that is both geared closely to current requirements and, at the same time, future-proof?

"Yes!" is the reply from physicist Michael Nicolai, Head of Sales IT Germany at Rittal. Growing power and cooling requirements are one key aspect in this regard. For example, the Borderstep Institute for Innovation and Sustainability predicts that the total power consumption in Europe's data centres is going to climb from its current level of 80 terawatt-hours to 90 terawatt-hours by 2025. "The cooling of servers and IT racks alone accounts for up to 40 per cent of a data centre's total energy consumption," reveals Nicolai. This calls for scalable and energy-efficient cooling solutions.

IT EXPERTISE ENCAPSULATED

The experts at Rittal are in dialogue with data centre operators across the globe and therefore understand these challenges. Their response is the open IT infrastructure platform RiMatrix Next Generation – a modular solution that enables data centre operators to plan for the future right now. "We've put all our IT expertise into RiMatrix Next Generation. We've expanded our portfolio, which means we're making it possible to create extremely future-proof and flexible solutions," underlines Nicolai. The IT platform works like an open, modular system – a matrix – with individual components that fit together like Lego and can be extended and scaled as required. The basic modules are IT racks, to which further components for climate control, power supply and backup, IT monitoring and IT security can be added. As a result, all kinds of IT infrastructure solutions can be developed in a range of sizes – from standalone racks, IT containers and edge data centres to co-location, cloud and huge hyperscale data centres. The unique feature here is that new components are always compatible with existing and older ones. This means every aspect of an IT platform can be modified, including size, performance, security and fail-safe operation. Regardless of their plans for the future, data centre operators worldwide always obtain the exact solution they need for their regional requirements. Service providers and partners certified by Rittal deal with local specifications on site, which has one major advantage: "This approach avoids technical overkill, because data centre operators only apply technology that is of use to them," explains Nicolai.

NEEDS-BASED COOLING

Returning to the subject of energy-efficient cooling, Nicolai is an expert when it comes to optimum climate control in data centres. He is regarded as the father of the LCP (Liquid Cooling Package) at Rittal. "Around the world, we always look for the best local solutions to generate needs-based cooling power. This might mean something quite different in Sweden than it does in Germany, and also in a high-performance data centre as opposed to a centre with a low or medium output," continues Nicolai.

FREE ROOM COOLING

Conventional room cooling based on a high-precision climate control system and an air circulation system is widely used. Cooling is taken care of by a CRAC (Computer Room Air Conditioning) unit that ▸

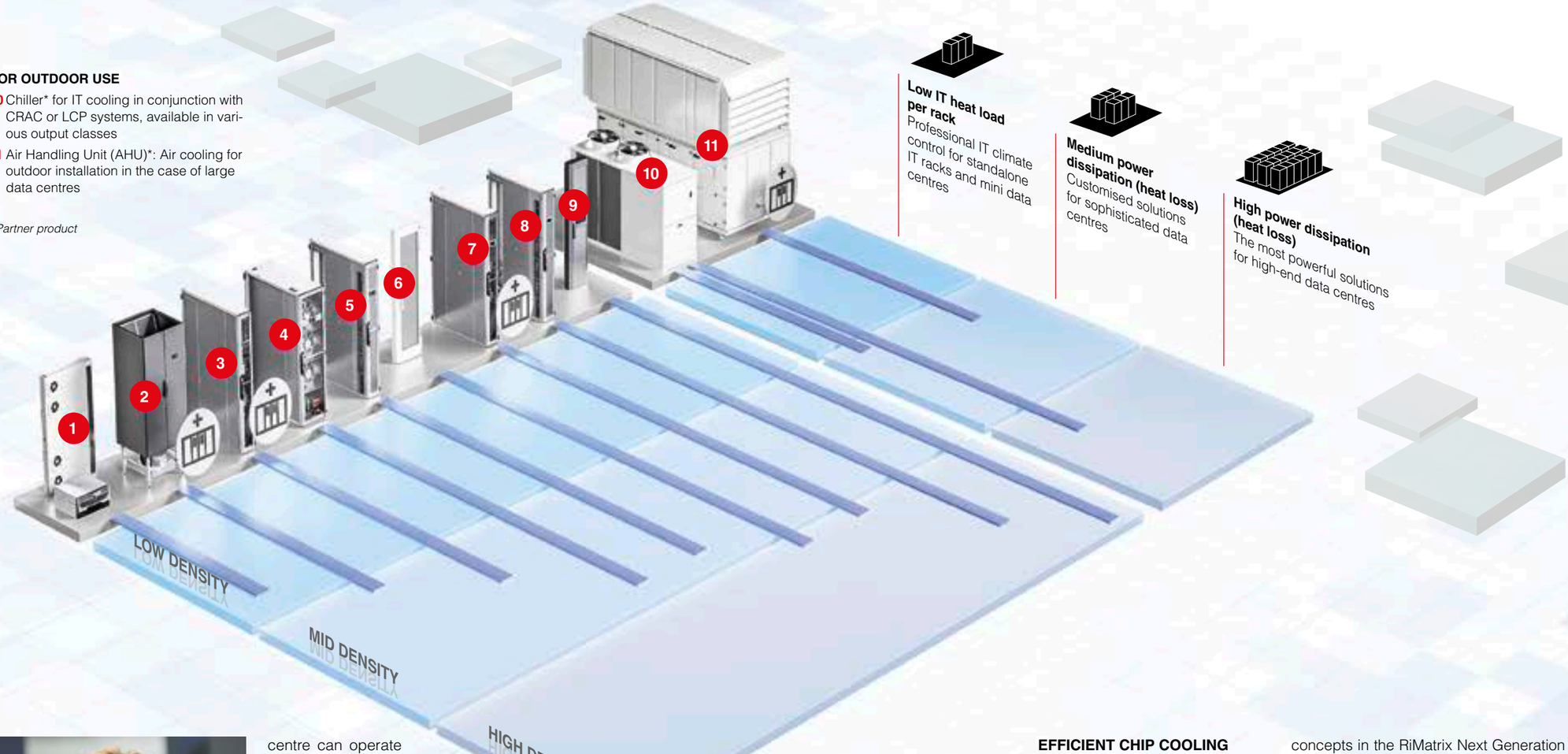
FOR INDOOR USE

1 Blue e+ IT cooling unit (front): Rack cooling with up to 5.8 kW per unit
LCU DX (back): Split cooling unit including external unit for rack cooling with up to 6.5 kW per unit
2 Computer Room Air Conditioner (CRAC)*: Up to 167 kW per unit (aisle containment possible)
3 LCP Inline DX, 300 mm: Bayed suite cooling with up to 20 kW per unit (aisle containment possible)
4 LCP Inline DX/FC, 600 mm: Combined unit with refrigerant and water/glycol heat exchanger (to use indirect free cooling) for bayed suite cooling with up to 35 kW per unit (aisle containment possible)
5 LCP Rack DX: Refrigerant-based rack cooling with up to 20 kW per unit
6 LCP Rear Door CW: Rack cooling with up to 20 kW per unit
7 LCP Inline CW: Water-based bayed suite cooling with up to 53 kW per unit (aisle containment possible)
8 LCP Rack CW: Water-based rack cooling with up to 53 kW per unit
9 Direct Chip Cooling*: Two-phase liquid cooling for CPUs

FOR OUTDOOR USE

10 Chiller* for IT cooling in conjunction with CRAC or LCP systems, available in various output classes
11 Air Handling Unit (AHU)*: Air cooling for outdoor installation in the case of large data centres

*Partner product



Low IT heat load per rack
Professional IT climate control for standalone IT racks and mini data centres

Medium power dissipation (heat loss)
Customised solutions for sophisticated data centres

High power dissipation (heat loss)
The most powerful solutions for high-end data centres

operates in the same way as a conventional air-conditioning system. Cold air is blown into the data centre and routed to the racks via a raised floor. Using CRAC systems for cooling is a suitable approach for data centres with a low or medium output per IT rack, while air handling units (AHUs) and precision air handling units (PAHUs) are appropriate for large hyperscale data centres. These units dissipate heat directly outdoors, which means they deliver a high cooling output without taking up floor space. Furthermore, if the outside air at the location is cooler than the air being expelled from the IT systems, no active cooling system is required (principle of indirect free cooling). Otherwise, external air/water heat exchangers (outdoor chillers) are used to cool the warm water from the data centre to temperatures down to 20 degrees and less. “Rittal has optimised this traditional procedure for climate control in data centres with outputs extending into the megawatt range,” reveals Nicolai. Ideally, when using this cooling method, power is needed merely to drive the fans of the free cooler and potentially the cold water pumps. “The efficiency of this solution depends to a great extent on the local climatic conditions. Naturally, a data centre can operate far more cost-effectively in the cold climes typical of Scandinavia than in the warm conditions that prevail in southern Europe,” continues Nicolai.

“We’ve put all our IT expertise into RiMatrix Next Generation.”

Michael Nicolai
Head of Sales IT Germany

INDIRECT ROOM COOLING

Indirect free room cooling is an alternative solution that is being used at the 1-megawatt data centre of media company Deutsche Welle. The system only generates cooling power as and when required, which achieves power savings of up to 60 per cent by preventing oversupply. Rittal has been able to include this module in its portfolio since it started working with Stulz (see the News section on page 16). This Hamburg-based company specialises in climate control in data centres. The new IT infrastructure platform therefore includes high-performance cooling components such as free cooling systems, side coolers and indoor chillers. “This collaboration adds the finishing touch to our data centre cooling portfolio, in the shape of a standard closed-circuit air conditioning unit in all design variants, and gives us access to the company’s pipework service for larger projects,” says Nicolai.

RACK-BASED COOLING

It is widely assumed that data volumes and thus power densities in data centres will increase. This is already the case in high-performance data centres, where servers are concentrated in the smallest of spaces. As a result, up to 30 kilowatts of energy is consumed in an area of just one square metre. Conventional raised floor structures are no longer able to quickly dissipate the waste heat generated, which is where the LCP (Liquid Cooling Package) family of rack-based cooling solutions from Rittal comes in. “It makes the most sense both technically and in terms of cost-efficiency. These rack-based solutions are the only option for the most demanding performance requirements,” emphasises Nicolai before going on to explain the principle of the concept he developed. “The hot air in the room isn’t fed into the normal air circuit. Instead, it’s extracted by the LCP directly at the rear of the servers, cooled using the heat exchanger and reintroduced at the front. LCPs react at lightning speed, which is ideal for a high-performance data centre,” he says.

EFFICIENT CHIP COOLING

Since air is a poor conductor of heat, however, direct CPU cooling will play a key role in the future. This is conventionally implemented as water cooling. One alternative is innovative direct chip cooling with advanced refrigerants. This IT cooling method helps achieve the highest efficiency values. The new water-free, two-phase liquid cooling system from Rittal and ZutaCore is one example. “By changing the state of matter, this solution absorbs more thermal energy from the chips and does so faster. Its exceptionally high-performance cooling takes place precisely where hotspots and performance peaks occur. This enables efficient, fail-safe operation of high-performance data centres and minimises IT failures,” explains Nicolai before summing up as follows: “With RiMatrix Next Generation, our portfolio now includes cooling solutions for everything from individual racks and both suite and room climate control through to the Liquid Cooling Package and direct chip cooling for sophisticated high-performance data centres. Using Rittal cooling units for direct rack climate control can result in **energy and CO_2 savings of up to 75 per cent**.” The energy-efficient, cost-cutting cooling concepts in the RiMatrix Next Generation modular system therefore make it possible for any data centre operator to invest for the future right now, even though what lies ahead is somewhat unpredictable. After all, regardless of data volume and power density, a data centre can only benefit from reliable, fault-free operation if it is cooled effectively. ■

FIND OUT MORE

Microsite
www.rittal.com/rimatrix-ng/en

RiMatrix image film

The new Eplan Platform 2022

FOCUS ON THE DIGITAL FUTURE

What does engineering software need to achieve in the next ten years? **Eplan** is providing clear answers – and is adopting a new strategy for its tried-and-tested **engineering platform**. CEO Sebastian Seitz explains how Eplan is placing the future of its solutions in the hands of the people who use them.

Text: Annika Thomas

The Eplan Platform and the Eplan ePulse cloud environment will grow even closer in the future with solutions such as Eplan eManage.

According to the VDMA (German Engineering Federation) in a recent joint publication with McKinsey entitled “Customer centricity as key for the digital breakthrough”, digital solutions are increasingly helping European mechanical and plant engineering companies to stand out from the crowd and ensure customer loyalty. Its advice to the industry is to systematically change perspective, moving away from a silo mentality and a fixation on in-house solutions towards specific added value for end customers such as equipment operators. In key sectors such as the automotive industry, it is particularly common for end users to have long been working with widely established standards and platform solutions. The joint publication recommends that the majority of mechanical and plant engineering businesses should therefore switch their strategic focus to maximising compatibility with existing platforms – such as the Eplan Platform that has successfully been established on the European market for some years now. This platform offers holistic engineering solutions for mechanical and plant engineering, panel building and switchgear, and numerous other sectors. It ensures continuous data flows throughout the value chain, as Eplan CEO Sebastian Seitz explains: “The Eplan Platform’s solutions cover everything from preliminary planning and two-dimensional circuit diagrams to digital enclosure prototypes.” The company also works with industry partners to develop standardised interfaces, ensuring close links between its software and system solutions from Rittal. Seitz, too, sees focusing on added value for end users as a key success factor. “We’re looking to further intensify the relationship with our customers because, in times of digital and industrial transformation, the success of both sides is based on close communication,” he says.

“When we develop our software, we aim to wow companies.”

Sebastian Seitz
CEO of Eplan

PLATFORM OF THE FUTURE

When developing the Eplan Platform 2022, which was unveiled at the digital Hannover Messe and is scheduled to be available from this summer, the emphasis was therefore placed on a new kind of user experience. The interface looks and works like apps for mobile devices and internationally established desktop applications. The many different software functions that have been developed over the years are arranged based on a customisable multifunctional toolbar, insertion aids and a Backstage view.

“With us, customers are getting the best engineering solution on the market.”

Sebastian Seitz
CEO of Eplan

Key and frequently used features are positioned prominently. The 2D graphics editor has also been completely revamped. “Away from the workplace, we’ve become accustomed to software that we can operate intuitively, without much explanation. Especially in a technical working environment such as engineering, users therefore also expect tools that, in addition to delivering high-quality results, are – and will long remain – state of the art when it comes to operation and visuals,” emphasises Seitz.

UNLOCKING NEW MARKETS, WHILE REMAINING MARKET LEADER

He considers this aspect to be especially crucial in the United States and Asia. “Alongside sophisticated technologies, it’s also important for the software to be as easy as possible for new users to get to grips with. Then, of course, there’s the famous rule of thumb in engineering that first impressions count. We can’t afford to rest on our laurels just because we’re one step ahead right now. We need to continue developing and keep proving ourselves to customers. In other words, we’re placing the future focus of our solutions in the hands of the people who use them,” Seitz continues.

SUBSCRIPTION MODEL FOR NEW LICENCES

This approach is also reflected in the subscription model for new Eplan licences, which is due to be launched in August 2021. “The success of our customers is at the heart of everything we do. When we develop our software, we aim not simply to keep companies on board, but to wow them,” underlines Seitz, who sees enhanced flexibility as a clear customer benefit. In uncertain times, he feels it is particularly important to reduce the investment risk by offering low entry-level prices and greater flexibility when it comes to deciding whether to continue using the software. “Ultimately, a subscription model means that – in our role as market leader – we’re committing ourselves to ongoing development in line with the latest engineering requirements. With the Eplan Platform 2022, we’re creating the technical basis to prepare ourselves for the digital future. The aim in the coming years is for existing and new customers to remain confident they’re getting the best engineering solution on the market with us – and for them to continue using our services,” says Seitz.

The Eplan Platform

One platform, multiple solutions – the Eplan Platform offers engineering software such as Preplanning for systematic preliminary planning, Electric P8 for preparing circuit diagrams and Pro Panel for 3D enclosure planning, all from a single source. Standardised interfaces and integration processes enable continuous data flows throughout the value chain, with additional links to various system solutions from Rittal. The user interface has been completely revamped for the new generation Eplan Platform 2022. With the new Backstage view for holistic project data management, the cutting-edge operating logic and clearly structured insertion aids, the focus is on optimising the user experience. This also generates specific added value for the individual solutions. The new Eplan Platform is available from summer 2021 and was unveiled to the public at the digital Hannover Messe.

Eplan ePulse

The cloud environment offers users of the Eplan Platform additional added value and services. For example, Eplan eView supports multidisciplinary, cross-company coordination processes, while eBuild is driving the automation of engineering processes. The Eplan Data Portal provides manufacturing data in a standardised format for easy incorporation into engineering projects. The cloud and platform solutions will be interlinked even more closely in the future. Eplan eManage offers the industrial ecosystem cloud-based access to complete projects from the Eplan Platform, without switching between different media. This gives all stakeholders secure access to clearly structured engineering data. A free version of the new cloud solution – Eplan eManage Free– is now available, and the launch of the full version of Eplan eManage is scheduled for the summer.

COLLABORATION IN THE ECOSYSTEM

To ensure this is the case moving forward, Eplan is enabling increased use of projects via cloud services. With Eplan eManage, for example, it will be possible in the future for entire platform projects from Electric P8 or Pro Panel to be available within the ePulse cloud environment, if required. Firstly, this function offers users a secure, central backup option for multidisciplinary projects. Secondly, project data backed up in the cloud can be accessed at any time and then processed within the usual local platform environment. Any changes made are ultimately synchronised with the cloud project. In conjunction with the redlining and greenlining functions in Eplan eView, digital coordination processes – and thus collaboration between business partners throughout the value chain – are strengthened. “In this way, we’re driving the digitalization and automation of entire industrial ecosystems,” concludes Seitz. A free version of the software – Eplan eManage Free – has been available since mid-March and the paid full version is due to be released in the summer. ■

FIND OUT MORE

It’s in your hands
www.eplan-software.com/inyourhands

Free ePulse registration
www.epulse.com

Plastic enclosure AX

EXTREME²

Can a product be extremely robust and also extremely flexible? Rittal is demonstrating this is indeed possible with its new **plastic enclosure AX**. This innovation combines the best of both worlds – all the advantages of an extremely resilient material and full design freedom when it comes to interior fit-out.

Text: Dr Jörg Lantzsch and Hans-Robert Koch

At a glance

The benefits of plastic enclosure AX

Extremely robust and reliable:
- Full outdoor capability thanks to high UV resistance and UL F1 outdoor rating (UL 746C)
- Personal safety ensured thanks to protective insulation (DIN EN 61140 protection class II)
- High protection category up to IP 66 and NEMA 4X

Extremely fast and flexible
- Internal components can be screwed directly into place
- Door hinges can quickly be switched to the other side
- Mounting plate included separately for immediate machining
- Data, software and configurator available

FIND OUT MORE

Brochure, assembly instructions, conversion tool and videos:

www.rittal.com/ax-plastic

True character often only becomes apparent when the going gets tough, and enclosures are no exception. If they are able to handle extreme situations with ease, everyday operations become child's play. Take the example of tunnel applications, where enclosures on the tunnel wall may house safety lighting systems and the power supply for emergency teams. This proves how resilient they really are, because a high-speed train generates a huge pressure wave as it passes through a tunnel – an effect that is greater still if two trains pass each other in the tunnel. Enclosures need to withstand the extreme pressure fluctuations and also high wind speeds.

TUNNEL-TESTED

Successful testing at the German Aerospace Center (DLR) has confirmed the new AX plastic enclosures from Rittal meet these very requirements. Three sizes of the newly developed enclosure were put through their paces based on a Deutsche Bahn directive (Ril 853.2001 A01). In the DLR's wind tunnel and pressure chamber, they demonstrated their extreme resilience and their suitability for both tunnel applications and rail projects.

ICE, RAIN AND SUN

These new arrivals have even more to offer, though. They are equally impressive out in the open – in the water and wastewater industry, for example – where they are continuously exposed to weathering caused by ice, rain and sun. Rittal is still using fibre-glass-reinforced polyester for its plastic enclosures, but modifying the composition of this material has made it seven times more resistant to UV radiation. What's more, the enclosures comply with the UL F1 outdoor rating (UL 746C). A further advantage is their ability to keep out both dust and water. To comply with protection category IP 66/NEMA 4X (IP 56/NEMA 12 if a viewing window is integrated), Rittal has equipped the door of its new enclosures with an all-round seal. To offer protection against dust and water, a rain protection strip is located at the top and bottom edges of the door.

The plastic enclosures also boast excellent fire protection. The material complies with class V-0 of the UL 94 standard, which stipulates that the plastic must stop burning within ten seconds and not produce any burning drips. In terms of electrical insulation, the new enclosures meet the requirements of DIN EN 61140 protection class II. They also benefit from UL 508A approval for the North American market.

FLEXIBLE AND VERSATILE

When it comes to the interior fit-out of plastic enclosures, the options have so far often been very limited, but it doesn't have to be that way. For the first time, Rittal has replicated the system concept of its steel and stainless steel enclosures in plastic enclosures. This means the interior has numerous integrated mounting bosses, making it easy to screw on accessories such as support rails and door-operated switches. Universal brackets create the 25 mm pitch pattern that is familiar from the company's large enclosures. This has the advantage that accessories for the VX25 large enclosure and the AX compact enclosure also fit in the plastic enclosure AX – from lights and punched sections to locking systems – for fast component installation and full design freedom during interior fit-out. The door provides an additional mounting surface in the form of its reinforcement frame, which can be very easily fitted with rails, punched sections, door stays or a wiring plan pocket. The mounting bosses eliminate the need for machining, without compromising the enclosure's protection category. Mounting the enclosure on a wall or pole is equally straightforward, as the rear panel is equipped with press-fitted threads to accommodate screw fixings when attaching brackets.

Rail projects on track:

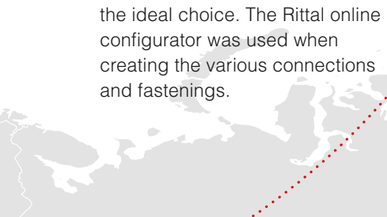
The German Aerospace Center (DLR) has now put three sizes of the new plastic enclosure AX through their paces – with successful results. In the DLR's wind tunnel and pressure chamber, the enclosure demonstrated how extremely resilient it is.

FAST AND CONVENIENT

The enclosure's mounting plate is included separately on delivery, which means machining and component mounting can start immediately. The process of installing a configured mounting plate is also very straightforward – it is simply pushed onto the threaded bolts and screwed firmly into place. The plastic enclosure has a symmetrical design, which means it is easy to rotate if necessary. What's more, the door hinge is interchangeable, so it can be switched to the other side – even on site – in just a few simple steps. ■

AT HOME WORLD-WIDE

Global success. Products from the **Friedhelm Loh Group** meet a wide range of customer needs, whether it be special site conditions, tight time frames or other stringent requirements.



USA

5,000 AT ONCE

The business model of **Fluence Energy** is based on energy storage solutions. The company has commissioned Rittal USA to supply **2,500 TS 8 enclosures** and **5,000 MAXI-PLS busbar systems** for two energy storage projects in Long Beach and Santa Cruz (both in California). Fluence appreciates the modularity, scalability and easy assembly of Rittal solutions, and is planning to use them in further projects.

UNITED KINGDOM

POWER IN THE HIGHLANDS

Scottish **panel builder Powerfish** approached Rittal about building enclosures for three new hydro turbine generators in the Highlands. The **VX25 Ri4Power** proved to be the ideal choice. The Rittal online configurator was used when creating the various connections and fastenings.

AUSTRIA

DIGITAL TRANSFORMATION PRESENTS AN OPPORTUNITY

Scheuch GmbH is implementing a major digital transformation project involving over **500 new Autodesk Premium licences**. The technology company based in Aurolzmünster, north-east of Salzburg, has already worked with Cideon to update all its design engineering and data management software using Autodesk products. Other aspects also incorporated in the end-to-end value chain include PLM, the digital twin and Autodesk Make.

CHINA

SUPPORTING VALUE CREATION

Rittal and Eplan are supporting Chinese automotive supplier **Guangzhou Mingluo Automotive Equipment** throughout its value chain. **Software, hardware and service** products and solutions are helping the high-tech company boost its efficiency, reduce its energy consumption and meet the requirements for smart production.

USA

ENGINEERING APPLICATION

The strategy of panel builder **NorthWind Technical Services** from Kansas is based on an automated value chain. It uses **Eplan software** for its engineering work, first and foremost when it comes to configuration. Enclosure components are machined on a Perforex machining centre from Rittal Automation Systems. The company has invested in the Wire Terminal WT for wire processing, while Eplan Smart Wiring provides workshop staff with direct support.

BRAZIL

VERSATILE PARTNER

Expertise and solutions from Rittal and Eplan are being put to good use by **Italian company Santerno** in Brazil. This includes **800 VX25 enclosures** in two different sizes, which have been selected for a **photovoltaic park** because of the optimum corrosion protection they offer in all weathers. Rittal Brazil will carry out all maintenance work on the installation, which was planned using Eplan Electric P8.

KUWAIT

IT-COUP

The state-of-the-art data centre at the **University of Kuwait** will house ICT equipment with a total load of 500 KW. Rittal supplied **3 cold aisles**, housing **108 VX IT enclosures**, each equipped with redundant power distribution units. The environmental conditions are monitored with the Rittal CMC III solution. In the second phase, all chilled water cooling units will for the data center will be supplied by Rittal with N+2 redundancy.

VX25 enclosure system in the mechanical engineering sector

LOOKING GOOD

A more attractive housing with faster assembly?
It couldn't be simpler with the VX25 system portfolio.

Many advantages – not only visually

Machine housings made from Rittal enclosures don't just look good. They also

- cost less than a custom design
- offer a wide range of installation options thanks to system technology
- grow along with the equipment
- enable easy assembly and dismantling
- benefit from global availability

The MOV 743 from PVA Industrial Vacuum Systems is a high-vacuum brazing furnace for high-temperature and hard brazing processes.

Machine housings are rarely one-size-fits-all solutions. They are just as distinctive as the machine itself – often made to measure and in most cases a time-consuming, expensive undertaking for mechanical engineers. There is a way to make them more cost-effective and also more stylish, though, as demonstrated by **PVA TePla**. The German vacuum specialist for high-temperature and plasma process technology uses enclosure systems to house its equipment – and not simply for aesthetic reasons.

Text: Hans-Robert Koch

In most cases, enclosures are not front and centre. They are typically hidden away behind machinery and equipment or located on steel platforms in the far corners of factory buildings. The giants amongst them are normally not destined to take centre stage, but rather to help out behind the scenes. Enclosures form a stable backbone for control and switching processes on machinery and equipment. Protecting people and technology alike, they create the ideal climate for electrical engineering and electronics components, which means they also ensure stable production processes. Enclosures thus serve a functional rather than a representative purpose.

In the mechanical engineering sector, however, enclosures have a far more prominent role to play. Here, they are also found alongside machinery or as integrated components inside it and have a whole new set of tasks. With the help of operating displays on doors and side panels or thanks to connected support arm and operating systems, they become the machine operator's "assistant".

BETTER LOOKS, LOWER COSTS

Specialist machinery manufacturer PVA TePla has taken the use of enclosures to the next level. They take centre stage amongst the machinery in its large, light-filled production building in Wettenberg, about an hour's drive north of Frankfurt. For example, the vacuum specialist has been utilising Rittal enclosure technology for many years now – amongst other things, to fully encapsulate its MOV 743 heat-treatment furnaces – and it started using the new VX25 system portfolio in 2019.

"The Rittal enclosure system enables us to build highly industrialised manufacturing equipment with an attractive design that no longer looks like part of a large-scale industrial production operation. You could almost have it in your living room," says Martin Kaiser, Managing Director of panel building and switchgear business PVA Control GmbH.

The idea came about indirectly, from outside the company. A long-standing customer wanted to display PVA machinery in a sales showroom and had therefore asked a sheet metal worker to build an aesthetically appealing "packaging solution". When Kaiser found out about this by chance, he seized the opportunity to develop a new housing concept. The basic idea was to give all the equipment, including its housing, the same look as individual enclosures – which already form an integral part of the installation. "We firmly believed back then – and we still do – that housing a machine in enclosures lined up side by side creates a uniform external appearance that looks great and fits in well with other switchgear," explains Kaiser. "We then simply gave it a try and were pleasantly surprised in two ways. For one thing, it worked very well from a technical perspective and, for another, the enclosure concept cost about half as much as purchasing a custom-built housing from an external specialist," he adds.

Successful teamwork
From left to right: Simon Stark (Rittal System Consultant), Martin Kaiser (Managing Director of PVA Control GmbH) and Armin Steger (Product Manager at PVA Industrial Vacuum Systems GmbH).

MUCH FASTER

This is because of the far shorter assembly times involved. Most of the conventional housing solutions used by PVA Control are time-consuming custom designs from external companies. Posts are often erected to start with, to which different types of panelling are attached as required. This is then followed by a powder coating process. Harnessing the benefits of a modular enclosure system for its housings makes the company faster and more flexible. “The housing is normally ready it just two days,” reveals Kaiser.

Once the machine’s mechanical structure is in place, the next step is to decide on the overall appearance of the installation and the size of the housing required. PVA Control uses standard components for this purpose, working with Rittal pitch patterns for enclosures 1,000 mm and 800 mm wide. The MOV 743 housing comprises a total of twelve individual enclosures. The aim is to arrange these so as to create a continuous housing with doors and side panels in exactly the right places – doors where equipment needs to be accessed for servicing, for instance.

In addition to quick and easy ordering of enclosures and accessories from the Rittal catalogue or online shop and the associated savings thanks to more cost-effective series articles, PVA Control also benefits from the diverse installation functions of Rittal enclosures. “The enclosure frame sections and accessories for the VX25 mean we can install components virtually anywhere, making it easy for us to fit items such as pipe brackets and cable clamps,” says Kaiser. What really speeds things up, he goes on to explain, is the straightforward machining of sheet metal components such as doors and side panels – when holes or cut-outs are required for fan-and-filter units, for example. “We simply place the panels in the Perforex BC machining centre from Rittal and drill the holes in an automated process,” continues Kaiser.

A further advantage is that enclosure-based housing technology can be integrated perfectly at the development stage. In this way, the housing grows along with the mechanical engineering. Once the equipment to be housed has been mechanically pre-assembled, there will be a series of instances when an enclosure is required at a specific location so that assembly work for cable routing or cable clamp installations can be completed – when cable ducts need to be routed on the roof of the housing/enclosures, for instance. “It’s disastrous if that takes a long time, because it means a team can’t continue working,” explains Kaiser.

Cooling water distribution
The housing offers all kinds of equipment configuration options.

VX25: A whole lot of scope

PVA Control is benefiting from the advantages of the VX25 enclosure system. “The frame sections and accessories mean we can install components virtually anywhere, making it easy for us to fit items such as pipe brackets and cable clamps,” says Martin Kaiser, Managing Director of PVA Control GmbH. According to him, assembling and dismantling all the equipment would be far more difficult without the VX25 system.

EASIER INSTALLATION

Straightforward fitting and removal of enclosure doors and panels also helps reduce the total assembly time. Once the basic mechanical equipment is in place – along with the enclosure frame providing the housing function – the doors and side panels can be fitted in no time at all during the customer acceptance inspection to finish things off. The VX25 enclosure system can be assembled by one person working alone, with no need for any tools. The door is simply hung on the hinge. “In our case, the doors and side panels are normally hung in the space of an hour,” says Kaiser

Without the modular system, assembling and dismantling all the equipment would be far more difficult for PVA TePla. “The individual parts are interchangeable. It makes no difference whether the door is ultimately hung in its original location or on the opposite side at the customer premises,” continues Kaiser. Standardisation gives the company a great deal of freedom. If a repair is required, the global availability of system components is a further plus point.

When asked which features of the VX25 are the most impressive, Kaiser sums it up as follows: “The 130-degree hinges, the more robust gland plates, the greater versatility of the new base/plinth system and the fact that the enclosure as a whole requires fewer accessories and less storage – which also brings costs benefits.” ■

FIND OUT MORE

The VX25
rittal.com/vx25

PVA TePla
www.pvatepla.com/en/

"The infrastructure on the Eplan Platform will enable us to collaborate worldwide."

Stefan Vietz
Electrical Design Engineer
at Schaeffler's Erlangen site

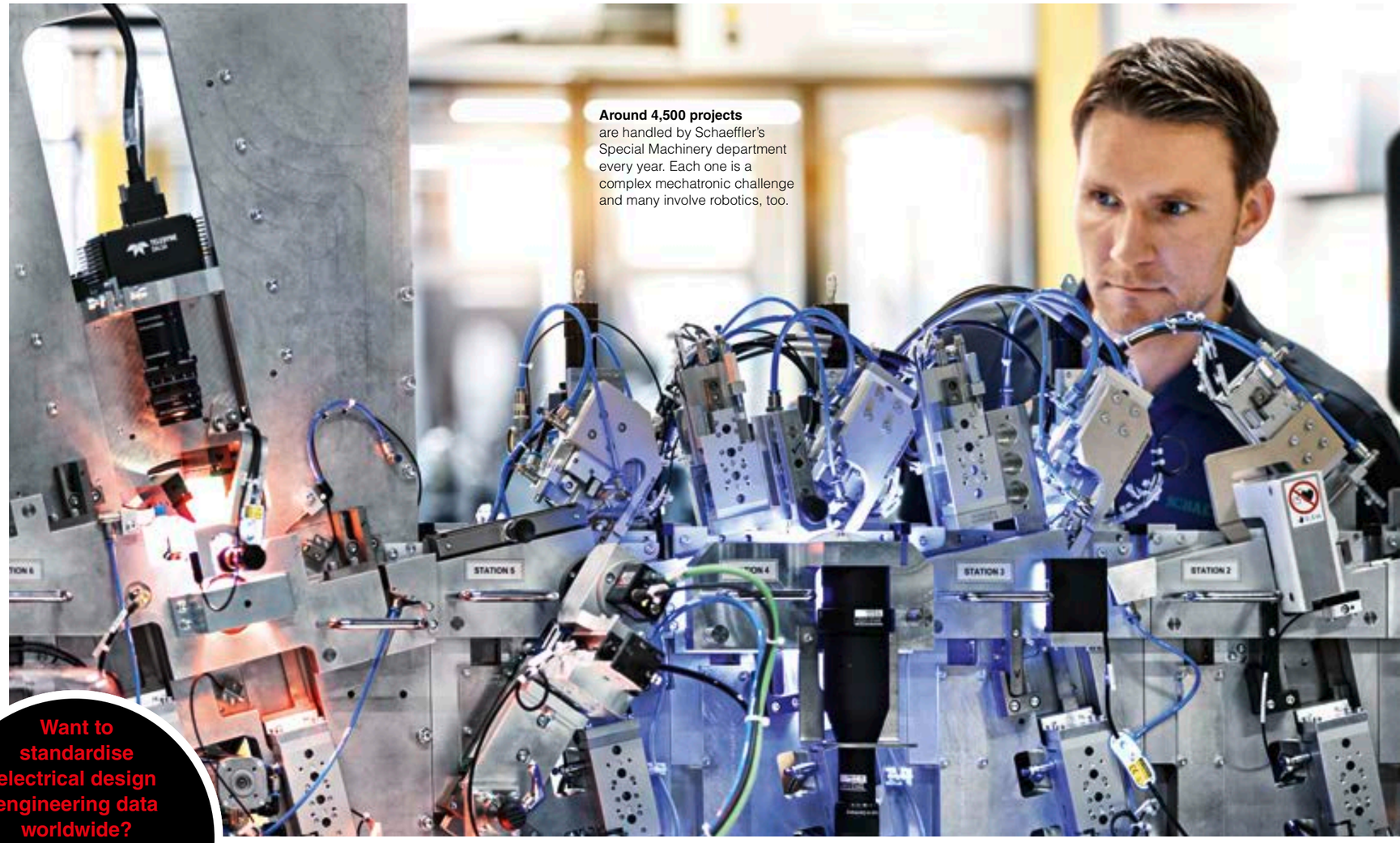
Schaeffler Special Machinery

NEW ROUTE (E)PLAN

Want to standardise electrical design engineering data worldwide?
The Eplan Platform makes it possible and creates a common infrastructure across all sites.

Completely new directions: Rather than offering its know-how in developing production equipment to just one in-house customer as it has done to date, **Schaeffler Special Machinery** is also looking to help external customers in the future. The department is standardising its electrical design engineering across numerous sites for this purpose, and the **Eplan Platform** is playing a key role in this process.

Text: Gerald Scheffels



Around 4,500 projects are handled by Schaeffler's Special Machinery department every year. Each one is a complex mechatronic challenge and many involve robotics, too.

Schaeffler Special Machinery in Erlangen is one of the key players in Germany's mechanical engineering sector, with 1,700 staff at 13 sites across the globe. Somewhat unusually, it has so far focused exclusively on a single customer, albeit it one with a hugely important global brand – the Schaeffler Group. This leading international automotive and industry supplier employs 84,200 staff at its 170 sites located around the world and has a turnover of 14.4 billion euros.

INITIAL SITUATION: 4,500 PROJECTS A YEAR

The Special Machinery department makes the vast majority of the production equipment its internal customer requires throughout the Group. This includes developing and implementing complex assembly and testing lines for hybrid modules and for the new electric axle transmission systems – two highlights from a good 4,500 projects the department handles each year.

TIME AND COST SAVINGS OF

44%

are possible with functional engineering in enclosure manufacturing – with solutions from the Eplan Platform, for example.

Source: "Schaltschrankbau 4.0" (enclosure manufacturing 4.0) study, IWS, University of Stuttgart

THE AIM: NEW TASKS, NEW CUSTOMERS

Orders for the Group's own requirements have so far kept the special machinery engineers busy, but they are now looking to explore new horizons. The department is keen to share its expertise with external customers, too. Director Special Machinery Bernd Wollenick explains why: "We want to tap into new areas of activity and customer target groups." The focus is on assembly and testing equipment, machining centres for grinding and honing, and production know-how in the fields of robotics, vision and handling systems, and production IT.

THE PLAN: STANDARDISING ELECTRICAL DESIGN ENGINEERING

The process of opening up to outside customers is driving the standardisation ▸

of the electrical design engineering software at sites such as Erlangen and Bühl in Germany and Taicang in China. These and other sites are already working with the Eplan Platform but use it very differently. The department has now tasked a project team consisting of key users with creating a globally standardised approach based on Eplan. Stefan Vietz, an electrical design engineer at the Erlangen site, explains what the team is doing: "We are developing a common, harmonised infrastructure on the Eplan Platform that will enable us, for example, to collaborate worldwide. That will mean we can put our capacities to the best possible use and make the development sites more flexible."

STAGE 1: STANDARDISING TEMPLATES

Standardised templates are a prerequisite for a harmonised infrastructure. The team is following global standards, in particular EN 81346. As Sascha Jäger, an Eplan key user at the Bühl site explains: "We have developed standard-compliant templates that every employee – including everyone in manufacturing – understands." This means both basic information and item management are standardised. It goes without saying that every item, including all the relevant data, is also stored in the ERP system. To simplify the design engineering process, the team has created items complete with macros and has a clear goal in mind: "We have assigned each item a data set that is as comprehensive as possible. That simplifies manufacturing." The basic principle here is as follows: "Whoever needs data should get it – whatever type is required." Thanks to standardisation at item level, components can even be interconnected with the minimum of effort. Nor is it a problem if a customer ends up choosing a controller or electric motor from another manufacturer. "The relevant items are simply swapped and all the data for the new components is adopted," says Jäger.

Enclosures: Schaeffler plans these in 3D with the help of Eplan Pro Panel.

STAGE 2: ROLLING OUT 3D DESIGN ENGINEERING

At the Bühl site, Schaeffler is now already using Eplan Pro Panel to design the enclosures for production equipment in 3D. Pro Panel is even going to be rolled out worldwide in the future, because its benefits are clear. Jäger gives the following example: "If a design engineer places a frequency inverter on a mounting plate, the drilling pattern is automatically stored and the data can be transferred to a Perforex system in DXF format. That saves time during both design and manufacturing."

STAGE 3: USING EPLAN EVIEW

The next stage is to transfer the data from Pro Panel to the external cable configuration team. Vietz approves of this: "We then receive labelled cables with wire end ferrules or ready-to-use cable harnesses. That, too, saves time and is highly efficient – especially in the case of projects using the American UL standard." The key users are currently exploring how Eplan eView can be applied and used during commissioning. As Jäger explains: "The manufacturing department and commissioning technicians can call up the circuit diagram on a tablet and jump directly to the relevant details. You then no longer need to print circuit diagrams, because you always have the latest data to hand." Vietz has discovered some further benefits of Eplan eView: "Redlining functions enable commissioning technicians to immediately flag up what they have changed on site. It's even possible for three or four of these technicians to work on equipment at the same time and always have the same version of the documentation in front of them. That makes it easier to communicate with the programmers – and not only during commissioning."

EFFICIENCY INCREASE OF

43%

This can be achieved using an integrated software solution such as the Eplan Platform during the engineering process.

INTERIM GOAL: FIRST ORDERS DELIVERED

Two years after the project started, the key users haven't yet achieved their ultimate goal, but they are well on the way to doing so. The key standardisation steps have been completed, Schaeffler's Special Machinery department has already positioned itself on the external market and the first equipment orders have been delivered to non-Schaeffler customers. ■

"Eplan Pro Panel saves us time during both design and manufacturing."

Sascha Jäger
Eplan key user at the Schaeffler site in Bühl

Cloud-based software: Tablets with Eplan eView help commissioning technicians.

FIND OUT MORE

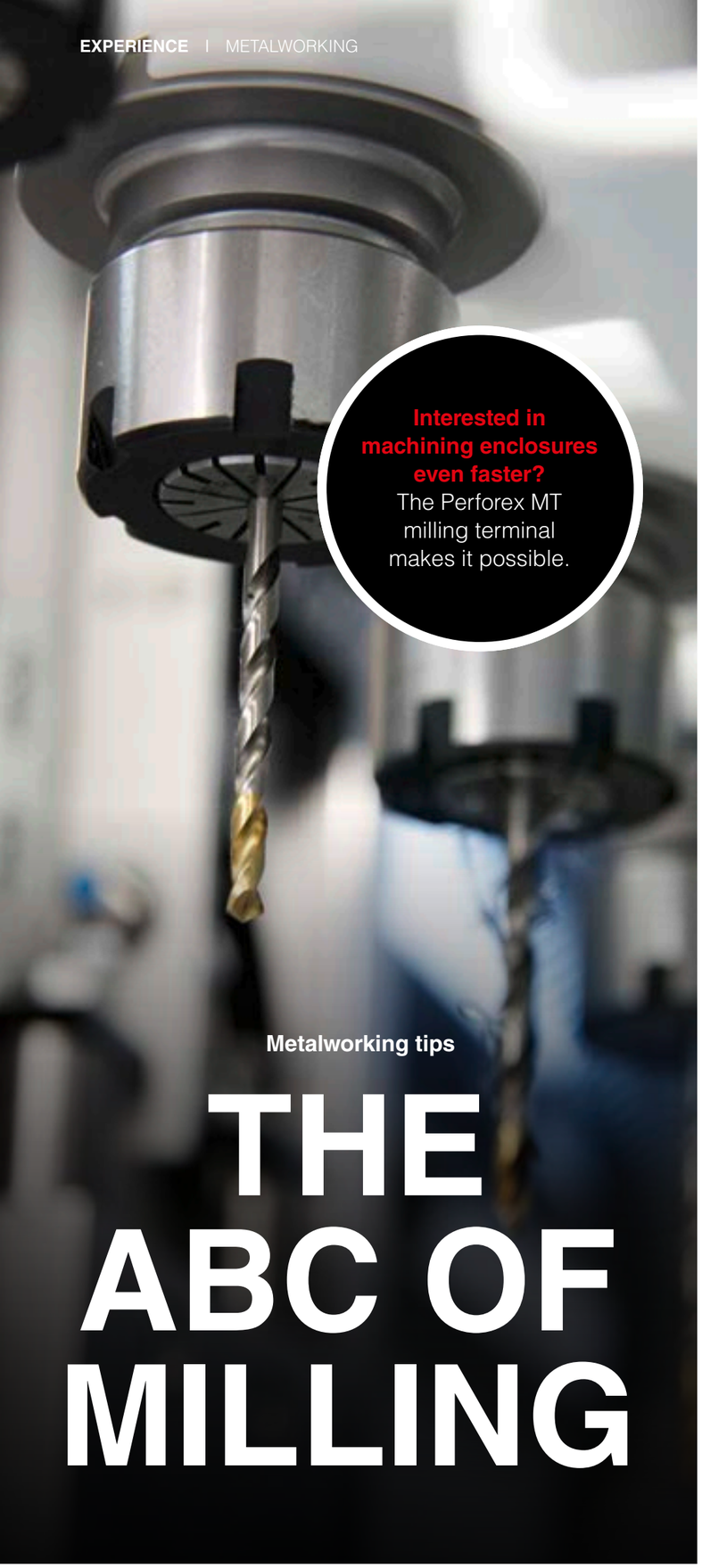
Products from the Eplan Platform
www.eplan-software.com/platform

More information about Eplan Pro Panel
www.eplan-software.com/pro-panel

Eplan eView video

SCHAEFFLER

www.schaeffler.de/special-machinery



Interested in machining enclosures even faster?
The Perforex MT milling terminal makes it possible.

Metalworking tips

THE ABC OF MILLING

Milling, drilling, thread tapping – there are very few switchgear manufacturers who love metalworking. Fortunately, there is a solution! Automated machining centres such as the **Perforex MT** can help. The following three tips show how it can be used to its full advantage.

Text: Jörg Achenbach

The task of machining enclosures, housings and mounting plates takes switchgear manufacturers a lot of time if they have to carry out the work by hand. It can easily add up to four hours or more – reading through plans, marking out holes, tapping threads, deburring cut-outs and then cleaning the machined parts. In a small company that doesn't have a dedicated metalworking department, electricians and switchgear engineers end up doing the work, which takes up valuable time that they lose when it comes to building and wiring the switchgear.

75 PER CENT FASTER

State-of-the-art milling machines can cut machining time by up to 75 per cent. The savings are even more impressive when it comes to laser machining systems, which cut the processing time for steel enclosures by up to 85 per cent. When working with the Perforex MT, there are a few tips that can help companies achieve these savings:

TIP 1: CLAMP COMPONENTS TO MINIMISE VIBRATION

Clamping has a major influence on the service life of milling tools. Wear occurs at the point at which the cutting edge of a milling tool comes into contact with the material it is machining. The more defined this contact point is, the more efficiently material can be removed and the less wear there is on the tool. The experts at Rittal Automation Systems recommend ensuring that components are securely clamped in place, which reduces relative movement between the milling tool and the component.

Clamping on the Perforex MT: With the right accessories, panels can be clamped in place so as to reduce vibrations and bulging. The end result is that tools last longer.

- Use as many clamping elements as possible, such as manual clamps and pneumatic clamping elements.
- Line clamping elements with cushioning to prevent bulging in the components.
- Brace the component at close intervals using spacer bolts or, better still, brush strips. This ensures the cutting edge can work more effectively.
- Use a clamping frame when working on small enclosures. This enables you to machine several boxes at the same time.

These measures help to reduce the movement of the components and extend the service life of tools.

TIP 2: ADJUST FEED FLEXIBLY

How can you extend the service life of milling tools? In general, the faster the feed speed, the shorter the service life, and the lower the feed speed, the longer the service life. Feed should therefore be adjusted to requirements. Tools should also be properly cooled and cooling lubrication systems regularly checked, because the strength of machining tools declines as temperatures rise. Shortly before a milling tool breaks, the metal will melt, usually at a localised point – the cutting edge disappears and the tool breaks against the cut edge of the component. Speed and feed should also be coordinated. The machine manufacturer will provide initial guide values, but it is a good idea to document feed and speed values during operation and optimise them for your own product mix.

TIP 3: SELECT THE RIGHT TOOLS

Besides feed, speed and cooling, the milling tool itself also determines its own useful life to a large extent. For instance, the more cutting edges a milling tool has, the more edges engage during one revolution, the more material is removed in one revolution and the less stress is placed on each cutting edge. This extends the service life of the milling tool. By contrast, higher feed speeds lead to more tool change intervals. If higher speeds are necessary or longer tool change intervals are required, carbide milling tools with four edges can be used. However, not all carbide milling tools can cope with the vibrations on the components. This is another area where users should follow the recommendations of specialists from Rittal Automation Systems, who have the right product for every application scenario. ■

The advantages of the Perforex MT

The Perforex MT has an automatic tool changer and tool magazine that can hold up to 21 tools. It takes care of all work in a single pass, without operators having to intervene, and can machine all materials generally used in switchgear, such as steel, stainless steel, aluminium, copper and plastic. Enclosures made of stainless steel can be machined better and more efficiently on the Perforex LC.

Jörg Achenbach
Product Management Rittal Automation Systems

FIND OUT MORE
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Can enclosures be machined and fitted out even faster? How the AX compact enclosure from Rittal speeds things up.

The AX compact enclosure

OFF TO A FLYING START!

The Meurer-etechnik team with the new AX compact enclosure. From left to right: Marco Eiser, Janik Pöttgen, Wolfgang Seuser, Steven Lauer, Jonas Kottscheidt and Anton Buhr.

Field testing. Meurer-etechnik is looking to the new AX compact enclosure from **Rittal** to improve its production efficiency. How does the new model differ from its predecessor, the AE? A day spent with enclosure production staff reveals all.

Text: Sabine Spinnarke and Hans-Robert Koch

A new working day dawns at Meurer-etechnik in Germany's Westerwald region. In the incoming goods section, a young man wearing a black T-shirt with the company logo on the front and the sleeve is taking delivery of a pallet with eight AX compact enclosures from Rittal. Production Manager Steven Lauer is already waiting for their arrival. In just a week's time, the UL-compliant enclosures are set to be delivered to a special-purpose machinery manufacturer based in the Cologne area. Lauer, a slim-built man in his late twenties, can't wait to see how the new AX enclosures differ from the predecessor model, the AE.

Ready to get started: The AX's doors and mounting plates are simply added to the delivery package and are quick to machine using the Rittal Perforex BC

"Let's get started," he says. Lauer has assigned the task of fitting out the AX enclosures to three of the plant electricians. One of them is already clamping the first enclosure door into the Perforex CNC machining centre. The mounting plates are next. Progress is rapid, because the doors and mounting plates are simply added to the delivery package and staff don't have the hassle of first detaching them from the enclosure, as is normally the case. Using the digital twin's manufacturing data from Eplan Pro Panel, the machine cuts all the necessary holes in double-quick time. "That part is the most fun," says Lauer, who is standing casually at the machine's operator terminal.

Digital twin: The digital twin's manufacturing data in Eplan Pro Panel

"There are hardly any questions to deal with and you can see the results straight away," he adds.

"The additional space on the gland plate is a huge advantage and the AX is also far more flexible when it comes to the interior fit-out."

Steven Lauer
Production Manager at
Meurer-etechnik

MORE CABLE SPACE

It's now time for pre-assembly, configuration and wiring. A fully automatic wire processing machine has already produced the necessary cable harnesses – also using data from the design engineering department. In this way, Meurer-etechnik is gradually implementing "enclosure manufacturing 4.0". Lauer indicates an area in the rear part of the light-filled factory building to three members of staff, who lift the compact enclosures onto small metal trestles. Next to each of the plant electricians is a trolley with tools and a number of boxes containing electronic components. The enclosures are now lying on their backs with the doors fitted. Beside them are the mounting plates, to which the men next attach the mounting rails and cable ducts. Contactors, terminals, inverters and similar components are then installed. During this configuration process, the electricians regularly consult their tablets to compare their work with the 3D model. Next comes the wiring. Last but not least, the fully wired mounting plate is fitted into the enclosures.

Lauer has been with Meurer-etechnik for ten years. Back when he was an apprentice, he still had to learn how to position each hole manually. "The technology has come a long way since then," he says before asking his colleagues the following question: "So, what's different about the AX?" The answer: "It feels like there's more room on the gland plate." And there is indeed 30 per cent more space for inserting cables. "That's a huge advantage," insists Lauer, because digitalization is continuously increasing the number of components in the enclosure and thus also the number of cables that need to be routed inside via the gland plate. He also takes a closer look at the interior wall of the compact enclosure. "There always used to be problems with the interior fit-out, because there weren't enough options for fitting the depth stays. That has now changed," he notes.

Tool-free: 30 per cent faster assembly thanks to tool-free installation of the handle system

Being able to install the rails at a variety of heights makes the process of designing the levels more flexible. Lauer points to a grey box on one of the trolleys. There are now only three cable harnesses left in it. "Once the box with the cables starts looking empty, I know we're on the finishing straight," he says. There were no errors during testing, and the enclosures for the special-purpose machinery manufacturer were even ready half a day ahead of schedule. "You're happy if, when you get to the end of the day, there's no danger of failing to meet the delivery deadline and the quality is as it should be," says a delighted Lauer. ■

THE AX EFFECT:

30%

... more cable space
... faster assembly
... new functions

Automated: The Perforex (top) cuts all necessary holes using data from the digital twin. **Faster assembly:** Interior fit-out is around 30 per cent quicker with the AX (bottom) than with the predecessor model, the AE.

FIND OUT MORE

Video of the AX

Product details
rittal.com/ax

Meurer-etechnik
Steuerungsanlagen . Energieverteilungen

www.meurer-etechnik.de

How can you save time when connecting up auxiliary consumers?
It's twice as fast with the RiLine Compact busbar system.

RiLine Compact in switchgear for the metal industry

IN THE FAST LANE

Connecting up auxiliary consumers in large control and switchgear systems has always been a complex and time-consuming task that involves a lot of manual work, but it doesn't have to be that way. As **FEST GmbH** is currently discovering, RiLine Compact from Rittal makes this process quicker and easier.

Text: Dr Jörg Lantzsch and Hans-Robert Koch

Large control and switchgear systems have a great many tasks, one of which is supplying power to smaller consumers. Before they can do so, however, each individual component needs to be wired up – a huge amount of work. "Even though comb bridges that wire several components in parallel simplify the wiring process, a great deal of work is still required," says FEST GmbH Project Manager Sven Rottgardt. Separate busbar systems to supply the auxiliary consumers are a further option for the solution provider from Goslar in Germany, which plans and develops industrial plant engineering operations. Even then, a considerable amount of work is still involved, because additional holders and covers need to be installed.

"Quite simply, RiLine Compact is the ideal solution. We roughly halve the working time involved."

Sven Rottgardt
Project Manager for Management & Engineering at FEST GmbH

Simple The board is clicked securely into place on a DIN support rail – without the need for tools.

50 PER CENT LESS WORKING TIME

It doesn't have to be that way, though, as demonstrated by a current project in which FEST GmbH has adopted a different approach to designing the auxiliary drives in a switchgear system for a metalworking plant. Power is supplied both to the main drives that mill and straighten the round stock processed at the plant, and to the drives that move the metal components – which weigh several tonnes – within the plant. In all, 20 fields with a total rated current of 4,000 A have been installed. However, the plant also includes a number of auxiliary consumers that need to be supplied with power separately. To meet this particular challenge, Rottgardt and his team decided to use the RiLine Compact power distribution system from Rittal for the first time. The solution offers a whole host of benefits. "Installation is very straightforward and far fewer parts are needed. The crucial factor, however, is that we roughly halve the working time involved," explains Rottgardt. The numerous steps normally required during conventional installation are no longer necessary.

FIND OUT MORE

RiLine Compact
www.rittal.com/rilinecompact

FEST AUTOMATION · IT · ENERGY
www.fest-group.de/en

FAST AND TOOL-FREE

That makes the compact busbar system ideal for supplying power to small consumers. The system is based on a board with integrated conductors and an end-to-end contact pitch pattern. This is simply clicked into place on a DIN support rail in the enclosure. No tools are required for this operation or for plugging components onto the board, which has all-round shock-hazard protection. What's more, this is all it takes to establish the electrical contact for the components. The resulting smaller power distribution systems have a maximum rated current of up to 125 A.

The main benefit of RiLine Compact is its fast, tool-free installation. "Quite simply, it's the ideal solution for small distribution systems and ultimately makes us even more cost-effective," emphasises Rottgardt. He then mentions a further advantage: "Time and again, an additional consumer needs to be connected during commissioning. With RiLine Compact, we have space in reserve, so we can integrate this into the existing system quickly and easily."

SAVINGS ARE THE DECISIVE FACTOR

FEST GmbH always closely scrutinises new products, but when a system is as impressive as RiLine Compact and halves the working time, it makes the decision all the easier. "When it comes to future customer projects, preference goes to new systems such as RiLine Compact that offer impressive practical benefits," says Holger Lichtenfeld, who is in charge of design engineering and manufacturing at FEST GmbH. "Ultimately, however, the price-performance ratio always has to be right," he underlines and adds: "With RiLine Compact, that's very clearly the case." ■

How can panel building and switchgear be made more efficient? With the “Smart Engineering & Production” technology network.

Automation boosts efficiency in switchgear production

THE SWISS SOLUTION

As far as **W. Althaus AG** is concerned, the secret to better efficiency in panel building and switchgear has for years been automation, plus data consistency for processes and a strong **technology network with Eplan, Rittal and Phoenix Contact**.

Text: Barbara Sawka

Precise, safe and fast: The Athex uses planning data from Eplan Pro Panel to help plant engineers fit terminals to top-hat rails.

Watches, cheese, chocolate – Switzerland is famous for these products the world over. And although panel building and switchgear might not be considered a typically Swiss product, the country is home to lots of innovative companies in this field. One of those companies is W. Althaus AG, whose motto – and the secret to its success – is “Leading in Automation”. When it comes to automation, W. Althaus AG is ahead of its time and has forged something of a pioneering role in Switzerland. “Six or seven years ago, automation didn’t have such a high profile. Manufacturers also had to learn how to design their products so they could be automated,” recalls Marco Schneider, CEO of the company, which is based in the canton of Bern and bears the name of its founder, Walter Althaus. In the meantime, as Schneider himself admits, the topic has certainly come to the fore – and not just in Switzerland. This has resulted in new challenges. Customers want to operate in a more consistent way, from ordering through to commissioning. Markets are becoming more volatile and that is demanding greater flexibility. Schneider is certain that automation can help: “You can automate or semi-automate certain steps and free up specialists to focus on specialised tasks.” This has long since been the way things are done at W. Althaus. The company identifies with the topics of automation and digitalization – “I think it’s in our DNA,” says Schneider. That is why it has been using Perforex machining centres from Rittal to machine enclosure panels for many years. Panels measuring up to 2450 x 1600 mm can be clamped in place in these machines, which can process all the materials commonly used in switchgear, such as steel, stainless steel, aluminium, copper and even plastic. The quality of the cut-outs is excellent, and the average machining time on the Perforex is only between 15 and 20 minutes per part.

“Our cooperation with Rittal, Eplan and Phoenix Contact is very intensive. We put our heads together to see what the future might hold.”

Marco Schneider
CEO of W. Althaus AG

THE KEY TO DRIVING DOWN COSTS

The complex automation task of cutting top-hat rails to size and fitting and labelling terminals is taken care of at W. Althaus AG by the Athex terminal block assembly centre. The machine is an in-house development from the innovation powerhouse that is W. Althaus AG. Like the Perforex, it processes data from Eplan Pro Panel, a software package for planning the construction of enclosures in 3D. The support rails are automatically measured from the buffer store and cut to size before a needle engraver is then used to label the underside with text, a QR code, etc. for order picking and project planning. After that, a gripper system fits the terminals directly to the terminal strip. The company’s Secarex cutting centre also obtains data from Eplan Pro Panel. It quickly, precisely and safely cuts wiring ducts to length – including covers and support rails. The integrated label printer takes care of project-specific labelling. Optimised cutting waste and an accelerated overall process ultimately result in lower costs, too.

THE "WIRING" CHALLENGE

Switchgear manufacturers still need to spend a lot of time on wiring, and this is where Schneider believes the biggest potential savings now lie. Althaus is currently working with Rittal to develop automation solutions for enclosure wiring that are focused on the mounting plate. The biggest challenge is the complexity of the wiring, which is not limited solely to the mounting plate – there are connections to the doors, side panels, roofs and bases in the enclosure, and to bayed enclosures, too. The situation is further complicated by the fact that technical standards vary depending on the country where the enclosure is to be used. The concept of automated wiring envisages, among other things, automatically wiring up strands that have been preprepared on the Rittal Wire Terminal.

MACHINING TIME

15 – 20

minutes is all the Perforex machining centre needs for an enclosure panel made of steel, stainless steel, aluminium, copper or plastic.

"Our solution is based on a collaborative approach. In other words, we don't want to make everything 100 per cent fully automated. The steps that can be automated will be taken care of using technology and the rest will be down to a member of staff," explains Schneider.

THE ANATOMY OF DATA

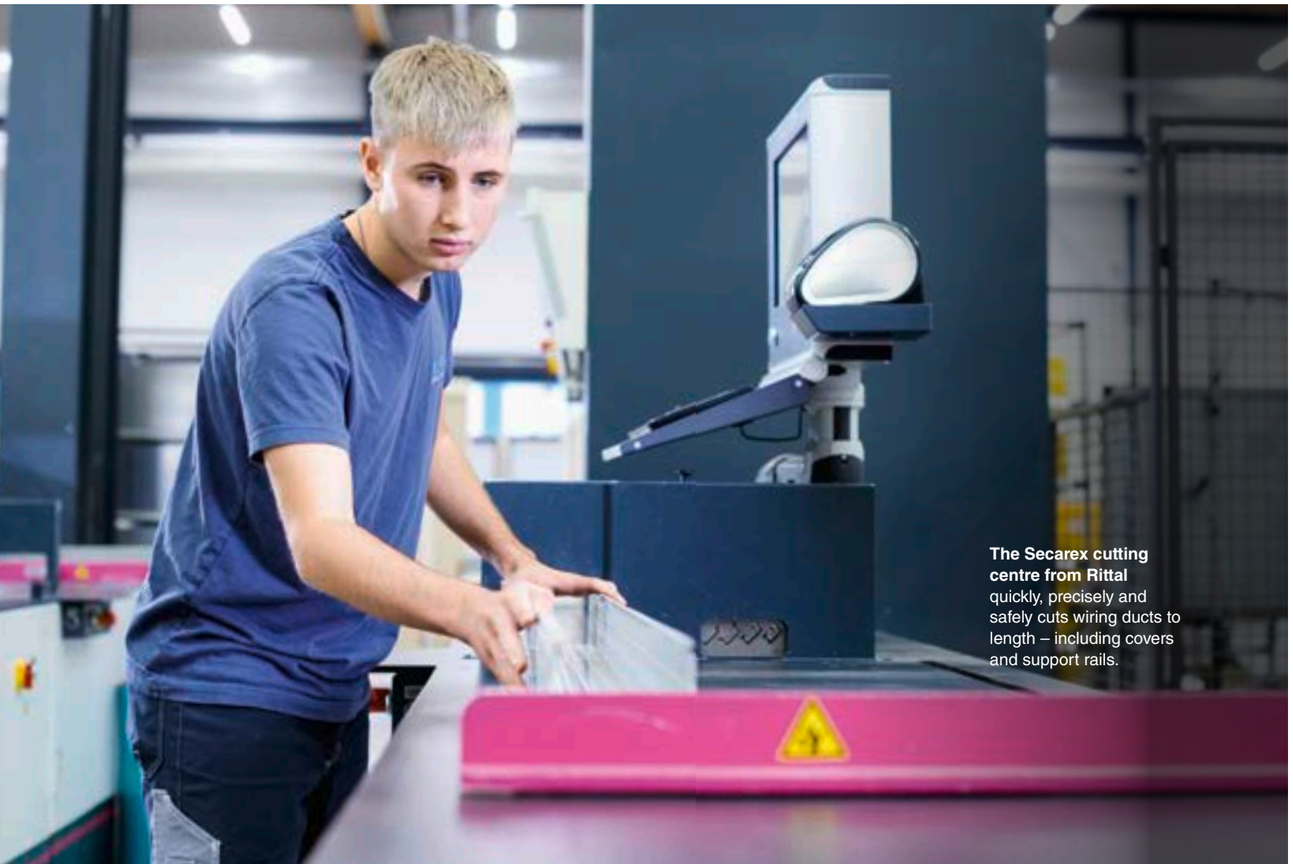
Another area where added efficiency can be achieved is in engineering – but additional gains rely on good data. As far as Schneider is concerned, that is the key to achieving consistency throughout processes, and he offers an interesting analogy: "It's a bit like the human body. You have to understand its anatomy – how is the body constructed, how does it work, what correlations and interdependencies are there? Once doctors know all that, they can suggest appropriate treatments. It's a similar situation when it comes to data. It is the basis for automated and digitalized downstream processing."

The Eplan Data Portal provides this basis. Only recently, a whole host of users were brought on board to help develop a data standard. Initial results have already been incorporated into the portal. Schneider sees this as a step in the right direction: "We need component data from all manufacturers to be standardised and unified. The Data Portal provides the place where data from various manufacturers can be pooled and made suitable for use via the engineering tools from Eplan." However, Schneider is clear that data must satisfy the required high quality standards – just as the data provided by Rittal does.

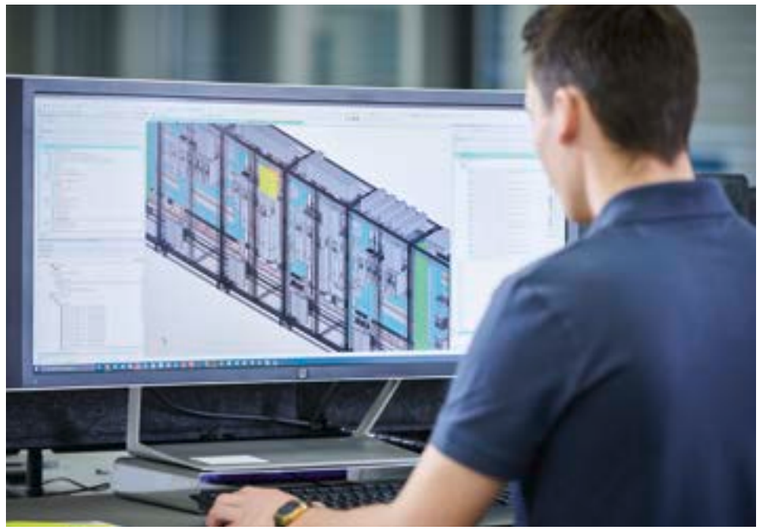
Recent years have certainly seen much faster growth in the number of companies coming to realise the opportunities offered by digitalization. Schneider is confident that this is where the future lies: "I think cloud-based solutions are most certainly an opportunity for companies to work closely together on an overarching basis. Eplan eVIEW is a first step in the right direction. It gives everyone involved access to project data – from engineering, production and assembly through to service and maintenance." Through its free software, the Eplan ePulse cloud environment facilitates structured cooperation with colleagues, customers and other project participants.

"SMART ENGINEERING & PRODUCTION"

The philosophy at W. Althaus AG is not to wait for the market to reveal what manufacturers and companies are developing, but instead to take an active role in driving forward innovation. A key success factor in this is working with strong partners and pursuing development collaborations, not just with Rittal and Eplan, but with Phoenix Contact, too. "Our cooperation is very intensive. We keep in regular contact with all three – discussing developments and optimising processes. We put our heads together to see what the future might hold," says Schneider, describing what it is like working with his partners. The three companies have come together to form a technology network named "Smart Engineering and Production", which suits the approach at W. Althaus AG very well. It all started five years ago and, since then, these ideas have transformed into concrete product innovations. The configurators, engineering platforms, automation solutions for production and digital assistance systems work together hand in hand. Article data is described in a standardised and consistent way for use in the engineering, materials management and production processes involved in enclosure manufacturing. In this way, it helps deliver an entirely digitalized process based on the "single source of truth" principle. The network has also come together to develop standards such as ECLASS for the digital description of articles and article data. ECLASS has since established itself and, combined with Automation ML, is playing an important part in the cross-system provision of data in engineering, configuration and production. Schneider is very positive about the technology network comprising Rittal, Eplan and Phoenix Contact: "Cooperation is vitally important, but not just on the manufacturer side. You also need to identify with users and nurture interaction and contact so you can establish what the customer actually needs." ■



The Secarex cutting centre from Rittal quickly, precisely and safely cuts wiring ducts to length – including covers and support rails.



Engineering (above): All the machines at Althaus AG process data from Eplan Pro Panel, a software package for three-dimensional construction planning in panel building and switchgear.

Label printers (left): These are used for project-specific labelling to speed up the process as a whole.

FIND OUT MORE

Smart Engineering & Production
www.smartengineeringandproduction.com/en/

w. althaus ag
leading in automation

www.althaus-ag.ch/en/home

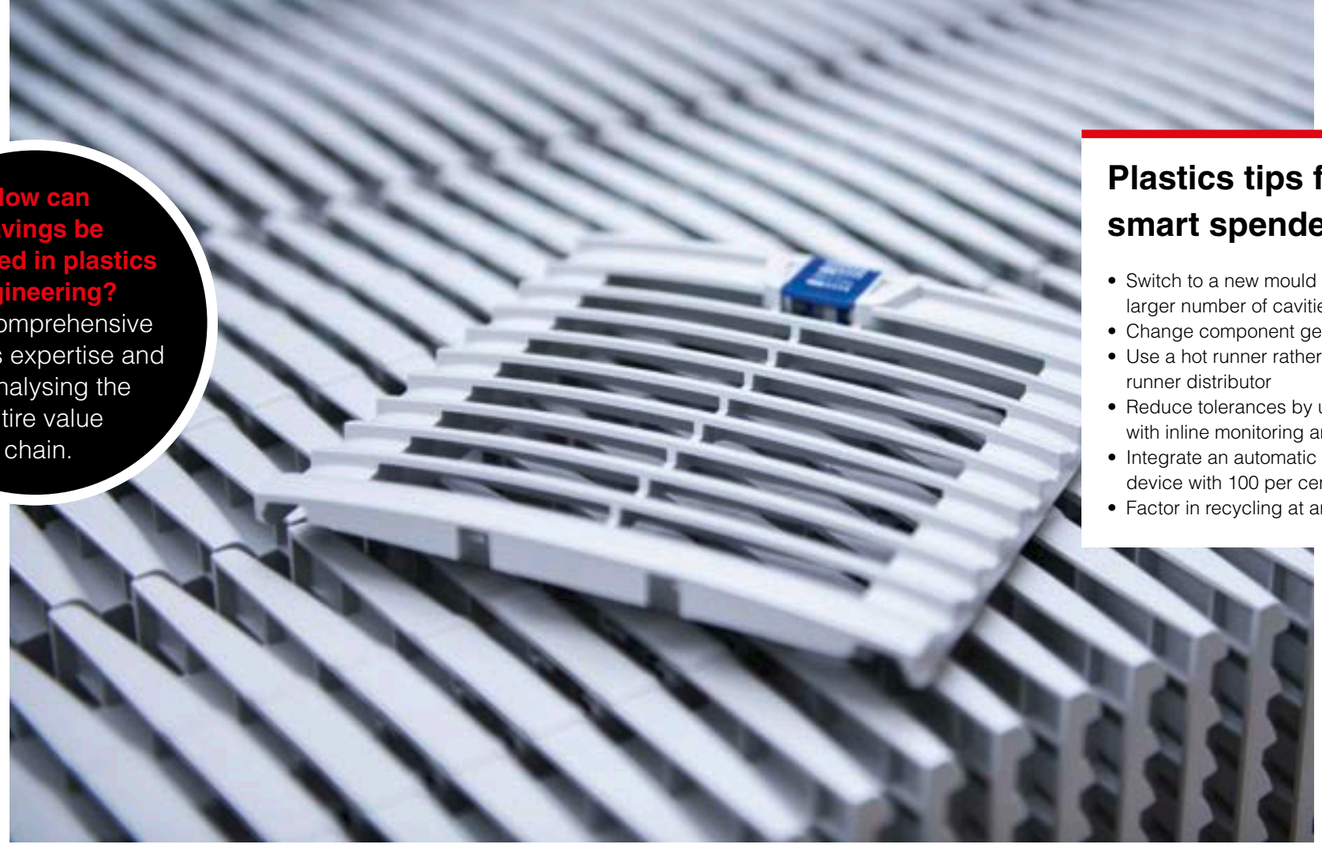
Recognising the potential for savings in plastics engineering

SAVINGS ARE ALWAYS POSSIBLE!

How can savings be achieved in plastics engineering? With comprehensive process expertise and by analysing the entire value chain.

A helping hand for customers. “Every company always has the potential to cut costs by 30 per cent.” **LKH Kunststoffwerk** proves there is some truth in this statement. It systematically assesses and analyses new and existing customer projects to lower costs, a process in which sustainability is playing an increasingly important part.

Text: Meinolf Droege



LKH stands for precision, as here in the manufacture of fan-and-filter unit louvres (left). The plant in Heiligenroth benefits from a high level of automation thanks to robot technology (below).

Plastics tips for smart spenders

- Switch to a new mould with a larger number of cavities
- Change component geometries
- Use a hot runner rather than a cold runner distributor
- Reduce tolerances by using machines with inline monitoring and control
- Integrate an automatic measuring device with 100 per cent checking
- Factor in recycling at an early stage

Helping customers identify cost-cutting potential is something LKH is good at thanks to its comprehensive process expertise from numerous customer projects. This know-how extends throughout the entire process chain, including product design, various process technologies and material types, assembly and quality assurance. “We systematically help our customers gain a little breathing space from competitive pressure, without them having to lower their margins,” explains Managing Director Volker Hindermann.

STANDARDISED PROCESSES

For several years now, LKH has been performing detailed assessments of new projects and analysing the value of all process steps. This includes everything from optimised components to mould design or production process variants, materials management parameters and quality assurance. “Our innovation management goes far beyond typical supplier proposals. We use standardised processes to regularly and proactively examine our customers’ new and existing contracts,” says Johannes Beckert, who is in charge of the Manufacturing Engineering department at LKH. “At the end of the day, the question is always how to cut unit costs for our customers, while still maintaining the same high level of quality,” he adds. LKH discusses appropriate proposals with customers based on the concepts it has devised.

“We systematically help our customers gain a little breathing space from competitive pressure.”

Volker Hindermann
Managing Director of LKH

WHAT IS CONCEIVABLE?

In the case of a call-off contract where the number of items to be supplied kept increasing, for example, options for boosting capacity were identified. Various measures to shorten cycles promised only a short-term solution. The mould specialists at LKH were therefore quick to develop alternative mould concepts and assess the cost-efficiency of each one. In consultation with the customer, this resulted in a stack mould with twelve rather than the previous eight cavities. The increased capacity ensures long-term production reliability, and the mould design makes it possible to use a smaller machine. Both these aspects have a direct impact on lowering component costs.

Where optimised processing parameters prove inadequate for quality-assured processes, the necessary expertise is available for a wide range of alternative solutions. “We may suggest changes to the component geometry based on simulation data or look into using a hot runner rather than a cold runner distributor,” says Head of Mould Management Rolf Peusch, listing potential options. “Another possibility is operating the mould on one of the cutting-edge LKH machines with inline monitoring and control of relevant process parameters such as injection volume, pressure and time in the future to ensure maximum process reliability. These measures, too, always focus on unit costs,” he adds. All kinds of things are conceivable. The prerequisite is knowing the customer requirements over and above the actual component. This means the innovation management review and assessment can cover the entire process so as to maximise the benefits for the customer.

CHANGING THE PRODUCTION STRATEGY

This may also result in a change to the production strategy, as in the case of a louvred component for fan-and-filter units (see above). A special variant required in small quantities was initially milled, but that was comparatively expensive, generated waste and also involved a considerable amount of handling. Given that the capacity of the injection mould was not being fully utilised for the standard variant, the specialists decided to make an interchangeable insert so that, in the future, both variants can be produced in the same mould at far lower costs and with less waste, while also producing a high-quality result.

FACTORING IN RECYCLING EARLY ON

According to Hindermann, it is important with all investments to also factor in recycling at an early stage in the processes. He cites the example of sprues and start-up residues being ground and fed directly back into the process on around 40 of the 55 injection moulding machines. That’s not all, though. The recycled material being used must meet the components’ strength and surface quality requirements. If such components are subject to certifications relating, for instance, to their flame-retardant design, this must be considered in advance. Reliable, well-documented and customised assessments of the technical and cost-related effects help evaluate the alternatives. LKH is already prepared for the expected requirements of the automotive industry in the context of certification to ISO 14001. Should these requirements materialise, LKH has practised, reliable processes and tried-and-trusted partners in the areas of recycling and sustainability. For example, it has reduced the energy consumption per kilogramme of plastic processed by over 20 per cent in the space of four years.

SCOPE ALMOST ALWAYS EXISTS

Experience from current projects shows that the comprehensive analysis of a process almost always reveals opportunities that can be implemented in the short, medium and long term for optimising cost-efficiency while also meeting high sustainability requirements. ■

A strong partnership in tough times

WHEN IT REALLY MATTERS

Times are tough in the steel industry. No, we are not just talking about the coronavirus, although the current steel shortage is, of course, ultimately rooted primarily in the ongoing pandemic. However, the coronavirus crisis has been compounded by a crisis in steel procurement. Even in these tough times, **Stahlo, the steel service centre of the Friedhelm Loh Group**, remains a dependable partner. But first things first.

Text: Markus Huneke

“Despite the coronavirus pandemic, we are managing to supply our partners dependably.”

Oliver Sonst
CEO of Stahlo International

Stahlo supplies Meleghy Automotive primarily with preliminary materials in the form of slitted coils (left).

What makes a good business partner during delivery bottlenecks?
Sticking to delivery promises as agreed.

The fact steel is so hard to get hold of at the moment is a disaster for many processors. When the pandemic started and the downward economic trend took hold, steel producers took measures to adapt their production to the decline in demand. In 2020, the production of raw steel dropped almost 10 per cent in Germany. When industrial production began to recover at the start of the year, steel production did not follow suit. If they run out of steel, processors risk at best delays, and at worst total stoppage. More than anyone else, it is car makers and their suppliers that are under enormous pressure to keep their assembly lines moving.

Stahlo customers don’t need to worry about reliable, on-time deliveries. Quite the opposite, in fact. The team led by CEO Oliver Sonst is continuing to deliver agreed quantities as arranged. “Despite the coronavirus, we are managing to supply our partners dependably. We don’t have access to any more than we had planned for, either, but what we have planned is getting to us,” explains Sonst. How is it working? “The key to success is actually quite simple – we have excellent, long-established contacts with our suppliers and we stick to the agreements we have made. The dependability of the plants is a huge asset for us,” emphasises the CEO.

NO DISRUPTION, PLEASE!

As the most important steel supplier to Rittal and many of its suppliers, Stahlo is a crucial link in the supply chain. Reliability is also a top priority for Meleghy Automotive, a tier 1 supplier to companies including Volkswagen.

Founded in 2012, the company very rapidly established itself as a direct supplier to OEMs, providing structural components and welded assemblies made of steel, stainless steel and aluminium. It also supplies steel processors, including Rittal. Meleghy Automotive has positioned itself perfectly for the growing electromobility market thanks to its four sites in Germany, two of which are very close to the Stahlo sites in Gera and Dillenburg. Among other things, the high-tech processor manufactures floor assembly elements for the ID.4, the first fully electric SUV from Volkswagen. “We are an important link in the automotive supply chain. If one of our components is unavailable, the bodywork can’t be built. That means the flow of materials from us to VW mustn’t be disrupted in any way,” says Dr Gyula Meleghy, CEO of the Meleghy International Group, setting out the permanent challenge.

“Stahlo is an important partner for us – not just in terms of quality and punctuality, but also during bottlenecks.”

Dr Gyula Meleghy
CEO of the Meleghy International Group

PARTNER FOR BOTTLENECKS

If the material flow were to be disrupted, the downtime in production would lead to high costs. That has not yet happened at Meleghy Automotive, but the company is certainly feeling the effects of the reduced capacity among steel producers. “It’s taking a huge amount of effort to maintain supplies and get the materials we need on time,” says Dr Meleghy. This shows just how much a partnership is worth. Stahlo has been a long-standing supplier to Meleghy Automotive for many years. It provides preliminary materials, predominantly in the form of slitted coils, and does so dependably, to the desired quality standards and by the agreed delivery date. “Stahlo is an important partner for us. I’m not just talking about the quality of the products and punctuality, but everything around that, too, such as support during bottlenecks,” emphasises Dr Meleghy.

The supply chain between the two partners has been stable throughout the coronavirus period, too. “Despite the pandemic, everything is going very well between Stahlo and Meleghy and there hasn’t been any notable disruption. That is a huge positive for us, particularly in the present times,” points out Dr Meleghy. ■

FIND OUT MORE

Company websites
www.stahlo.de/en
www.meleghyautomotive.com

COMMITMENT

€220,000

was donated by employees of the Friedhelm Loh Group and the owner Professor Friedhelm Loh as part of their annual donation for 2020. This record sum is being used to support eleven charitable institutions in the Central Hesse region and at the sites of the Friedhelm Loh Group across Germany, plus the Debora Foundation in India.

The SOS Children's Village in Gera supports and looks after single parents in its residential group.

SOS CHILDREN'S VILLAGE IN GERA

Giving families a home

Mother/father and child. The SOS Children's Village in Gera, which is one of the ongoing projects supported by the Rittal Foundation, operates a mother/father-and-child residential group where it takes in young mothers and fathers who cannot stay in their current home environment for various reasons. The support it provides is carefully designed to ensure **young parents** receive intensive support but still have enough freedom to grow into their role as a parent. Support staff do a great deal of work with the parents to analyse and, where possible, resolve problems and issues. There are nine places in total. The residential group has been run on a full-time occupancy basis since 2008. However, the years had left their marks on the **living areas, communal spaces** and the stairwell. The bathrooms had to be completely renovated and the walls newly plastered, papered and painted. Staff from the Friedhelm Loh Group helped finance the necessary materials and skilled labour with a **portion of their annual donation**. The renovation work was completed in September 2020. Since then, families have once again been able to find a place where they truly feel at home.

FOOD BANKS IN HESSE

Junior staff help out

A huge effort with a big impact: Trainees, students and trainers from the Friedhelm Loh Group are currently supporting the **Hesse regional association of food banks**. Under the slogan **"Help for helpers"**, **57 junior staff volunteers** are doing their bit to help feed people who are in need. Their first shift as helpers was at the central warehouse in Wetzlar. The trainees started by collecting food from supermarkets that could no longer be sold. In the warehouse, the teams then sorted through large donations of surplus items and packaged them on pallets. "It makes me proud to see our junior staff doing such outstanding voluntary work," says company owner Professor Friedhelm Loh, adding: "As the region's biggest employer, we have a **responsibility to our local area.** Our apprentices and students are living up to that responsibility."

ELECTRO FEDERATION CANADA EFC

"WOMEN IN TECH" SCHOLARSHIPS

Supporting women

Students Melissa Montenegro (Mohawk College) and Itohansose Itua (University of Waterloo) are this year's winners of the "Women in Tech" scholarship from Electro Federation Canada, which is presented by Rittal Canada. They each received a cheque for US$ 1,750 so they can pursue their careers in the electronics and manufacturing industries.

DEBORA FOUNDATION INDIA

Help during the pandemic

Coronavirus aid. The Debora Foundation was established in the Indian city of Bangalore in 2018 to help members of the country's poorest caste, the Dalit. In India, the coronavirus pandemic is pushing people who were already on the fringes of society into existential need more than anyone else. Millions of families have lost their jobs and cannot get medical care because it is too expensive. This is where the Debora Foundation – named after **Debora Loh**, the wife of the company owner, Professor Friedhelm Loh – is providing support. The International Justice Mission (IJM), which carries out various aid projects, is a partner of the foundation.

A total of 17 families in need have so far been given sewing machines so they can make and sell face masks.

For example, the Debora Foundation is working with the IJM to help families in and around Bangalore who are in urgent need of assistance. Some **5,000 people** are being supplied with balanced **food parcels** and toiletries. So far, **17 particularly needy families have also been given sewing machines** so that women, too, can earn money by making and selling items such as face masks.

The Debora Foundation is also currently helping key workers. To support the important work of medical staff, healthcare personnel and public sector workers, **15,000 high-quality filter masks** have so far been provided as PPE. In addition to these activities, the Foundation is still working to build a school so it can help people from the Dalit caste get an education.

Working hand in hand: One highlight at the new training centre is learning how to program and use a collaborative robot – cobot for short.

The next generation at the Friedhelm Loh Group

DEDICATION TO TRAINING

Two trends are currently keeping companies on their toes – digitalization and demographic change. They're causing a big shake-up, including in training! With its **new training centre, Rittal** is making a huge investment in young trainees and getting them ready for the future. We take a look at the honing ground for talented young individuals in Haiger, with particular emphasis on technical training.

Text: Michael Siedenhans

On a visit to the new Friedhelm Loh Group (FLG) training centre, Christian Dross is awestruck. "That's so cool!" he says. The centre is just a stone's throw from the new Rittal plant in Haiger, where Dross now works as a production controller. His former Head of Training, Matthias Hecker, is showing him round the large, elongated main room in what used to be Hall 15. Dross started his electrician's apprenticeship at Rittal in 2012. Back then, he was based in Wissenbach. A distance of 12 kilometres separates the old training centre from the new one in Haiger, but the two are worlds apart in terms of equipment and scope. FLG owner Professor Friedhelm Loh has invested 1.3 million euros in training new blood here.

SEEING AND LEARNING ABOUT INDUSTRY 4.0

That's immediately apparent. An ABB robot and a collaborative robot – cobot for short (pictured on the left) – that works in tandem with humans are among the highlights of the cutting-edge machine park. In the CAD/IT classrooms, training staff use whiteboards to explain, for example, how a programmable logic controller works. There's also a 3D printer for producing small components. "Our training centre is a cornerstone for digital learning throughout the entire Group. It's a learning system that includes various areas of production – from the assembly line, lean production, logistics and quality assurance to robot training," explains Hecker. "As a result, apprentices see and learn about the interaction of humans, machines and digital processes based on Industry 4.0 – now and in the future," he adds. Jakob Schönauer (19) is a big fan of this approach. "I like being here because the conditions are excellent, the training team is brilliant and the proximity to the plant means we gain a great deal of insight into high-tech manufacturing," says the aspiring mechatronics engineer.

1,300,000

euros was invested by Rittal in the new training centre.

1,000

square metres is the area covered by the new training centre.

40

young people – chosen from between 800 and 900 applicants – embark on a technical apprenticeship each year.

Right next door, at one of the world's most state-of-the-art production plants for small and compact enclosures, specialists use their expertise to ensure the robots work properly and are supplied with materials by autonomous guided vehicles. This is the reality of Industry 4.0, which is gathering pace thanks to digitalization and has also resulted in an extremely rapid change to the training content. "Today's training is interdisciplinary and holistic, because digitalization is creating new ways of working. Machine operators now no longer need to set up and control equipment themselves. Their main tasks are monitoring and performing checks, which requires very different knowledge from a few years ago," says Hecker.

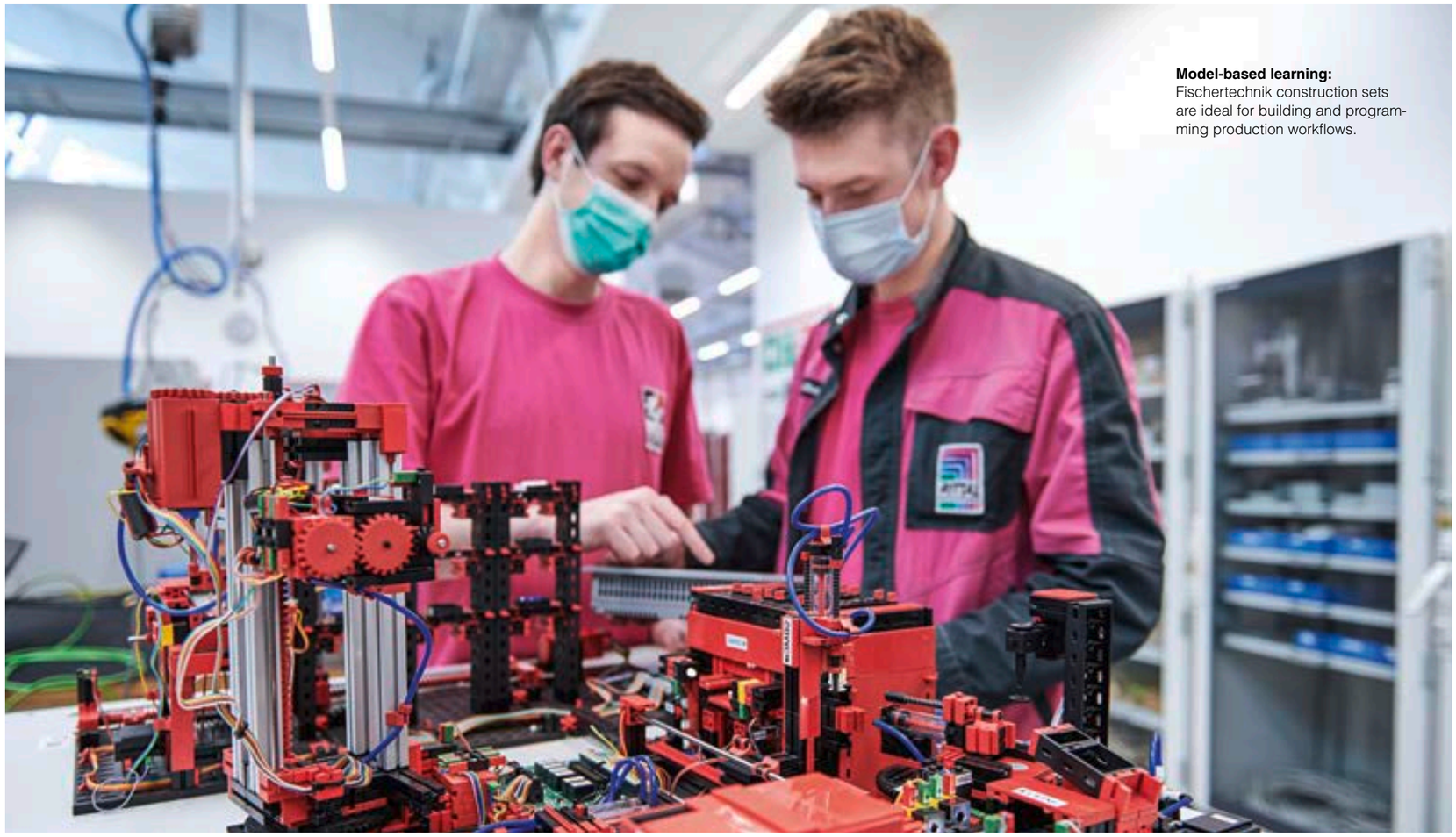
THE WORLD OF TRAINING

At the new centre, 40 young men and women are currently undergoing technical training. They aren't the only ones at the company who are working towards ▸

230

young professionals are currently learning and studying at the company.

Ideal career: His mother suggested applying to Rittal and Head of Training Matthias Hecker (right) recognised his potential. Having completed his apprenticeship as an electrician at Rittal and obtained a bachelor of engineering degree, Christian Dross (27, left) is now a production controller.



Model-based learning: Fischertechnik construction sets are ideal for building and programming production workflows.

“The company has always given me the freedom to push myself.”

Felix Klehmet
Head of Operational Services at Eplan

becoming the specialists and decision-makers of the future. Over the past five years alone, around 300 individuals have learned a trade at the Friedhelm Loh Group.

A total of 18 different commercial, technical and IT professions are available – and that’s just a small part of the Group’s extensive training portfolio. Committed, ambitious trainees with a basic school leaving certificate can use the “LehrePlus” (Apprenticeship Plus) scheme to obtain their university entrance qualification, while school leavers with an “Abitur”-level qualification can complete a dual work/study programme to obtain a bachelor’s degree and university graduates can embark on a trainee programme to obtain initial professional experience in sales, consulting or research and development. A total of 230 young trainees are currently taking advantage of the various options as a springboard to a career at the company.

HOME SINCE HIS TRAINING DAYS

Felix Klehmet has already benefited from this opportunity. His parents had totally different plans for him when he was taking his final school exams 12 years ago. They thought he should continue his studies, but he didn’t want to – at least not immediately. “After leaving school, I wanted to do something practical rather than returning to the classroom,” he explains. Klehmet applied to Eplan for an apprenticeship as a wholesaler and retailer. Once he had completed his training, the HR department offered him the chance to study while continuing his career. “It was a great opportunity because I was keen to remain at the company and further my education,” says Klehmet. His wish was soon granted. In the 2012 winter semester, he started attending the RFH University of Applied Science in Cologne two evenings a week and on Saturdays to study for a bachelor’s degree in business administration. It was a stressful time, but it was well worth the effort. The former apprentice is now Head of Operational Services. At 32, he is the youngest head of department at Eplan. He is responsible for all facility management operations at the German sites of Eplan (8) and Cideon (8), and also at their international sites in 25 other countries. Klehmet is additionally in charge of the entire Eplan vehicle fleet and its central warehouse. What made all this possible? “The company has always given me the freedom to push myself and the timing has always been perfect. The right offer has always come along at the ideal time. My decision to remain at the company was spot-on. I feel very much at home here,” he says.

WINNING OVER GENERATION Z

One key objective of the entire training programme is getting apprentices to remain with the company by offering them prospects for a successful professional future. Recruiting young apprentices isn’t all that easy, though. Tina Pfeiffer-Busch, who is in charge of commercial training, is making increasing use of digital platforms, channels and formats. “The coronavirus pandemic has made it virtually impossible to get to know potential applicants in person. Job and career fairs are currently only taking place online,” she explains. Anke Wojtynowski-Scharf, a member of the HR development team for junior staff, also misses having face-to-face contact. Before the pandemic hit, she used to go to high schools to promote the dual study programme at FLG, which gave her an insight into what schoolchildren expect of their future employers. “Generation Z considers good support to be important and favours a participative approach to work,” says the HR expert. The company has responded to this. For the duration of their studies, dual programme students are allocated a mentor for their personal development, along with a coordinator who plans the best possible projects in Germany and other countries with them. Even after completing their studies, graduates still benefit from optimum support thanks to a two-year cross-mentoring programme.

COMMUNICATING WITH RESPECT

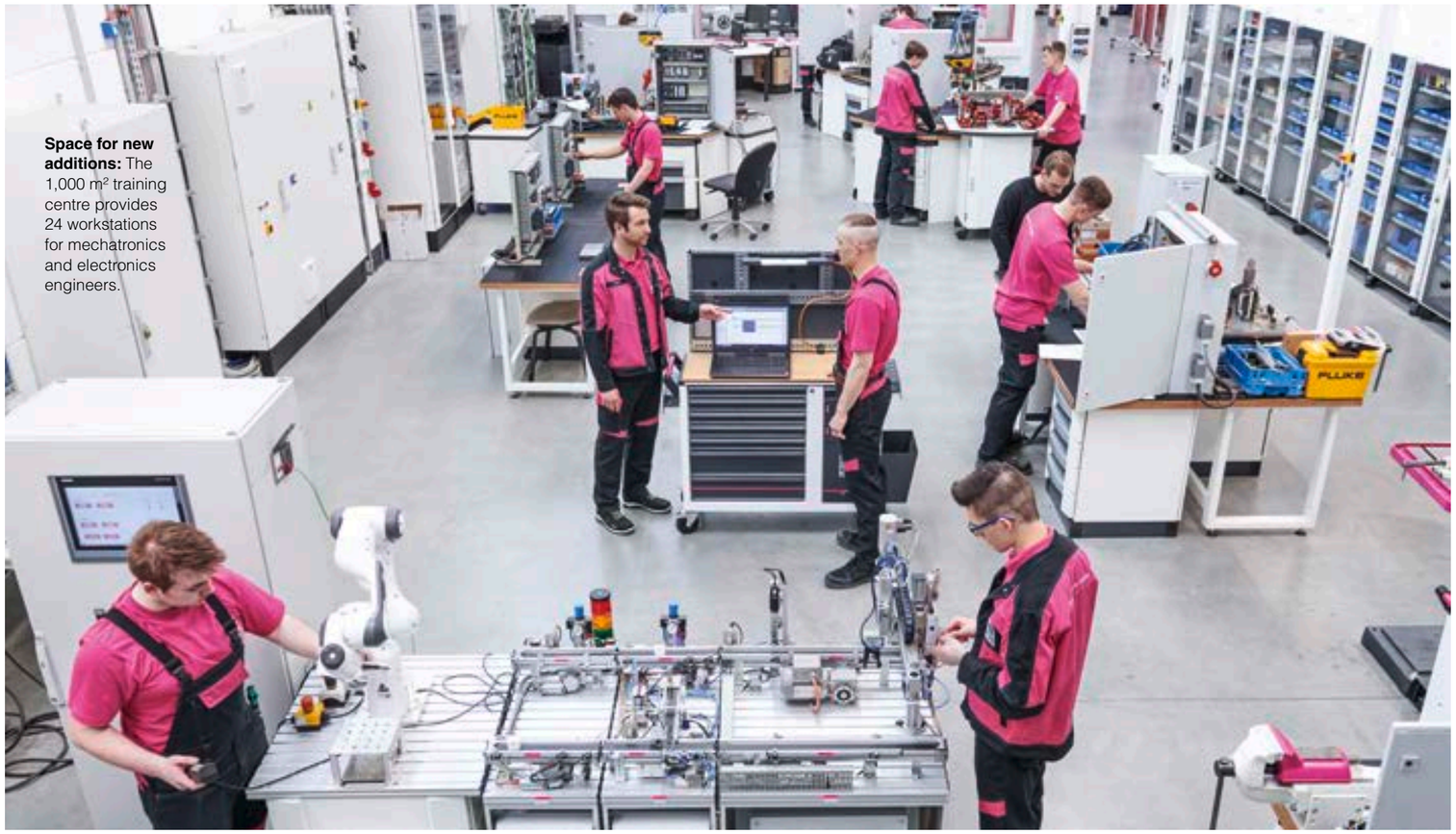
Hecker and Pfeiffer-Busch have both noticed that the current generation of trainees is different from the previous one, which has consequences when it comes to communication at the company and the content of training. “They ask questions and expect rapid answers,” explains Pfeiffer-Busch. “Trainers and trainees now communicate with each other on an equal footing and always show each other great respect,” emphasises Hecker. “That’s how we get across to each and every young apprentice how important they are to us,” he says. This is vital because, ideally, they will remain at the company after completing their training. According to Hecker, this works to the benefit of the Friedhelm Loh Group and customers alike. “The longer staff work for us, the more familiar they are with the upstream and downstream systems and processes that are now required to develop, manufacture and roll out a product – and the customer sees that,” he emphasises.

OPPORTUNITIES OF A DIGITAL WORLD

Commercial training has changed, too. Pfeiffer-Busch explains why: “In a digital world, commercial staff not only require good digital skills, but also need to be open to anything, because having a commercial mentality and the relevant expertise is now a must in many areas,” she says. As a result, commercial apprentices are given all-round training. They work in controlling or quality management and also learn about Industry 4.0 in production. “That means young commercial staff can be deployed in a wider range of areas, which opens up even more opportunities for them in a digital world,“ continues Pfeiffer-Busch, explaining the advantage of this approach.

LEARNING FROM OTHER TEAM MEMBERS

Getting to know the different areas and staff at the company has another benefit for apprentices. “They learn how to interact with colleagues and also feel they are part of a big team in which they can work independently,” says Eplan HR Officer Amelie Ribbing. A particular point is made of encouraging this team spirit during the Trainee Days at the former Gnadenthal monastery – a training and meeting venue with a difference, where the apprentices from a particular year get to know each other and learn from one another.



Space for new additions: The 1,000 m² training centre provides 24 workstations for mechatronics and electronics engineers.

During the two-day workshop, the interdisciplinary groups are given a project-related task set by company owner Professor Friedhelm Loh. At the end of the year, he also presents awards to the winners of the competition, which calls for and encourages knowledge transfer.

TRAINING IN THE USA

Let's now turn to training at the international sites of the companies in the Friedhelm Loh Group. In the USA, for example, professional training is normally academic, that is to say theory-based, and mostly takes place at a community college. "We're delighted that the training of young Americans at the Rittal site in Urbana, Ohio, will now include theory, practice and interdisciplinary learning," says Quality Engineer Dan Yohey. Last year, he and his colleague Nick Frost created three formal apprenticeship programmes that combine theory and practice based on the American system. This takes the form of a scholarship for students, who complete a series of work placements at the Rittal plant in Urbana while studying at college. The project receives financial support from the state of Ohio. It is aimed at students of industrial engineering, controls and manufacturing engineering and maintenance technologies. The cooperation partners are Clark State College, Edison State College and the University of Dayton. Four students are currently participating in the programme. "And they're excited about the opportunity to put the theory they learn into practice while also obtaining lots of practical knowledge with us," continues Yohey. He describes the approach as a classic win-win situation, because the Urbana site also benefits from the trainees. "The four students have already more than met our expectations. We're hoping that once the programme is over, these highly-trained professionals will remain with us," he says. While at the company, the students obtain guidance, support and advice from their own personal mentor. Frost and Yohey have selected ten members of staff for this purpose. That means they have six more scholarship places, which they are hoping to fill this year – despite the pandemic. The terms are certainly very attractive, with Rittal paying all tuition fees until the apprenticeship program ist completed. What is its motivation for doing so? "The reason we pay so much attention to the working students is that the retention rates of employees who complete these types of programme are extremely high," reveals Yohey.

"The apprentices learn and also feel they are part of a big team."

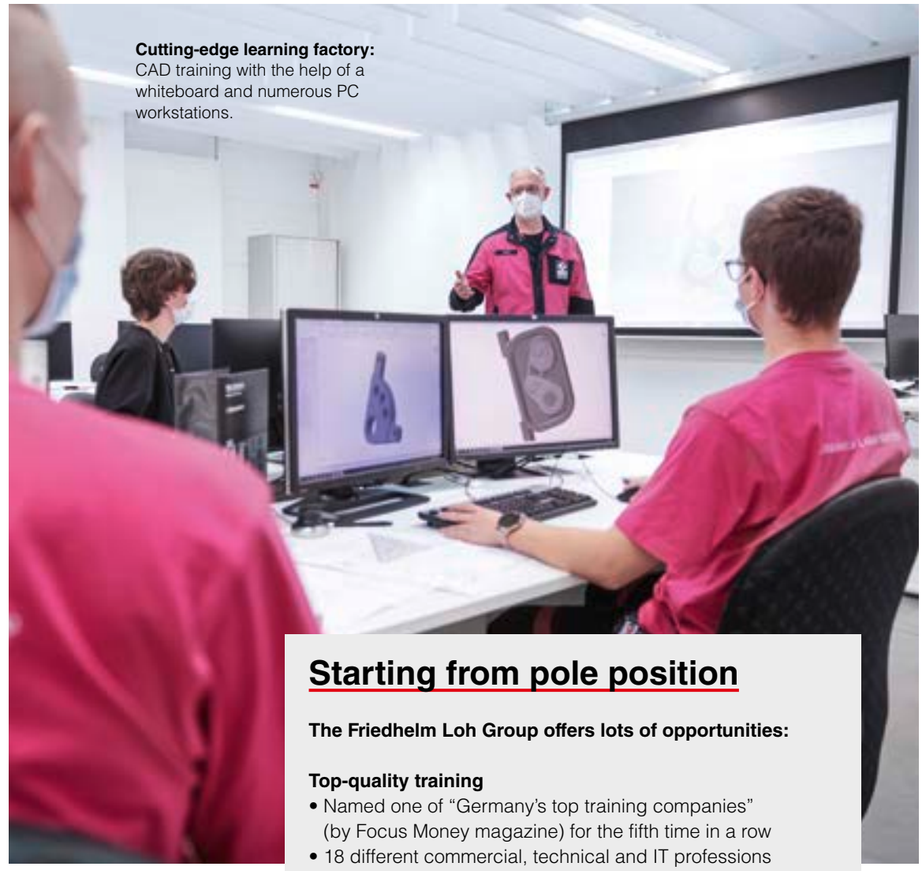
Amelie Ribbing
HR Officer at Eplan

4

students are currently participating in the scholarship programme at the U.S. site in Urbana.

TRUE DEDICATION TO STUDENTS

Hecker's experiences are the same as those of his American colleague. "You need to do absolutely everything you can to look after your apprentices from the second they sign the training contract," he insists. The Friedhelm Loh Group does exactly that. Even before their training starts, the young men and women are invited to company events, sent Christmas greetings, and congratulated on their birthday and graduation. "In this way, we show the young recruits that they belong to the team from the outset and we value them highly," says Hecker. He underlines that everything has to be right. Otherwise, it's difficult to hold onto junior staff and ensure their long-term loyalty to the company. "A great deal of passion and dedication is required," concludes Hecker. ■



Cutting-edge learning factory: CAD training with the help of a whiteboard and numerous PC workstations.

Starting from pole position

The Friedhelm Loh Group offers lots of opportunities:

Top-quality training
- Named one of "Germany's top training companies" (by Focus Money magazine) for the fifth time in a row
- 18 different commercial, technical and IT professions

Junior Competence Centre
Apprentices develop skills:
- Social: Working together on multidisciplinary projects based on CIP principles
- Specialist: Competition/industry analyses, pricing, marketing/psychological aspects and technical assignments
- Digital: Using and developing IT systems

StudiumPlus
A combination of theory and practice:
- International: Semesters with study/work placements in other countries
- Personal: Interface skills and support through a mentoring programme

FIND OUT MORE

The careers portal of the Friedhelm Loh Group
www.friedhelm-loh-group.com/en/karriere/index.asp

Issue 02|2021

Helping the environment

Opportunities for saving energy are everywhere, but which measures are worthwhile and can be implemented on a big scale? Viega, a world market leader in sanitary and heating installation technology, is one of the businesses to have asked itself this very question. At its German sites alone, the company has reduced energy consumption by ten per cent over the past five years. Viega is continuously looking into implementing energy-efficient measures, with the new Blue e+ cooling units from Rittal playing a key role. Its Grossheringen site was equipped with 138 units of this type in the space of 22 days, which is having a very positive impact – not least on the environment.

Find out more in the next issue of be top!

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THE POWER OF SIMPLICITY

The new VX SE free-standing enclosure system

The new VX SE from Rittal offers benefits that are often underestimated. In addition to perfectly bridging the gap between AX compact enclosures and VX25 bayed enclosures, it also impresses with an even faster time-to delivery, quicker and easier assembly, enhanced safety and excellent system compatibility. It can be used as a stand-alone solution in many areas of industry and facility management – in the case of compact machinery and equipment, where power distribution and automation components can be accommodated in a single enclosure, for instance. This makes the VX SE an intelligent combination of modularity, compatibility and a stand-alone approach that enables engineering companies to increase their productivity. You can find out more about this innovative system enclosure in the next issue of be top.

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