

betop

MAGAZINE OF THE FRIEDHELM LOH GROUP

Everyone's a winner

How manufacturers and users are benefiting from one database.

Fit for the US market

The strict standards in the USA require strong partners.

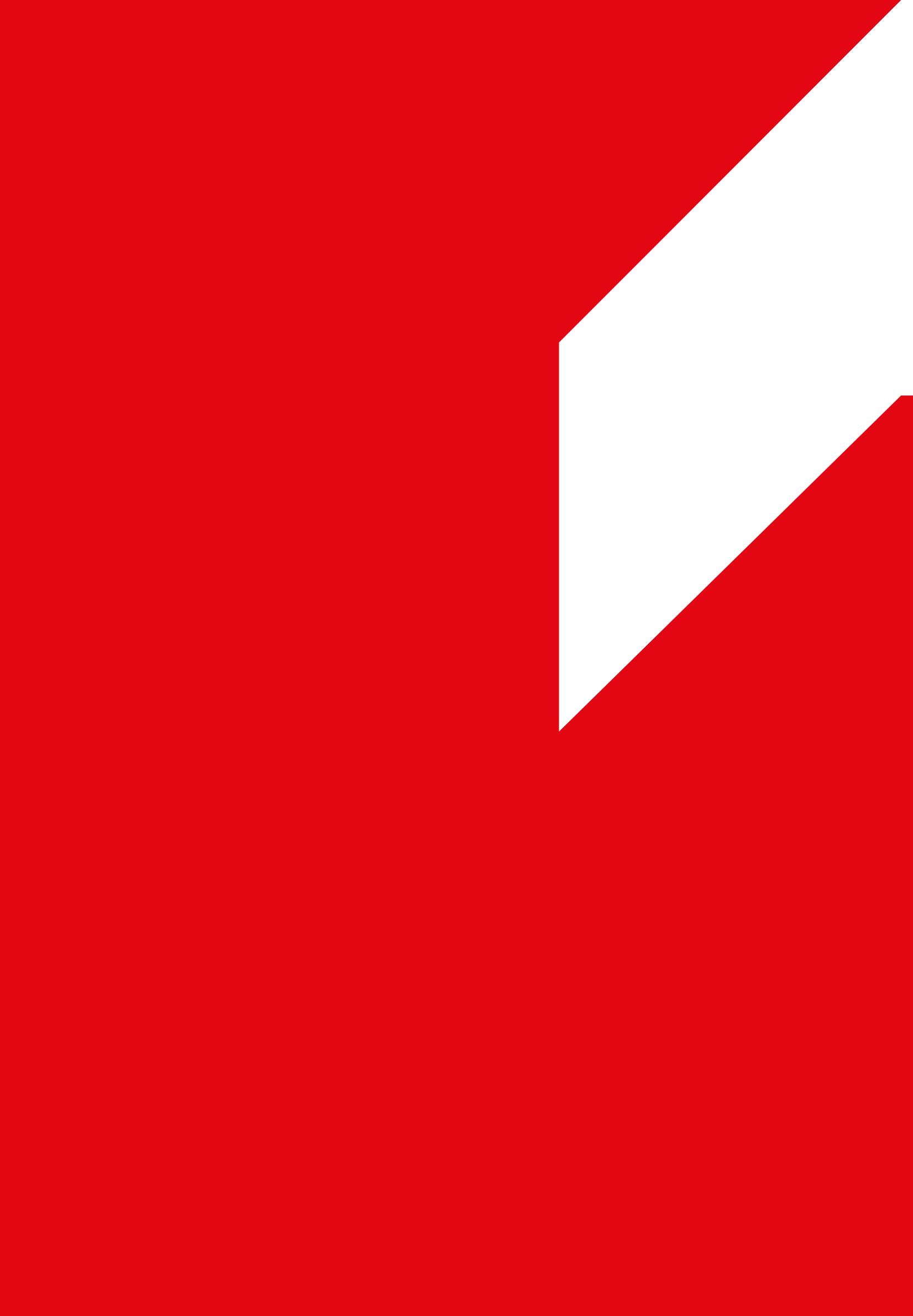
The wait is over

How to facilitate work place entry for refugees.

FOCUS **SPEED**

The pacemaker

They are the unsung heroes out of the up to 25,000 marathon runners, the people who help other runners reach their target in a specific time. Pacemakers are also boosting success in the electrical engineering sector.



Progress

Dear readers,

Speed has an undeniable allure – whether on the roads, surfing the Internet or working with a high-tech production system. It impresses us. It moves us. It drives us forward. The yearning to be faster than others is a motor for maximum performance and a driving force for innovation.

Acceleration is indispensable. Your customers and ours increasingly expect products that can be delivered in the shortest space of time and with maximum punctuality. End-to-end and automated processes are an essential ingredient, and to achieve those, you need strong partners at your side. We see ourselves as a pacemaker – here to help you achieve even better results faster, and use fewer resources to do so.

Electrical engineering already offers huge potential for stepping everything up a gear. Just like all the solutions in the Friedhelm Loh Group, the programs and interfaces from Eplan and Cideon are custom-made for the needs of industry. Agile development processes and early test phases in the customer's environment demonstrate our collaborative approach and close coordination on development projects.

Speed is particularly important when technology fails, or threatens to fail – and that is precisely where our global service networks come into their own. All the same, it is not just our experienced specialists all around the world who help safeguard the system availability of control systems and switchgear. By networking cooling units and chillers, we can harness new opportunities for predictive maintenance and actively help prevent future plant failures.

However, as digitization and Industry 4.0 continuously ramp up the pace, it is worthwhile slowing down day-to-day life and taking a moment every now and again. Those times help us keep sight of the challenges that surround us. The Friedhelm Loh Group is currently using a new pilot project to help refugees who lack school leaving qualifications, training or good language skills. I am very happy that our staff are actively contributing to this work and thereby laying the foundations for fully comprehensive integration that reaches beyond working life.

I wish you plenty of valuable inspiration for a dynamic future!

Dr Friedhelm Loh



Dr Friedhelm Loh

Owner and CEO of the Friedhelm Loh Group

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BE TOP!

► Your opinion matters

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





SNAPSHOTS

Deep down

Dark passageways, bizarre rock formations, damp rock faces and an almost eerie silence – exploring a cave is an unforgettable experience. To make such adventures even better for visitors, German company **Cave Lighting** has been installing state-of-the-art lighting, music, monitoring and power supply systems in publicly accessible show caves since 2005. In doing so, the company uses robust AE compact enclosures from **Rittal**, as the stainless steel systems are ideally equipped to withstand the tough climatic conditions underground. Besides the Kluterhöhle caves in Germany, Cave Lighting has also brought underground lakes, petrified creatures and stunning corals into view at the Caves of Han in Belgium, the Balcarka Cave in the Czech Republic and the Caves of Is Zuddas in Italy.

► www.cavelighting.com/en

SNAPSHOTS

High above

Those who dare look down upon the clouds certainly shouldn't suffer from vertigo. Starting from this, and assuming you can get over any fear of heights you might have, pay a visit to the 148th storey of the Burj Khalifa, in Dubai, where you'll have to use the world's highest revolving door. The door was made by **Boon Edam**, the market leader for entrance solutions, headquartered in Edam, Netherlands. On the IT side of things, the company relies on an integrated PLM solution based on SAP 4/HANA – with support from **Cideon**. The core of the solution at Boon Edam is to automatically integrate design drawings into SAP and to create a central source for locally created data – a “single source of truth” – that can be accessed throughout the company. Moving forward, drawings and relevant documents for procurement and offers management will also be automatically generated in accordance with defined rules.

► www.boonedam.de



Limits are just in your head

Global. Energy, digitalised schools, ventilation – customers around the world rise to the challenges with the products and solutions from **Friedhelm Loh Group** companies.



UK

Taken to extremes

OFFSHORE WIND TURBINES in the **ENGLISH CHANNEL** off the British coast supply thousands of people on the island with sustainable energy. For reliable operations, Bosch Rexroth counts on Rittal HD compact enclosures for outdoor applications and stainless steel AE enclosures. Bosch Rexroth chose high-quality solutions from Rittal because conditions out on the open sea subject the technology to extreme stresses and strains.



USA

Fresh air

A GOOD INDOOR CLIMATE in companies, school buildings and hotels requires one thing above all – fresh air. The company Greenheck Fan Corporation can provide it, developing products for ventilating buildings and control equipment. Since its founding in **SCHOFIELD**, Wisconsin, in 1947, Greenheck has developed from a small local shop into an international supplier. They manage more than 3,500,000 designs – supported by Cideon – in SAP Product Lifecycle Management.





GERMANY

Right of way for data

Phoenix Contact in **BLOMBERG**, Germany, is advancing **DIGITIZATION** in manufacturing. To improve their own digital production processes, the leading supplier of automation systems relies on an interface developed by Eplan. It links the company's Product Lifecycle Management (PLM) system with the Eplan solutions the company uses, thereby increasing data continuity and integration.



INDIA

One-stop shop

A TOTAL OF 1.3 BILLION people live in India, and every one of them must sign up with the National Population Register. A new data center is needed so that all the recorded data – including name, age, address and occupation – can be digitally processed. Rittal delivered the complete data center infrastructure for this project to Dell India in **BANGALORE**. Rittal won the order primarily thanks to its excellent reputation.

1,300,000,000



CROATIA

Back to school with Rittal

DIGITAL WORKING WORLDS require increased digitization in schools and in Croatia, the first step is being taken. As part of the EU-sponsored "E-School Diary" project, telecommunications provider Supranet d.o.o., headquartered in **ZAGREB**, is providing necessary Wi-Fi infrastructure for a total of 145 primary and secondary schools. The company is relying on Rittal network enclosures and Flat-Boxes.



CHINA

Caught in the heat/cold

AVERAGE TEMPERATURE DIFFERENCES of almost 40 degrees Celsius are the norm between the hottest and coldest days in **CHANGCHUN**, China. While these fluctuations are naturally challenging for employees at China's FAW-Volkswagen Automotive, they can also be hard on the machines and plant systems. That's why 100 Blue e+ cooling units from Rittal will soon be deployed for manufacturing components and engines. They ensure stable cooling paired with low energy use.

39.9°



The pace

Speed. “Speed is not to be toyed with,” says Dirk Pretorius.

And he should know – the passionate runner has learned how to manage his pace to great effect. At the age of 48, he has completed marathons, cross-country competitions, and ultramarathons of over 100 kilometres – and is now a familiar face in the European running scene. He is a recognised pacemaker, one of the unsung heroes in crowds of up to 25,000 marathoners. His role is to guide other runners to the finish line within a specified timeframe.

Text: Ulrich Kläsener



maker



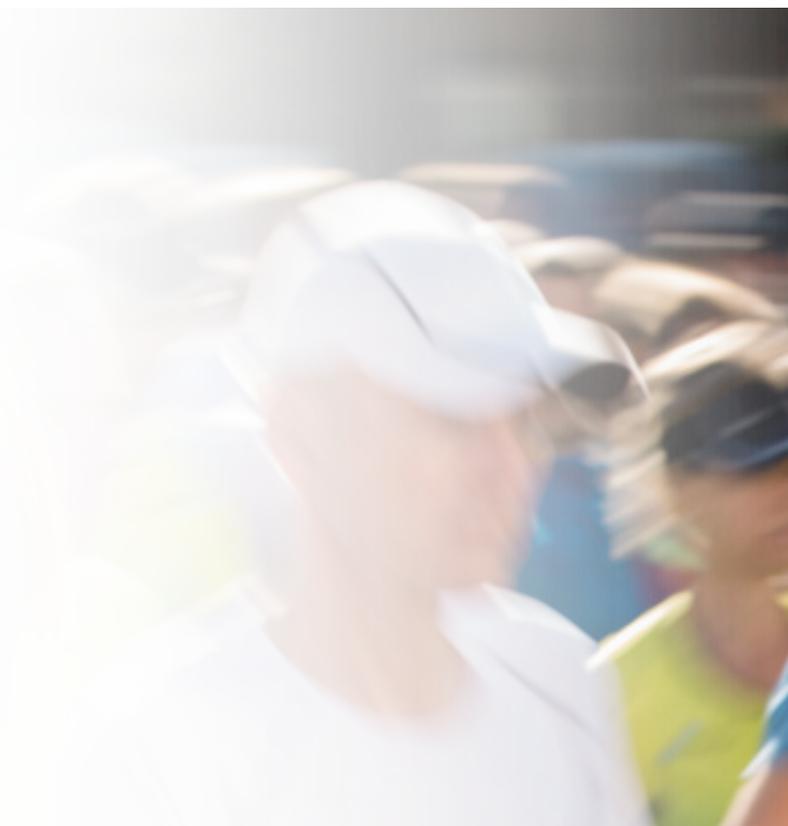
Pacemakers help other individual runners or groups maintain a specific, competitive pace, by maintain a set speed as consistently as possible. Dirk Pretorius (48) is one of them. Even daunting, 100-kilometre ultramarathons do not faze him.

Pacemakers, also dubbed pace-setters or rabbits, are employed by race organisers at many high-profile events. They run at an even, defined pace, to aid frontrunners or other participants. Racing in a group, or in the slipstream of a peer (a tactic called drafting), reduces physical and mental stress compared to maintaining a constant pace on one's own. And pacemakers do not just help the top athletes. In nearly all major marathons, there are "rabbits" for contestants in the middle of the pack. The role is given to experienced runners who can maintain a constant speed and lead their peers to their destination in, for example, under five, four or three hours.

1 October 2017, 9am. Dirk Pretorius is hopping from one foot to the other, seemingly calm and cool-headed before the starting shot sounds at the Cologne Marathon. And why shouldn't he be? Pretorius is a man who's always on the move. He is accustomed to clocking 3,500 kilometres a year, and to retiring four pairs of worn-down running shoes in a single season. And he doesn't mind shouldering a backpack with emergency equipment for 42.195 kilometres, all the way to the finish line at Cologne Cathedral.

In the coming hours, he will bear an additional burden: the personal goals, dreams and struggles of his pace group. By the end of the race a peloton of runners has gathered on his heels, hoping to reach the finish line in less than four hours. 4:00 is printed in thick, easily visible digits on Pretorius's bib – and, in 2016, on a large hot air balloon, signalling to an audience of 500,000: this is a pacemaker. "We are there to slow participants down or to speed them up, to help them achieve their race time goal."

But what exactly do pacemakers do? It is not just about being swift of foot and running ahead of the pack. Above all, they need to precisely maintain their assigned speed, and sustain it over a long period of time. As "race managers", they keep an eye on the big picture: they know where the refreshment stations are, provide advice and motivation, and are, as a general rule, masters of their chosen craft. Not only is personal fitness pivotal to pacemakers; they also need to know the ins and outs of the course, including any pitfalls. „Pretorius explains: "I do not run a route that I don't know in detail. I don't want any unpleasant surprises during a race." Consequent- ▶



A pacemaker in both worlds

DR KARL-ULRICH KÖHLER

Chief Executive Officer of Rittal GmbH & Co. KG



Rittal as a pacemaker. Is that an idea that appeals to you? It is more of a business model than a vague idea. We definitely see ourselves as a pacemaker in electrical engineering – both nationally and internationally.

Could you give us some examples? Let us look at the past. The concept of standardisation in control and switchgear manufacturing came from Rittal. This is a pioneering approach that has been heavily adopted around the world. It helped make Rittal the global leader for enclosures and cooling systems in control and switchgear manufacturing.

Rittal was also the first to apply the power of IT to manufacturing in electrical engineering. And that was over 30 years ago. The decision on the part of the Friedhelm Loh Group to acquire Eplan – at the time a three-man company – is evidence of an ability to identify emerging

trends and developments. Today, digital design in electrical engineering is just as important as the actual product. It is only possible to make steel enclosures because the relevant data is available across all corresponding processes – from engineering, to manufacturing, to machining, to commercial tasks.

You are referring to the blending of physical and digital workflows as a key aspect of Industry 4.0. Rittal is consciously pushing ahead with digitization at a fast pace – for example, with its web-based configuration systems, smart products, and the Rittal Innovation Center. We have to. There are significant challenges in control and switchgear manufacturing, as there are in engineering generally. Profitable development and production – not forgetting logistics – require two elements: a high degree of standardisation and optimisation of entire value chains. It also calls for

end-to-end data integration – including customers, partners, and users. To us, digitization means delivering better results in even less time and with fewer resources – enabling our customers to achieve their goals.

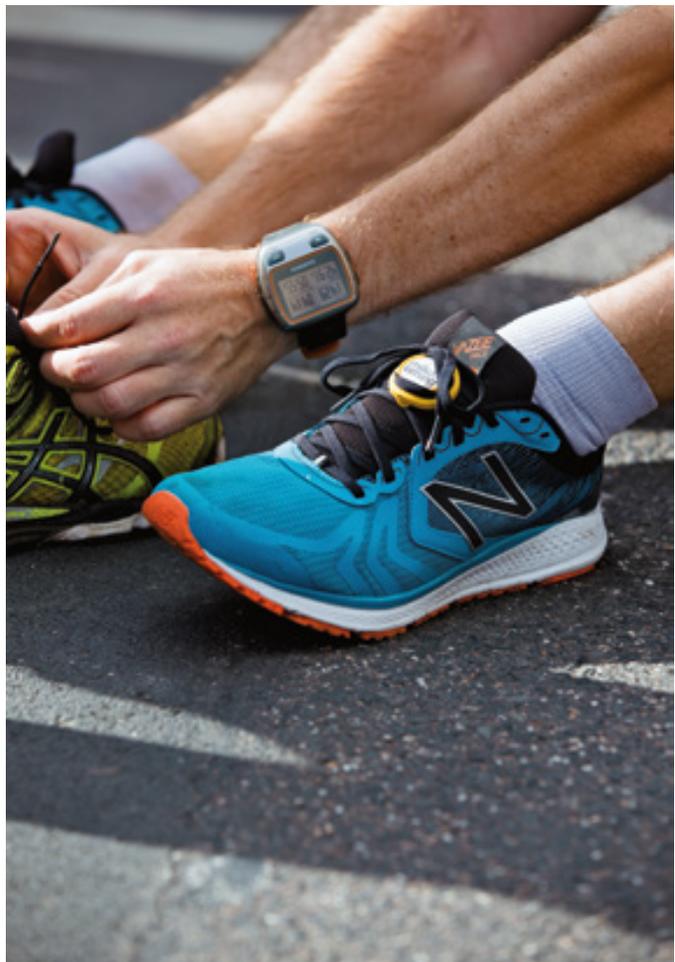
More efficient business operations, and the ability to provide new and improved products more rapidly, is a very attractive proposition. However, amongst many mid-sized companies, there is still uncertainty regarding the speed of digital transformation. It's not really about whether a business sees itself as an innovator, fast follower or late adopter in the digitization of their engineering, for example. The decisive question is: where is the value-added and what value drivers can be activated? Once you have found a company-specific answer to these questions, things need to get moving right away. The competition never sleeps.



ly, he researches the course online in advance, and explores best practice scenarios using analyses and reports. With these resources, he can deduce where he may need to encourage runners to slow down or speed up.

“A good pacemaker runs very evenly and consistently. We never run at full throttle. And I am not focused on the finish-line time – instead, I keep track of the times for each stretch,” underscores Pretorius. To this end, he monitors his progress using a GPS watch and, most importantly, the kilometre markers. In fact, the digital age has already had a significant impact on both professional and amateur sports. There are now extremely lightweight transponder systems (timing chips) that can be attached to shoes or bibs to record a runner’s times and verify their distances. The chips register the runner’s start and finish times, and times for any number of points along the course. Data is provided to participants and the media, and made available on the Internet in real time. Bits and bytes also play an important role in preparing for these events. Information is entered into online running logs, and stylish running watches inform wearers of calories burned, heart rate, elapsed distance, number of strides taken, and change in altitude – facts and figures that avid runners are often eager to post on Facebook or WhatsApp.

However, the many capabilities of digital technology simply serve to document and underline the effort required on the part of the individual: they need to run, run and run some more. Ideally not too fast, and not too slow. “Many men are too focused on being fast. But stamina is about consistency. If you don’t take that to heart, things can go badly wrong.” “After all, a marathon gets difficult at kilometer 30/mile 18. At that point, runners’ mistakes catch up with them, and they either suffer for them and push on, or drop out,” observes Pretorius. He knows all too well how something as simple as forgetting to tie shoelaces in a double-bow can spell disaster. “I once stopped and bent over to tie my shoe, stood back up, and was hit with cramps.” Careful, thorough preparation, including a personal train- ▶



Digital twin in focus

MAXIMILIAN BRANDL

Chief Executive Officer of Eplan and Cideon



Is engineering all about speed nowadays? That depends on the customer. If you need a quick fix then speed really matters. Another customer might need flexibility for short-term changes or a third one might need innovations to excel on the market. Whatever your priorities are, a professional software solution can help. It is fine to use pencil and paper, or 2D CAD, but it is definitely a thing of the past in most markets for reasons of long-term viability.

Why not? With traditional methods, it is impossible or extremely difficult to preserve engineering knowledge, or to share it in real time – that is a severe obstacle to collaboration with co-workers or with partners, suppliers and customers. Moreover, an organisation that is unable to store and manage its data digitally will struggle with standardisation and automation. Plus there is a loss of quality through silos. And you simply don't have the visibility into processes you need to make informed business decisions.

Advocates of digitization argue that analogue engineering workflows will lead to a dead-end in the longer term.

If you look at the entire product lifecycle, that is spot on. Imagine a maintenance engineer in the year 2025 with a tablet in their hand or wearing smart glasses, standing in front of a machine made in 2017 but with no access to digital documentation. Or put another way, even today, would you send design changes to your supplier by mailing him a CD? With smart products, you always have an ever-present digital twin. And no matter where and when, it needs to be immediately available.

Digitization is expected to do it all – raise productivity, support innovation and accelerate manufacturing and delivery. What do companies have to do to make it possible? The ability to act in real time is absolutely essential. And what does that entail? First of all, end-to-end integration of your IT landscape. In engineering, that means seamlessly

combining CAE/CAD, PDM/PLM and ERP (Enterprise Resource Planning). You also need connectivity, Web enablement and a certain degree of mobility – all based on digital product data and the digital twin. We live in fast-moving times: customer preferences and market trends are ever-changing, and that calls for business agility.

On that note: Charles Darwin stated that the future does not belong to the strongest or most intelligent organisms, but to the most adaptable. With that thought in mind, is agility the determinant of speed when developing new products? The one is the prerequisite for the other. If you have a lean organisation that does not hinder your ability to act, and you proactively address megatrends such as digitization, you will naturally be faster. And if you wish to be fast in the engineering space in the longer term, you're going to need stamina. And that stamina can only be achieved with the right IT and the right processes.



Go with the data flow

CLEMENS VOEGELE

Managing Director of the Cideon Group



Leading industrial players are working to digitise not just the product but the entire manufacturing process. A central focus of their efforts is integration.

Why? Integration is about enabling seamless, end-to-end processes. You need harmonised, up-to-the-minute data as the basis, ideally drawn from a single data source.

What does that mean in concrete terms? That companies are now working with a single CAE or CAD software solution. And fully integrated solutions go even further: they eliminate the multiple stand-alone solutions that used to be common in development, design, materials management, manufacturing, sales and administration. If you are to overcome process and project silos, you need end-to-end data integration.

Time-to-market is the watchword of the manufacturing industry. It is claimed

that comprehensive digitisation can halve the time between ideation and production. How is that possible?

If you connect a large number of experts via a single data platform and give them real-time access to physically identical information, then they can all work simultaneously on one and the same project. To put it another way: if everybody sets off at the same time, then the whole team will reach the finish line sooner. That is the first major difference compared with the past: project tasks in electrical engineering, mechanical engineering, PLC programming, manufacturing and procurement are performed concurrently, not sequentially.

And the second? You can only standardise and automate recurring tasks and processes on the basis of harmonised data. For instance, that entails having a component in a production plant equipped with an RFID chip or barcode that is able to tell

the CNC machining centres what to do. That is Industry 4.0 in practice.

A lot of work will be needed to make sure these processes work smoothly. Increasingly, integration projects are being implemented by means of agile development methods. Why?

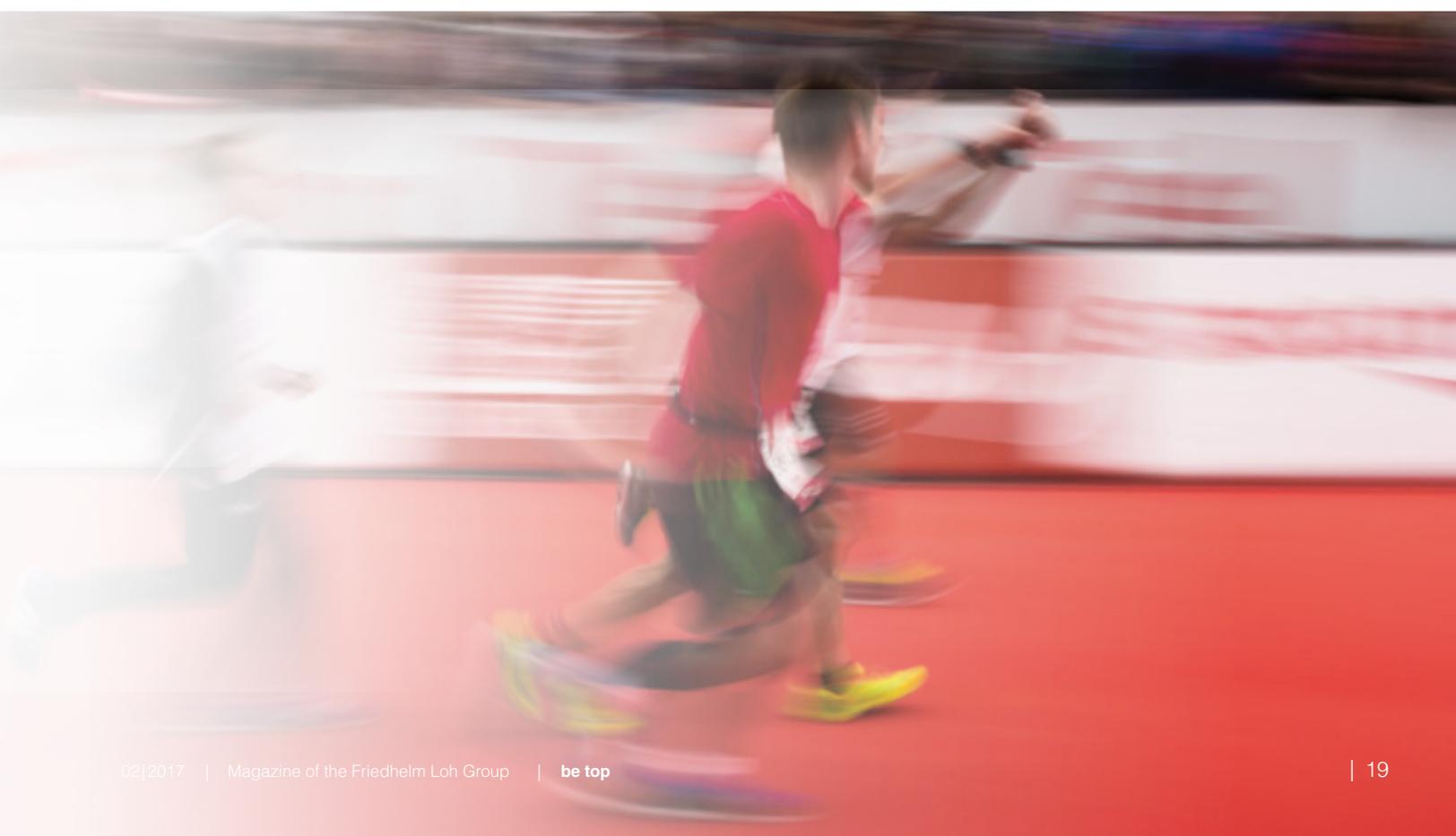
Because a viable software solution is more important than 400 pages of hardcopy specifications. Traditional blueprint models often fail to fully address customers' real-world needs; they take too long, and cost too much money. Agility is about having a defined goal, and working towards that goal in stages. An iterative approach quickly delivers tangible results. In addition, we can respond flexibly to changes. And once a system is in place, we recommend applying the same step-by-step principle to its subsequent further development.

ing plan, is essential to long-distance running. Prior to a marathon, Pretorius trains three times a week for a minimum of six months. He says, “Otherwise, you might as well forget it. Runners who simply go for two practice runs, or take the same route over and over, will wonder why their speed and endurance are not improving. But you need to really push yourself and try out longer distances. Which means dragging yourself out of bed on a Saturday, and doing your 15, 20, 25 kilometres. You have to acclimatise to the physical exertion involved.”

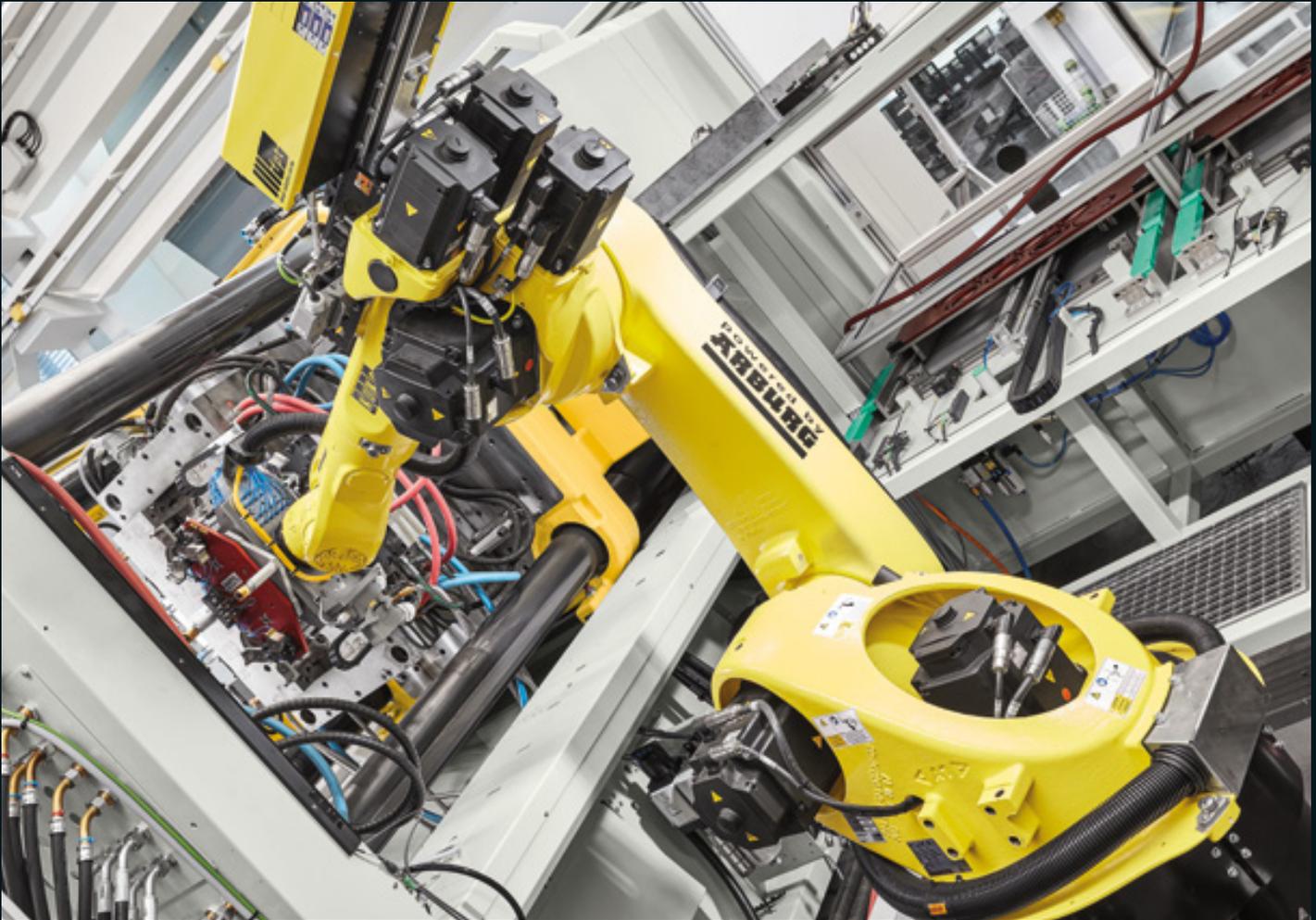
It is all about human biology. Someone who is already in good shape can up their fitness to the next level even faster. . Endurance training improves the performance of the cardiovascular system and lungs, which supply mitochondria – the powerhouses of cells – with sufficient oxygen. Endurance training causes mitochondria to expand and multiply. As a result, the metabolic pathway required to provide cells with usable energy automatically accelerates. In other words, the runner’s internal combustion engine grows larger and more powerful. Above all, a well-trained long-distance runner can achieve the holy grail of endur-

ance sport – a steady state where oxygen demand and supply are in equilibrium. The runner is then extremely unlikely to run out of breath, and their legs rarely feel heavy. However, it is not just about muscles. Just as important are joints, tendons, the heart, lungs and circulation. Dirk Pretorius states: “I would urge everyone to undergo a thorough medical check-up before embarking on a marathon. And don’t go to your GP. Go to a specialist sports physician, or an orthopaedist with a love of running. After all, you want to cross that finishing line with a smile on your face.”

Pretorius continues: “I never had any serious problems myself. But failing is part and parcel of running. If you experience real pain, you should simply pull up and stop running.” And what about sluggish legs or heat stress? “Run slower.” But he advises against the various potions and pills that people take to relieve headaches and other common forms of pain. “What’s the point? It’s about the run itself not simply speed.” And for the pacemaker it’s also about seeing the other runners complete the course, exhausted but happy: “That is our reward.” ■



EXPERTISE



The future of injection moulding

“Precision and accuracy are extremely important to our customers. We opted for the new machines so we could do more than just meet that requirement,” says Thomas Ritter, head of process management at LKH. In autumn 2017, the plastics experts of the Friedhelm Loh Group started work on commissioning two new injection moulding plants. Each with a clamping force of over 500 metric tons, they will in future manufacture plastic parts for the automobile industry and satisfy the highly exacting requirements this sector places on components. Additional automation steps in the injection moulding process are ramping up production speed, thus enabling LKH to increase its capacities to deal with the continuously high demand on the automotive market. What’s more, customers are able to differentiate easily between individual batches of plastic because a laser automatically applies a DMC code to the plastic parts. As a result, LKH guarantees precisely the same high quality for later production batches and further developments.



New training centre

Eplan is extending its training portfolio and underpinning the growing importance of basic and further training in the age of digitization. The Monheim headquarters of the training academy have been expanded and relocated to the new business park on Rheinpromenade. Meanwhile, the new training facilities at the Rittal Innovation

Center in Haiger offer a special practical focus and state-of-the-art training facilities have been established in Berlin and Chemnitz. Eplan provides customers with a broad range of training at twelve sites in Germany and approximately 50 branches worldwide (find out more on page 30).



SIMONE BLOME & ANDREW GRACE

Chief Customer Officer Solutions at ALSO (left) and the Head of Channel Management at Rittal.

Sales partner

ALSO Germany has become a new partner to the global Rittal sales network. ALSO is adopting more than 500 products and IT components into its portfolio and will in future offer them to resellers as solutions. Rittal is supplementing its direct sales with this aid of the channel partner. "Thanks to the partnership with ALSO Germany, IT system houses, resellers and service providers can meet requirements for efficient, failsafe IT systems faster," emphasises Andrew Grace, Head of Channel Management at Rittal.



Top configurator

The new RiLine Compact configurator supports project engineering for the busbar system up to 1250 A. Components can be added to the board using drag&drop, with a 3D model showing users how their solution looks. The configuration is backed up and can be reopened at any time. Moreover, the configurator has various output functions such as the parts list, technical documents and an interface to the Rittal online shop.

www.rittal.com/com_en/riline/

Expanding horizons

Optimised workshop sequences and efficient engineering took centre stage at the first Rittal Automation Day. In October, approximately 50 business owners, planners and decision-makers took part in discussions at the Rittal Innovation Center in Haiger. The event centred on a series of presentations given by experts from Rittal, Eplan and Bauer Steuerungstechnik. Tours through the centre and vivid practical tests rounded off the day. As it was not possible for all those who were interested in taking part to attend, the next Rittal Automation Day has already been planned for May 2018.



JOHANNES HESEL & RENO STASCHINSKI

CEO of Seal Systems (I.) and Managing Director at Cideon Software.

Expertise pooled

Starting now, Cideon and SEAL Systems AG, a supplier of conversion and output management solutions for SAP, are working in close partnership. The software houses are pooling their expertise and each deploying core products from their collaboration partner. This is allowing them to extend their product portfolio in the areas of data conversion and information and documentation provision. At the same time, they are also modifying their ranges to meet new challenges. The previous solutions portfolios of both companies are remaining fully intact.

Service in the fast lane

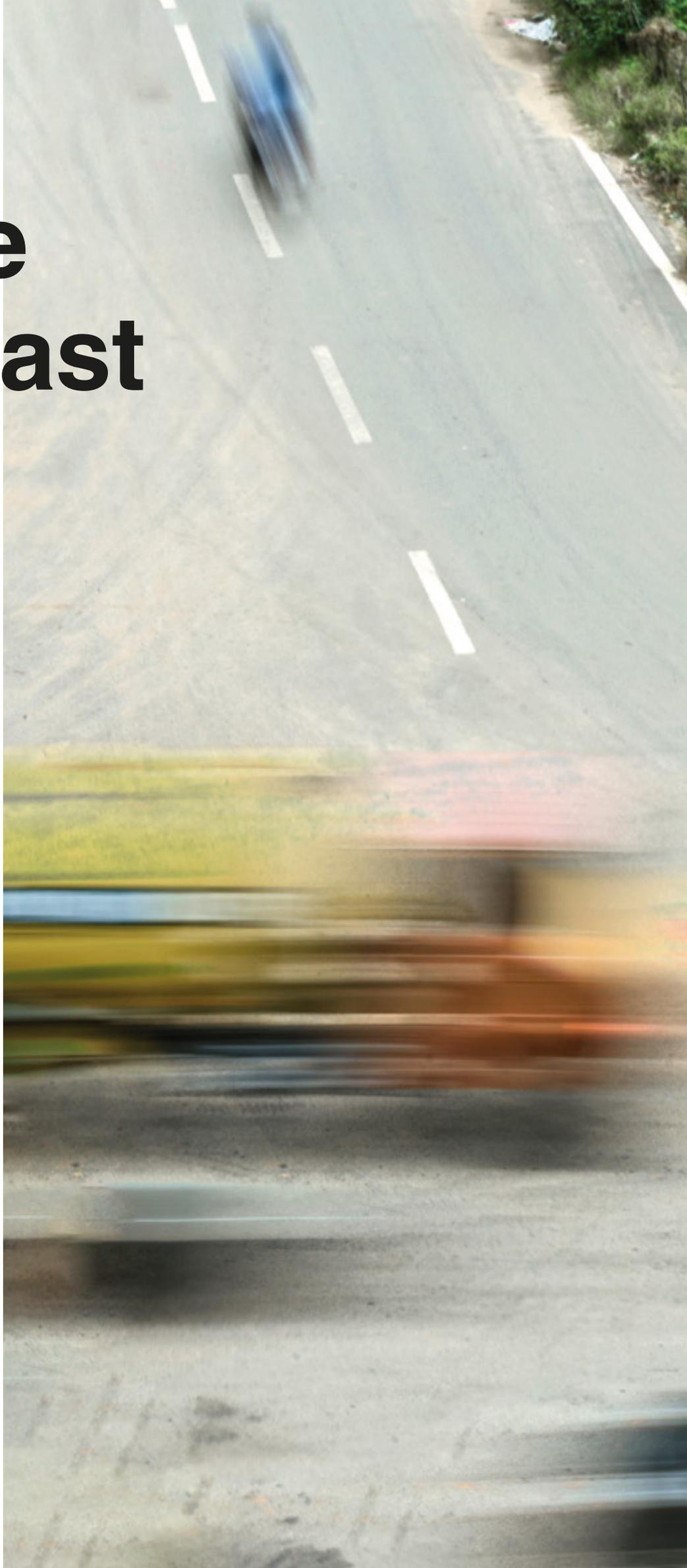
Oppressive heat, long distances and infrastructure that is still being developed – **Rittal** uses unbeatably flexible service solutions to meet the challenges posed by the Indian market.

Text: Rebecca Lorenz and Christian Abels

Ahmedabad, western India, 4.00 p.m. Deepak Dubey shakes his head as he looks at the congested traffic. “Nothing’s moving at all,” says the Rittal service engineer. He then carefully weaves his motorbike through the tightly packed tuk tuks, buses and cars. He ignores the other drivers’ honking and cursing – after all, he needs to get to the other side of town as quickly as possible.

“Several cooling units are failing to deliver the necessary cooling output at a textile manufacturer,” explains Dubey. The fall-out is as dramatic as you might expect at over 40 degrees in the shade – overheated control units, outages and production stoppages. “Every minute counts because the customer is losing real money.”

Twenty minutes later, the motorbike comes to a screeching halt at the factory door. “Regular maintenance would easily prevent something like this from happening,” says Dubey, before stepping out onto the factory floor. The reason for this is the tightly focused local competition in this country that spans more than 3 million square kilometres. There are hardly any specialist service providers. Instead, in most cases, it’s all-round handy- ▶



Service engineers from Rittal move flexibly through the Indian traffic thanks to their service motorbikes. They simply sail past traffic jams.





“If you’re looking for high-quality services and products, all roads inevitably lead to Rittal India, in my view.”

Pramod Dorik
Head of Electronic Maintenance at
Arvind Limited

men who fix the air conditioning in factories, offices and people’s homes. “The local businesses’ major advantage is their very close proximity to the customer – along with their unbeatably low prices, of course,” explains Sandeep Ayyappa, Senior Manager India Service. But this isn’t the be all and end all, even on an extremely cost-sensitive market like India.

“Companies that have actually experienced a worst-case scenario look for alternatives,” says Ayyappa. “This is where we come into play.” And that’s also why Rittal has built a comprehensive service network – the first ever supplier to do so. “Our aim was to be present wherever our end customers are,” explains Ayyappa. “We achieved this by extending our service network last year.” Since then, Rittal India, working together with more than 20 partners, has been able to offer a fast and reliable service that stretches from Bangalore to New Delhi. “Customers rely on us having the necessary expertise as a system supplier of control and switchgear engineering,” says Ayyappa. To ensure this also applies to the external service partners, they were first brought up to speed in the training centre Rittal runs in India. “After all, our customers rightly expect the highest standards of quality not only from our prod-

3

CLIMATE ZONES

exist in the country. Rittal is the only supplier on the market to offer the right solution for all climatic conditions.

3,287,263 km²

of land

makes up India. Rittal is present throughout with a broad network of its own service staff and highly trained service partners.

7.2 %

ECONOMIC GROWTH

was recorded in India in 2016. There is nevertheless extreme cost sensitivity that deters many competitors.

ucts, but also in the service we provide.” Within 20 days, in Bangalore the cooling technicians learned the essential aspects of installing and servicing climate control solutions. “We built upon and expanded their existing knowledge to enable them to provide customised services for dealing with all kinds of problems and faults,” explains Ayyappa.

CHALLENGING CLIMATE

This was no easy task, as the country’s climatic conditions push technology to the extreme. “It’s the heat that’s the obvious challenge, because as temperatures reach around 40 degrees Celsius in the summer, low-powered air conditioning units cause repeated system stoppages when the required cooling temperature isn’t reached,” says Ayyappa.

But excessive cold – as experienced in India’s mountainous northern regions – also affects air conditioning units. “India has three different climate zones, which place very different demands on climate control solutions,” explains Ayyappa. “Our service staff determine which products and services are required to cater for local conditions by conducting audits upon request.”

As in the case of Arvind Limited, the textile manufacturer from Ahmedabad. “We were constantly battling with a control unit that kept breaking down. When this lowered our output, we turned to Rittal,” recalls Pramod Dorik, Head of Electronic Maintenance. A service audit revealed a leak in a unit’s cooling fluid system. The escaping refrigerant was affecting the electronics. Once the fault had been remedied, Rittal offered the customer a maintenance contract. Since then, the service engineer has been visiting at fixed intervals to thoroughly inspect all the cooling units. “So far, there have not been any more faults,” Dorik confirms. For the company, this means higher productivity, which also makes it more competitive. “If you’re looking for high-quality services and products, all roads thus inevitably lead to Rittal India, in my view.”

SERVICES FIT FOR THE FUTURE

But conventional servicing activities such as maintenance contracts are just the first step towards the future for Rittal. “Industry 4.0 and climate change don’t only alter what’s required from our products but also the services we need to offer,” says Ayyappa. “This led us to thoroughly expand our portfolio last year – not only in India, but all over the world.”

As a result, Rittal recently started offering efficiency checks for cooling units alongside installation and maintenance. “Our engineers start by compiling an inventory of the customer’s equipment,” explains Ayyappa. Then they conduct a detailed analysis of the savings that could be made by servicing or replacing devices. “This is how we help our customers improve the environmental impact of their production, both significantly and sustainably.”

But things are also happening in the sphere of predictive and smart maintenance. After all, the new Blue e+ chillers from Rittal already meet the relevant requirements. “The units are networkable. All relevant data can therefore be recorded and analysed via the cloud.” Smart factory applications such as predictive maintenance, central energy data management and resource optimisation thus become possible and can help boost productivity and competitiveness.

Customers in India can also benefit from this, as Ayyappa hopes that this will prevent outages even in remote areas of India. “Of course, this won’t be possible unless the idea of preventive maintenance in India becomes even more widespread and our government invests in expanding the nationwide infrastructure,” Ayyappa points out. Because, as things stand, India’s transport and communications networks keep on breaking down. “And although you can weave around stationary traffic on service motorbikes, a pragmatic solution is hardly in sight for the latter.” ■

New services

Rittal started offering new, groundbreaking services in India and elsewhere.



Service contracts

Customers can now put together their own “pick and mix” service agreement to suit their particular needs. This is based on an IT, IE or software contract with bolt-on contract modules. These might include the availability of spare parts, the option to extend warranties, or defined response times.



Quick check

Rittal’s service team can conduct thorough inspections of data centers if required. Once the initial inventory has been compiled, a detailed assessment is made, which also estimates the obsolescence risk. Besides analysing the center’s energy efficiency, the suggested solutions take into account laws and regulations.



Retrofitting

In most cases, repairs and maintenance to data centers cannot entirely replicate brand new conditions. Rittal therefore recently introduced a retrofit service. This involves upgrading a data center’s existing technology with additional functions to meet state-of-the-art criteria.



Service & efficiency checks

Efficiency checks for cooling units can be based on existing inventory lists or follow on from a service engineer’s own survey of the customer’s equipment. Members of Rittal’s service team check the condition of the customer’s cooling units. They then outline measures for each device to prevent outages and save energy.



Smart maintenance

Blue e+ cooling units already enable data-driven status monitoring all over the world. When Rittal’s service team is alerted to a fault, or core parameters deviate from the norm, this triggers a preventive repair before a breakdown occurs.

Want to know more about
Rittal Service?
Then visit us at:
www.rittal.com/service

“Interfaces are outmoded”

Interview. A standardised database, reduced susceptibility to errors and accelerated processes – integrating software solutions brings long-term benefits for businesses. In the following interview, Reno Staschinski, Managing Director of **Cideon Software**, and Rolf Lisse, Head of Product Management and Development at Cideon, explain why investment pays off.

Interview: Gregor Karasinsky

The market environment in which companies are operating is constantly changing. What are the biggest challenges at the moment?

Reno Staschinski: In a highly globalised world, there are always lots of potential customers – but the competition is only getting tougher, too. If you want to survive in that environment, delivering top quality isn't enough on its own, you have to tackle growing time and efficiency pressures as well. An automated production environment and digitised processes can provide some relief, although the latter seems to pose a real problem for many companies.

In what way? Staschinski: It goes without saying that automating production steps can save time. That's why most companies start there. However, there's actually more potential to be leveraged by digitising processes – but lots of companies are out of their depth when it comes to figuring out exactly how to do that.



“Our aim is to reduce errors and increase the availability of data.”

RENO STASCHINSKI
Managing Director at
Cideon Software

So how can processes be digitised? Rolf Lisse: The first step is to integrate existing software solutions in the company. The aim is to achieve a “single source of truth”. That means users from all sectors of the company – from development and manufacturing through to service – accessing structured, logically interlinked data that is consistent across the entire company. This ensures all staff are always up to date on

correlations, change histories and development progress, which significantly speeds up processes.

Where and how can Cideon help with that?

Staschinski: As an SAP Platinum Partner, not only do we provide bespoke software solutions, we also help companies roll them out and integrate them. Over the years, we have built up in-depth process expertise and can therefore guide our customers through the whole process. Where exactly do they lose a particularly significant amount of time? How can the affected processes be optimised? Where is it worthwhile pursuing integration? What might that look like? We provide the answers to questions like that.

What was your last project? Lisse: Our latest development is the integration of SAP PLM and CAD authoring systems, such as AutoCAD, Inventor, Solid Edge, SOLIDWORKS and Eplan Electric P8. We're using SAP ECTR for that, which is the integration platform of the SAP PLM system for authoring tools. The aim of the integration is to administer and manage all locally created documents, processes and data in a standardised system at a central storage location.

How will that benefit users? Lisse: The biggest benefit is that it provides an automated and reliable system for creating parts lists to be used in production. Nobody wants to write down all the numbers from the CAD system and type them into the SAP system. Our integration makes engineering data and drawings available direct in the SAP system and links these to commercial/logistics content. This means users can access unequivocal data, for supplier queries or production orders, for example. That reduces errors, makes more data available and generates a new process dynamic.

How complex is the implementation process?

Staschinski: It's simpler and more stress-free than you'd imagine. First, we create prototypes and define application scenarios. To ensure the solution meets customer requirements exactly, we use agile methods and best practice tools. In specific terms, that means we take a gradual, step-by-step approach, as that's the only way we can respond to changes flexibly and find the right solution fast. The roll-out can usually be completed within a few weeks. That way, the investment pays off quickly.



“Integrative processes need integrated systems.”

ROLF LISSE

Head of Product Management and Development at **Cideon Software**

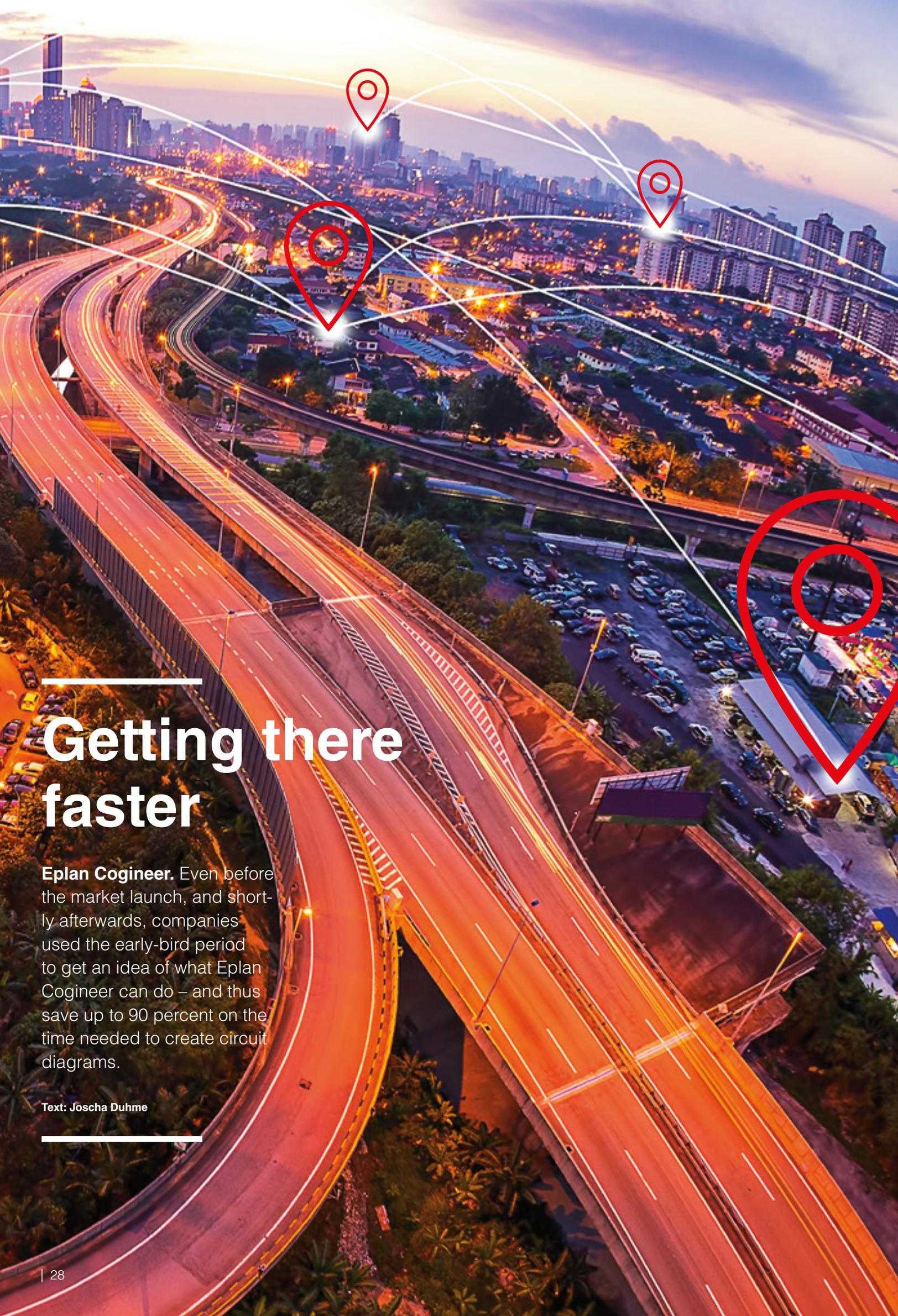
There is going to be a new standard with SAP S/4HANA from 2025. What happens then?

Lisse: Nothing. The integration platform our solutions are based on supports the new system, too. The same applies to the SOLIDWORKS integration. In this case, our customers are benefiting from new functionalities and an entirely new data model for digital end-to-end processes – for example in generating material parts lists.

What are the benefits compared to external interface solutions?

Lisse: When sharing data via external interfaces there is always a break from one medium to another, even when you're talking about electronic processes. That increases waiting time and makes systems more error prone. Quite apart from that, interfaces also need to be regularly maintained.

Staschinski: What's more, you find that interfaces become outmoded. Modern work processes are all about interdisciplinary, interdepartmental interaction. IT has to take that into account. If lots of experts are working on one and the same project in integrative processes, they need integrated systems. That is our job.



Getting there faster

Eplan Cograer. Even before the market launch, and shortly afterwards, companies used the early-bird period to get an idea of what Eplan Cograer can do – and thus save up to 90 percent on the time needed to create circuit diagrams.

Text: Joscha Duhme

“In the past, it took two to three hours – now everything is taken care of in ten minutes.”

André Lage Venterink, Hardware Engineer at **Technology unlimited**

When a company is going all-out for speed, it shouldn't come as a surprise that it takes the old saying about the early bird that catches the worm literally. AB Graphic International (ABG) manufactures label processing machines. The British mechanical engineering company is constantly on the look-out for solutions that will accelerate processes. When it thinks it has found one, it's full speed ahead at the Bridlington headquarters, where the solution is put through its paces before it reaches the market. ABG is one of the select companies that used the new Cogneer automation tool from Eplan during an early-bird phase prior to its market launch.

“Eplan Cogneer has been developed in collaboration with customers and our consultants, who keep their ear to the market and understand what our customers need,” says Haluk Menderes, Managing Director at Eplan. That is why Eplan has carried out the development for “and – most importantly – with” customers. They tested out interim versions and Eplan processed their feedback while still in the development stage. That meant Eplan could go into the early-bird phase with a very sophisticated product. The “early birds” themselves also had the opportunity to integrate their feedback into the development process.

That is where companies such as ABG came in. So what is the incentive for taking part in a test phase like this, when the product may not yet possess all the necessary functions? “We've set ourselves the target of significantly ramping up production over the next few years. As a result, we're always looking for ways to speed up the design process and cut back on costly and time-consuming errors,” explains Ken Lomas, Control Systems Engineer at ABG, outlining the customer's motivation. He and his colleagues spent a whole month testing Eplan Cogneer. With the support of technical consultants from Eplan, they succeed-

ed in switching to automatic circuit diagram creation with Eplan Cogneer in just a few days.

The tool allows the planners to adopt a new working method in electrical engineering, moving away from the need to compile Eplan projects based on sample projects or macro libraries. Instead, configuration interfaces are used to automatically create partial circuits, functions and even complete projects in line with specific customer requirements – all at the touch of a button. As per Industry 4.0 standards, all the specialist expertise is stored in the software and is available to everyone involved in the process, including less experienced colleagues who don't have in-depth Eplan know-how. Everything in Eplan Cogneer is based on Eplan macros: “In the case of an electric motor, for example, these macros

“A user-friendly tool that can save a whole load of time.”

André van der Ende, senior CAD engineer at **Siemens Energy Management**

describe its output, the direction in which it turns and how it is connected up. All users access one shared set of rules that also includes all company-specific standards and regulations,” reports Menderes.

So what are the practical benefits? “While one colleague was working on the same project using the conventional method, I used Eplan Cogneer to plan various machines and was therefore able to create a series of plans in five to ten minutes, instead of the six hours it would normally take,” sums up Lomas. The other advantage of Eplan Cogneer that reportedly becomes immediately apparent is the ability to avoid potential errors. The new method – the automated creation of circuit diagrams based on configuration – avoids classic mistakes that people make when copying and pasting. If conventional methods take up to 70 times longer, it shouldn't come as a surprise that Eplan Cogneer made a great impression on ABG that outlasted the early-bird phase. The company currently has five Cogneer licenses in use – and is a step closer to its growth targets. ■

10,000

SEMINAR ATTENDEES
are trained by Eplan in
1,500 seminars worldwide.

Igniting a career turbo boost

Training. Efficient engineering reduces throughput times and error sources. More and more companies are training their staff as **Eplan Certified Engineers**.

Text: Joscha Duhme

310 hits. And that is on just one of the major German online career portals. This sample shows that the demand for Eplan experts is big. Companies are anxiously looking for qualified “Eplan electrical engineers” or “junior engineers with a good working knowledge of Eplan”. The prospects for professionals on the labour market are very promising – and that’s not just in Germany. As a result, many engineers are studying hard on Eplan training courses so they can become Eplan experts and give their career opportunities an extra boost. Companies are also increasingly investing in their workforce to train them as “Eplan Certified Engineers”.

“In the digital age, basic and further training are essential to business success. When you factor in Industry 4.0, they’re all the more important,” says Harald Weiss, head of the Eplan Training Academy. After all, machines and programs are only as good as the people who have used and developed them. “To stay competitive and successful, companies rely on qualified staff who are willing to learn and continuously expand their expertise. The engineering sector is no different. Having the right expertise means you have very good career prospects,” explains Weiss.

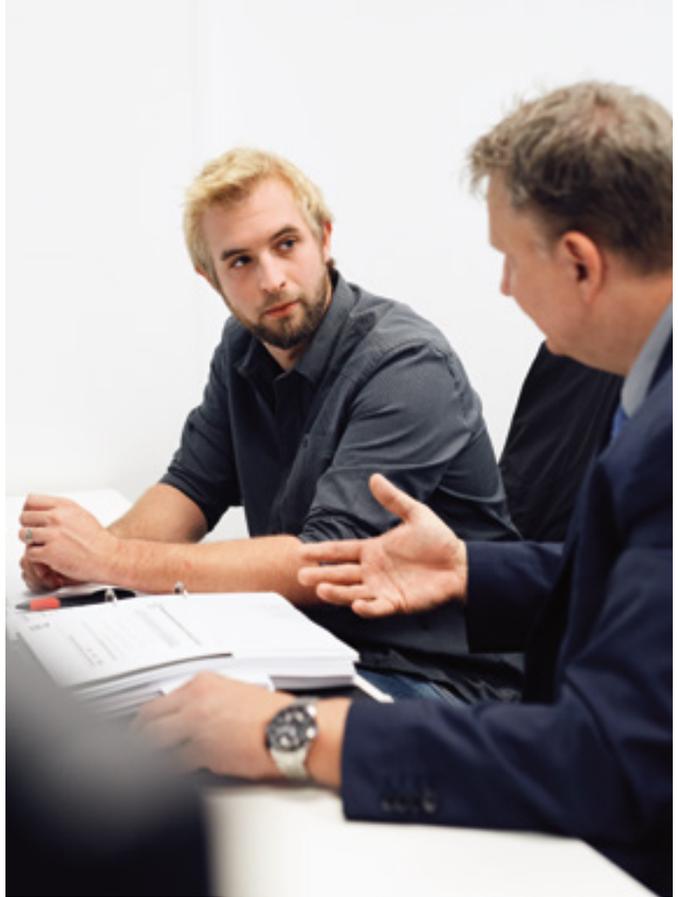
André Schumacher agrees. In autumn, the electrical engineer and three of his col-

leagues from press manufacturer Wickert Maschinenbau GmbH completed a six-month training programme to become Eplan Certified Engineers. “I think the fact the management team have confidence in me as an engineer and are giving me the opportunity to undertake further training is a great sign,” explains the 31 year-old. From the company’s perspective, training up the four-person engineering department will give it an important edge in the competition for new orders. As a specialist mechanical engineering company, Wickert works for customers in a whole range of sectors. “Requirements differ, but one thing all our customers have in common is that they want faster, more productive planning. That requires in-depth application expertise, so that the potential offered by software solutions can be utilised to the fullest extent,” says Schumacher. “Eplan Certified Engineer training is a hallmark for the standard of our engineering.”

PRACTICE AND THEORY BROUGHT TOGETHER

The training programme turns users into certified engineering experts. A coordinated, holistic package of five different learning components and seven training sessions combines theory and practice to excellent effect. Training units, practical stages, feedback meetings and online training sessions ensure rapid success. Depending on their previous knowledge, each participant starts with either basic or refresher training. “Trainees alternate between practical phases that last several weeks, during which they put into practice what they have studied, and further training sessions,” reports Weiss. The topics covered include macro and device technology, master data creation, standard-compliant documentation and seminars on automated process steps. After approximately six months, participants take the final exam online with Rheinische Fachhochschule Cologne. The university acts as an independent, registered certification body and thus documents the wide-ranging expertise the trainees have acquired.

However, for both the electrical engineer and his company, it’s about more than simply having a piece of paper that will give Wickert an edge on its rivals. “On my own, I’d never be able to cover as much detail as I have done here,” says Weiss, who has been impressed by the seminars at the new training centre in Monheim, which is one of twelve in Germany and 50 worldwide. He is particularly pleased with the mix of teach-



ing methods, which includes lectures, exercises and dealing with specific issues from the day-to-day work of trainees. This approach expands the participants' horizons and offers an insight into the work of the other engineers, all of whom get the opportunity to network in their breaks. That's why he is always happy to make the journey from his home in Landau to attend the in-class courses.

QUICKLY PUT TO USE IN EVERYDAY WORK

"In my case, the training in macros came at just the right time, as I never could have imagined after my basic training just how many opportunities Eplan Electric P8 would open up for us." Schumacher believes the set of rules is ideal as a continuous thread running through his own projects, "after all, even specialist mechanical engineering features recurrent structures that can be much more efficiently dealt with using the macros." That's why Wickert Maschinenbau GmbH is planning to move from Eplan 5.70 to Eplan Electric P8. The program makes work considerably easier, particularly with regard to the typical challenges that are encountered



On my own, I'd never be able to cover as much detail as I have done here.

ANDRÉ SCHUMACHER
Electrical engineer at
Wickert Maschinenbau

on a daily basis in modern engineering. "Even while I was still studying, it became clear that electrical engineering expertise is not enough on its own these days – our work is becoming increasingly interdisciplinary," recounts Schumacher. The intersections with experts in mechanics and pneumatics are very helpful, particularly when it comes to engineering hydraulic presses.

"The training at Eplan helps us progress as an engineering team and therefore also as a company," says Schumacher, offering a glowing review. Even after the first few hours he was able to review his own processes and make them more efficient. "As a team, we're currently investing more work in the creation of macros for future projects. It's already clear that will pay off, as we're getting noticeably faster and therefore more cost-efficient." For Schumacher and the company, taking part in the TÜV-certified training has already paid dividends. A growing number of companies are following their example, while job seekers and self-employed engineers are also enrolling on the Eplan Certified Engineer. After all, being able to prove you have in-depth engineering know-how on the labour market can give your career a real boost.

Loh Academy – more than just learning

The Friedhelm Loh Group provides further training and qualification programmes for both customers and its own staff. The Loh Academy offers employees in the Group more than 100 different training packages that have been developed based on practical experience for practical application. In the past twelve years, it has worked with institutes and universities to train more than 40,000 individuals. After all, the greatest asset of the Friedhelm Loh Group is its workforce.



Off abroad

No big company can survive in the market without international cooperation. That is why the Friedhelm Loh Group encourages its staff to gain experience abroad. Employees spend between three months and five years working in other national companies outside Germany to hone their intercultural skills. The same applies to employees outside Germany, who can spend a few months working in the country.



Leadership can be learned

Managers from the various companies of the Friedhelm Loh Group have been completing the multi-module “Leading with passion” programme since 2013. During scenario-based work, participants examine practical issues such as leadership, employee development and change management. The seminars also support networking and encourage managers to share their experience.



More than just study

In cooperation with Central Hesse University of Applied Sciences, the Friedhelm Loh Group offers the “StudiumPlus” course, which has a strong practical element. The close interlinking of theory and practice is what makes this course really special. When they are not attending lectures, the students develop their scientific expertise in one of the Group’s companies. The learning outcomes know no bounds.



All-round training

The training offerings at the Loh Academy cover 21 trainee programmes in commercial, technical and IT fields. The key advantage is the range of segments the Group covers, which guarantees variety. A trainee workshop provides technical know-how while junior companies such as “Big Little Rittal” deliver practical expertise.



The online school desk

The opportunity to expand your expertise and customise your own professional development – that is the benefit of e-learning. However, deciding for yourself when and what you’re going to learn is just one advantage. Everything is covered, from specialist expertise to soft skills, and – depending on their interests – staff at the Group can use web seminars on subjects like presentation skills and foreign languages.



Lifelong learning

“You never stop learning” – that’s no empty phrase in the Friedhelm Loh Group. Whether staff are expanding their business know-how, honing presentation skills or taking on contract law, the Loh Academy in Haiger has one and two-day seminars that offer valuable support for key issues in their day-to-day work.

Careers at the Friedhelm Loh Group? Find out more at:
www.friedhelm-loh-group.de/careers

Everyone's a winner

Eplan Data Portal. Both manufacturers and their customers benefit equally from using the Eplan Data Portal. As a centralised engineering data platform, it offers an additional marketing opportunity on the one hand while speeding up processes on the other.

Interview: Joscha Duhme

USER / MANUFACTURER

Engineering orders are getting more and more complex, and part of the reason for that is the growth in machine functions. However, time pressures are also growing, as customers also have to fight fierce competition. To thrive in that kind of environment, it is hugely helpful when engineers have quick, straightforward and convenient access to standardised equipment data from various manufacturers. The Eplan Data Portal is a user-friendly tool that makes it much easier to track down component data and transfer it with a single click directly to Eplan engineering programs. As the portal is web based, engineers worldwide can access it around the clock, even when on a business trip or when they want to bring on board a colleague in another office. In the past, they would have to trawl through various manufacturer websites searching for data component by component and then create a custom circuit diagram icon for each part. In the Eplan Data Portal, they can filter results by manufacturer, search relevant guides and documents and download commercial order information so that it can be transferred direct to the ERP system for procurement. If buyers can get all the information and parts lists they need in a standardised and error-free format, it speeds up the handover from engineering to procurement.



“WE’RE FOCUSING ON WHAT REALLY MATTERS”

“We use the portal extensively and integrate the data into our designs. That saves a lot of time in terms of data entry. What’s more, creating parts lists and other documents in parallel frees up room for creative work. We’re focusing on what really matters.”

Feeko Harders, head of engineering at **Zeppelin Power Systems**



“AN IMPORTANT COMPETITIVE EDGE”

Over recent years, the importance of new digital marketing platforms for component and system suppliers has exploded exponentially. When a new product is launched, our customers expect rapid immediate access to up-to-date product data such as circuit diagrams, documentation and CAD drawings for the components and assemblies. Our aim is to make all these available internationally. From our perspective, it is now an essential part of a product launch. Eplan and the Eplan Data Portal give us important support for data creation, quality testing, distribution and marketing. The better the quality and availability of data for our assemblies, the less work our customers have to do to use it in electrical engineering tasks. That is also precisely the point in the process chain where customers often make their purchasing decision. This is why up-to-date, high-quality data is an important competitive edge. We have introduced a new Bosch Rexroth article data generator as a means of supplying data. This was implemented with the aid of Eplan Engineering Configuration and is connected up via the Eplan Data Portal. That means Bosch Rexroth customers can make the most of up-to-date product data. All changes take effect immediately and our customers can use them straight away in their application projects. For our part, we can clearly identify the countries and sectors where our products are being used.

Bartosz Korajda, head of the Software Development department at **Bosch Rexroth**

EPLAN DATA PORTAL

Direct access

The Eplan Data Portal – which was previously hosted on servers in Germany – was migrated to the Microsoft Azure platform in April 2017. Stefan Domdey, Global Director Eplan Data Portal, explains the decision to move to Azure: “With our focus on international growth, we were looking for an efficient, highly scalable, rapid-deployment cloud solution. The aim was to have the same options in future markets such as Asia and the USA as we already have in Germany, and to provide data centrally to various data centers around the world.”

The biggest advantage besides improved availability and speed is the centralised management and simple provision of complex, high-availability applications and APIs (application programming interfaces) in various data centers worldwide. The opportunities presented by Azure Services and the entire platform will, in future, serve the ongoing development of the Eplan Data Portal, which already has 149,000 users who download 270,000 items of article data per week. More than 3,600 new users join every month to access the 761,274 datasets currently stored on the database.

COMMITMENT



Successful new start

Two trainees at the Friedhelm Loh Group know just how life-changing an apprenticeship can be. Khaibar Fatehzada (left) and Eyobel Gebreyesus (right) are the first refugees to successfully complete their training at Rittal. They were part of the “pilot project to integrate refugees into vocational training.” The Friedhelm Loh Group launched this project in 2015 and to date has enabled eight refugees to take part in training. The project entered the next phase in 2017. Fatehzada and Gebreyesus were the very first refugees in the Lahn-Dill district to take the Chamber of Commerce and Industry exams and achieved grades within the average range. Rittal has taken them on: “We’re very proud of both of them,” said Matthias Hecker, Head of Training at Rittal (centre): “The results show that our project has been a success. We’d like even more companies to give refugees a chance.” A new pilot project has already started. More on page 38.



€800,000 for a digital future

Rittal is particularly keen to strengthen technology development in the Middle Hesse region of Germany. The company has thus joined forces with seven other businesses to offer 800,000 euros to es-

tablish a professorship focusing on research into Industry 4.0 at Mittelhessen University of Applied Sciences. The new endowed chair aims to improve the links between industry and science.



Where it's fun to work

This year, Rittal Canada won a "Great Place to Work" award in manufacturing. The award is special as it comes from the employees themselves. At least 90 per cent of respondents surveyed said they work in a safe and pleasant environment. Rittal is thus 13th in the list of Best Workplaces in Canada 2017 with 15 to 49 employees.

Social commit- ment abroad

The Rittal Foundation has used funds for grants to enable two young women to spend a year abroad volunteering in social projects. Sarah Zeller helped build a centre for young people from a Christian community in Salamanca, Spain, and taught German to international students. Assisted by ICJA Freiwilligenaustausch weltweit e.V. (an international volunteer exchange association), Sophia Nies provided support to teachers at an international primary and middle school in Ghana. The two women gained extensive experience through the charitable projects.



Swotting pays off

Following twelve months on an in-service retraining programme, 30 employees have successfully completed their machine and plant operator training at Rittal. It is the third time that the Friedhelm Loh Group has offered staff the opportunity to gain a formal vocational qualification, without having to reduce their work hours. The programme is being implemented and organised in conjunction with the Loh Academy. In con-

sultation with the Lahn-Dill Chamber of Commerce and Industry, it has developed a comprehensive training plan and prepared the participants for their final exams over the course of 12 months. Almost at the same time, 15 warehouse staff also completed their retraining programme. In total, 65 employees have already gained an initial vocational qualification through retraining programmes at Rittal.

Well done!

Integration. The **Friedhelm Loh Group** is using a new pilot project to help refugees who are keen to work but lack school leaving qualifications, training or adequate language skills. And the Group is actively involving its employees in the project, thus creating the necessary conditions for complete integration that goes far beyond the workplace.

Text: Rebecca Lorenz and Dr. Carola Hilbrand



The fabrication department at Rittal in Rittershausen is playing host to a group of journalists.

They're in the corridor listening intently to Stefan Nadler, Chairman of the Works Council at the plant and initiator of the Friedhelm Loh Group's new integration project "Direct entry for refugees into the workplace." The project helps refugees who have no school leaving qualifications and – due to their language level, for example – are not yet eligible for an apprenticeship, providing them with support in entering the world of work. Suddenly a loud horn sounds. "Would you excuse me please?" When the group of visitors is slow to move aside just a few steps, Youssef Almohamad steers his truck around them. He's done enough waiting in the last few months – now, at last, he wants to get down to work.

Nadler looks back at the young man with a grin. "You really see just how agitated he gets if he has to take an unplanned break." Little wonder, then, that the 22-year-old doesn't waste any time on the frame welding robot either. He purposely takes four short steel sections from the truck. Insertion, welding, removal and inspection are soon followed by the next base.

At this point, you wouldn't know that Youssef has only been doing this job for a few months. He seems keen and experienced, skilfully handling the sheet metal bases and truck. His colleagues also already greet him with a hearty pat on the back, shout instructions to him and go through the rota with him. There is no sign here that Youssef is a refugee – he is part of the workforce. Yet in his earlier life, the slim, dark-haired man with a mischievous smile mainly worked with silk, cotton and linen. Enclosures? Steel sections? Mounting frames? This world was completely unknown to him just two years ago.

BROTHERS AT THE FAMILY BUSINESS

It's two years since Youssef and his brother Hussein, 15 years his senior, fled the war in Syria. With bombs, air attacks, entire cities reduced to rubble and constant fear for their lives, at a certain point the two brothers couldn't take any more. Yet the decision to go wasn't easy for them. "Our parents, sister and little brother are still in Syria," says Youssef. It wouldn't just have been too expensive for all five to flee – it would also have been too dangerous. From their home in Syria, the brothers first battled their way as far as Turkey, from where they crossed to Greece in a small boat. ▶



“We covered most of the rest of the route on foot,” recalls Hussein. “And when things worked out, we used buses and trains.” Exhausted but physically unscathed, the two of them arrived in Munich in August 2015, where they were registered and shortly afterwards sent to the reception centre in Giessen.

This was a stroke of luck for the brothers, as they thus ended up at the job centre, which recommended them for the pilot project by the Friedhelm Loh Group for direct entry of refugees into the workplace in summer 2017. “Although refugees like Hussein want to work, they find it particularly difficult to get a place on the open training market,” says Michael Roth, a recruitment agent at the Lahn-Dill job centre. “In Hussein’s case, this is because he lacks the necessary language skills. And at 37 he’s too old for a lot of training companies.”

To nevertheless give these individuals the opportunity to earn their own living and gain a foothold in a new homeland, Rittal is

1

Team briefing

To ensure everyone knows what needs to be done, a short briefing is held before the start of each shift.

2

Qualified in welding

Youssef Almohamad (22) trained in welding in Syria. These skills stand him in good stead at Rittal.

3

Language classes

are given by colleagues from the plant. They have developed the methods for these with a trainer from GWAB.

using its new integration project to focus exclusively on applicants who barely have a chance on the labour and training market.

UNIQUE OPPORTUNITY – WORK AND TRAINING

“The new employees are two of fifteen new appointments. Just like the other new employees, they started work immediately, are initially being guided by co-workers and will then quickly work independently. However, the two of them are still scheduled to have classes to enable them to perhaps do another training course in two years’ time,” says Nadler.

He has known Rittal since he was a child, has been working at the company for 31 years and knows that values and a sense of community are extremely important to it. A few months ago, he presented the idea for the project to Dr Friedhelm Loh, owner and CEO of the Friedhelm Loh Group. Loh responded immediately and

offered any support needed. “We’re a family business and the largest company in the region. We have responsibilities – that’s important to us. You simply have to do these types of projects if you have the required resources,” says Nadler.

In planning the project, Nadler and his colleagues drew inspiration from the integration project already under way that trains refugees for an apprenticeship. “Firstly, we offered a two-week internship phase to get to know each other,” explains Nadler. After all, although Youssef and Hussein brought with them hands-on sewing skills, they had no relevant practical experience to offer. And even though Youssef completed training to become a welder in Syria, the working conditions, machinery and products are completely different in Germany. “It was particularly important for me to see whether they really were motivated – and they were,” says Nadler. A positive impression at an interpersonal and linguistic level resulted in him offering the jobs to both of them immediately after the first meeting.

ON AN EQUAL FOOTING

The brothers have been employed in fabrication at Rittal since the start of August and can thus lay the foundations in the next two years for meaningful, independent lives. “As in an apprenticeship, during this time we offer them a permanent job where they roll up their sleeves five days a week as fully fledged team members,” explains Nadler. But instead of going to a vocational school, the refugees are taught all the material they need directly at the plant by their own colleagues.

“The men’s language skills are simply not adequate yet to succeed in the German school system,” says Nadler, explaining the decision. This is because the busy vocational school timetable simply doesn’t allow any time to provide the refugees with the linguistic support they urgently need. At Rittal, things are different. Here, Youssef and Hussein aren’t just gaining practical skills in subjects such as welding and assembly, but also knowledge of German, mathematics, social studies and culture – either after the early shift or before the late shift, depending on the rota.

“As colleagues give the classes, we break down barriers from the outset and thus strengthen the personal relationships between the employees,” says Nadler. To achieve this aim, he had to rely on voluntary support and commitment from the workforce from the start. One example is Thom-

65.6

MILLION PEOPLE

fled war and persecution in 2016 according to the UNO-Flüchtlingshilfe refugee aid organisation. Since many conflicts last decades, few refugees are able to return to their homelands. This makes it all the more important to give them new prospects with training and work.

as Kringe, who heard about the project and was instantly attracted. “I was curious about the people coming here. So it wasn’t hard to say yes.”

Together with five other colleagues from work preparation and production, Kringe is currently taking care of the classes and training for the two brothers. “Even though I’m already responsible for seminars at the in-house Loh Academy, this is a very special challenge for me,” says the Production Planning Manager at Rittal. “As we really knew what to expect in the project, most of the things here involve learning by doing.”

COOPERATION WITH PUBLIC AUTHORITIES IS KEY

Rittal is supported by the job centre and the Gesellschaft für Wirtschaftsförderung, Ausbildungs- und Beschäftigungsinitiativen (Society for Economic Development, Training and Employment Initiatives – GWAB). “If a company comes to us with such an idea, we’re pleased to help put it into practice,” says Roth. He points out that the initiative by the Friedhelm Loh Group is performing groundbreaking work in the region, especially because management and staff are pulling together. “We don’t just help financially but also with preselecting applicants, organising workshops and providing instruction for employees in course modules.”

And this is help that Rittal is pleased to accept. “Although we can draw on the experience of our colleagues in the training workshop, this cannot be adapted 1:1 for our project,” says Nadler. Due to shift work, production targets and delivery times, conditions at the plant are different. That’s why the team is grateful for the tips from the training specialist it has been provided with by GWAB. “In particular, I lacked methods for teaching German,” admits Kringe. But

that isn’t a problem for him. “All lessons also need to be fun. You mustn’t forget that it’s incredibly exhausting for the two of them to attend classes and do homework in addition to their regular work.”

COMPLETE INTEGRATION

To consolidate the language basics in particular, Kringe and his colleagues would also like to integrate the brothers outside work. “Of course, the easiest way to do this in Germany is in clubs – that is to say, football, choirs and volunteer fire brigades,” says Kringe. “We take them with us to these. Almost every one of us is in a club or is involved in something else. Who knows? Maybe true friendships will develop over the next few months.” And that’s what Youssef and Hussein wish for, too. “We live alone and so far only know one family in the neighbourhood. So it’s nice if you have contact with colleagues.” But they know they need to prove themselves as part of the team to achieve this, both now and in the future. “First we need to learn the language properly,” says Hussein. “Then we can do an apprenticeship.” “But you’re too old,” counters Youssef and grins at his brother. However, reflecting just for a moment, he adds: “That would be our wish.” ■



Copycats welcome

Would you also like to carry out a project to directly integrate refugees at your company? All the information is available from

Stefan Nadler
Phone +49 (0)2774 82-4284
E-mail Nadler.s@rittal.de

EXPERIENCE



72 percent saving

Resource-friendly working practices are a top priority for Nestlé at the Product Technology Centre in Orbe (Switzerland). That is why the food giant uses the most energy-efficient cooling systems it can in its global production facilities – and that’s not just for food storage, but for the control system in the production plants, too. “As a research centre, it’s our job to set the bar for new technologies across the group,” says head of production, Philippe Demarque (photo). That is why he was quick to agree to the comparative test that Rittal suggested for the Blue e+ and Blue e cooling units. Nestlé commissioned an independent tester to compare the cooling units. Based on the initial results, Philippe Daengli, a product manager at Rittal, expects Blue e+ to deliver savings of around 72 percent on power consumption. This is possible thanks to a speed-regulated compressor and the heat pipe.

163 ZettaByte

Leading studies suggest that global data volumes will increase to 163 zettabytes by 2025. What's more, the demands on infrastructure and the need for data center services are growing. Internet journalist Tim Cole spoke at the "Rittal IT practical days" about all the latest developments, and he advised companies to view data as a company asset, since linking it together can predict results and minimise costs.



SMILES ALL ROUND

Fabian Schäfer accepted the award at the ceremony in mid-October.

A crowd pleaser

Each year, the readers of German business journal "funkschau" vote on the best IT products. This year, a solution from Rittal was among the winners. During the awards ceremony on 12 October 2017, Fabian Schäfer, product manager IT at Rittal, accepted the third place award in the category "Datacenter Monitoring and Management" for Computer Multi Control (CMC) III. The CMC III monitors IT environments and supports companies in providing an efficient and reliable IT infrastructure.

Double award-winning

Rittal celebrated not one but two wins at this year's IT Awards. Approximately 30,000 users from seven German IT-insider portals declared the company the gold and platinum winner in the "Data Center Infrastructure Management" and "Micro Data Center" categories. Besides pioneering strategies,

the award also singles out IT suppliers who have a good feel for the market and an inventive spirit. Racking up an average of one million hits per month, the portals are among the most important independent information sources in the German B2B environment.



Eplan Efficiency Days

Customers in seven cities got the chance to take part in the Eplan Efficiency Days in 2017. The programme covered everything from presentations, workshops and 3D enclosure planning to mechatronic communication, Control and Switchgear Manufacturing 4.0 and the latest innovations from Eplan Platform 2.7. Every visitor was able to pick their personal focal points. The series will draw to a close on 1 March 2018, with the Efficiency Day in Munich. To register, please go to: www.eplan-efficiency-days.de/de/anmeldung/



Cideon Solution Day

This year's Cideon Solution Day in Dresden was held under the motto "Development & production – connecting worlds with Cideon". Presentations by experts, practical reports and networking were all on the agenda. Visitors joined industry giants such as SAP SE, Riess Engineering Europe and DSC Software to discuss the latest strategies and developments for efficient product development with SAP PLM.



Staying on the safe side

Energy sector. Operational reliability is the top priority at wind farms. To ensure they run smoothly in remote and less hospitable regions, companies like **Senvion** use professional protective equipment from **Rittal** and preventive maintenance to safeguard electronics.

Text: Eva Augsten and Joscha Duhme





2

- 1) Hauke Reimers on his way to an inspection.
- 2) The wind turbines document all key parameters.
- 3) Reimers is head of Electrical Product Engineering at Servion.
- 4) You need to rope up to get to the gondola.



4

The flat plains of northern Germany. The sky is cloudy. The wind is blowing. It's not particularly pleasant. In fact, it's fairly grim. Not ideal conditions for a spot of climbing, right? Hauke Reimers disagrees. The head of Electrical Product Engineering at Servion GmbH is in his element. Wind, or rather wind farms, are his thing and a way of life for him and his 4,500 colleagues at the global company based in Hamburg. That is why he is trudging down a track early in the morning, almost 30 kilometres from the nearest city and with a safety helmet on for good measure. Rotating above his head with a diameter of 114 metres is the enormous rotor of a 3.2 megawatt turbine. "That's how it should stay," says Reimers.

Given the remoteness of the region, it is absolutely crucial that the technology can be relied on. There is no room for error. "Quality and durability are essential in our plants," says Reimers. Servion uses cutting-edge communications to keep a close eye on its turbines from the Turbine Control

Centre (TCC) in Osterrönfeld. "It's not all that far away, in Schleswig Holstein, but it is by no means a regional control centre. Information from wind farms in Canada, Australia and the North Sea is routed to the TCC," explains Reimers, as he folds open his laptop inside the tower. Technical experts from Servion around the world are issued with jobs whenever the TCC is unable to resolve problems via direct computer access.

THE HORROR SCENARIO – SHUTDOWN

Out in the back of beyond, it becomes only too clear just how important every single part is to the operational reliability of a wind turbine. Even minor faults can culminate in a shutdown, and every day of a shutdown means thousands of euros in lost income. "That is why we check all components extremely thoroughly when they arrive in our production plant and then leave the factory," says Reimers. That also applies to the enclosures from Rittal, which are in use at many Servion plants, where they house control and monitoring equipment.

Standing at the foot of a narrow ladder, the specialist is meticulous as he runs through all the checks designed to make sure he doesn't fall. He and his colleagues all have to undergo regular safety training. He quickly climbs the rungs up to the gondola, where five bayed enclosures house the inverter – the electronic heart of the wind turbine. "This converts the electricity generated from the wind to the correct frequency so that we can feed it into the grid," explains Reimers. In this application, it has proven especially useful that the standard TS 8 enclosures from Rittal can be extended with the flexibility of a modular system and bayed in all directions, whether side by side or back to back. Reimers continues: "This standardisation is a huge advantage when it comes to extending the enclosure combination to suit the size of the inverter. Everything can be done with minimal outlay." Thanks to the triple-layer surface treatment (nanoceramic primer, electrophoretic dipcoat and textured powder coating), they are also extremely resistant to corrosion and damage. This means the enclosure system can be used worldwide – whether the turbines are standing in snow, the tropics or the high sea. Even in Northern Germany, where conditions are not quite so extreme, the microcontrollers, semiconductors, fuses and contactors are all

1) Vibration decoupling above the enclosure ...

2) ... and reinforcements at the feet protect the system from vibrations.

3) TS 8 enclosures enable a flexible approach to baying.

4) The enclosures in the top box monitor the drivetrain, among other elements.

5) Communication technology keeps all key figures in view.

6) Remote monitoring in the Turbine Control Centre.



1



2



3



4



5

GENERATOR

Converts the kinetic energy of the wind into electrical energy. Rated output: 3,600 kW.

GEARBOX

Converts the low speed of the large rotor to the power needed for the generator.

PITCH SYSTEM

Controls the alignment of the rotor blades in relation to the wind and thus regulates uplift.



perfectly protected from humidity, dust and fluctuating temperatures, as Reimers confirms on site.

Regardless of the often inhospitable conditions in which they operate, all wind turbines have one thing in common – their gigantic rotors are constantly generating vibrations. “That makes it all the more important to protect the electrics from reverberations,” points out Reimers. To do just that, Rittal has developed a variant of the TS 8 enclosure that features a mechanically reinforced mounting plate and lock. This reinforcement stops vibrations from triggering oscillation inside the enclosure, which could, in a worst-case scenario, continuously build up.

WIND TURBINES ARE ALWAYS ONLINE

These protective measures are also applied to the top box, one of the most important enclosures in a wind turbine, located towards the top of the gondola. It is responsible for monitoring the drivetrain and controlling the rotation of the gondola. “The top box and bottom box are constantly sharing data and also communicate with the TCC.” However, the wind turbines don’t just communicate with the control centre when there are problems, so that specialists like Reimers can put things right. They also transmit key operational data such as wind speed, the amount of electricity generated and the temperature of the gearbox. “That is becoming increasingly interesting from the viewpoint of preventive maintenance,” explains Reimers. It means wear parts can be replaced at precisely the right time – including the fan-and-filter units in the enclosures. These units have to be replaced several times during the 25-year service life of a wind turbine, and that is Reimers’ job for today. The more precisely the changeover date can be specified, the fewer fans will be needed over the course of the wind farm’s service life and the more effectively maintenance costs can be reduced.

Rittal offers a potential solution. Fan-and-filter units with EC technology are a sound choice for efficient operation and the option of fan monitoring. They exhibit lower power consumption and feature an integrated control interface as standard that can be used to control the fan and monitor its speed and functionality. The end result is a fast and simple means of detecting fan failure

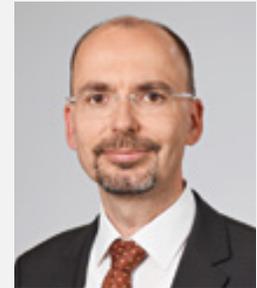
and even better operational reliability.

Senvion adopts the same approach in prototype development, as Reimers explains while he completes his inspection. The company is planning to use Blue e+ cooling units to achieve more accurate temperature control at the wind farm. That would, in turn, allow it to extend its remote monitoring and predictive maintenance. Since the Blue e+ units can be allocated an IP address, Senvion can map out measured values from the sensors in the cooling unit remotely, as and when necessary. This allows the company to evaluate system notifications, maximum ambient temperatures, minimum enclosure internal temperatures, duty cycles and capacity utilisation. Cooling units can thus become an integral part of Industry 4.0 concepts, which improves service, optimises operation and generates savings.

The technical experts at Senvion shouldn’t then have to venture out into the wilds as much as they have had to in the past. The innovative enclosure solutions with cutting-edge communication technology from Rittal will help keep the rotors of the Senvion wind turbines turning reliably for years to come, generating clean electricity. That goes for the wind farm in northern Germany, too, where the head of Electrical Product Engineering has corrected the minor component fault, sent all the parameters to the TCC and packed up his things. The wind is blowing. The rotor is turning. And that’s just the way Hauke Reimers likes it. ■



Three questions



Matthias Zelinger

Managing Director of the **VDMA Power Systems** association

What effects of digitisation offer the greatest opportunities for wind energy?

The opportunities lie in improving integration into the increasingly dynamic energy system, boosting availability by exploiting new opportunities in plant operation, and feeding operational experience and know-how back into development work much faster.

What kind of role do scenarios such as predictive maintenance currently play in the sector?

Many plants are connected up to a remote maintenance system. This means potential problems can be identified and dealt with early on. That can reduce downtimes and repair costs.

What potential do intelligent maintenance scenarios offer?

The benefits for customers are already in reach, thanks to higher plant availability. Considerable additional potential is now being tapped. The opportunities to use big data analyses to predict potential failures in a plant and possibly avoid them offer enormous opportunities. This know-how also flows into the development of new plants.

Secure data box

Energy sector. ene't is the first company in Germany to map the entire German electricity grid. The end result of this in-depth work is a platform for mapping the business processes of energy providers. The company runs its operations at its site in Hückelhoven, North Rhine-Westphalia, using a high-availability container data center from **Rittal**. Since it hosts the entire development and productive environment of ene't, it is equipped with a multi-layered security system.

Text: Sophie Bruns



No fires to fight

The container system features a special solution for preventing fires. Reducing the oxygen content in the atmosphere to keep it below a maximum of 15 percent creates conditions in which a fire cannot burn. Oxygen analysers continuously monitor the oxygen content.



Highly sensitive

Physical sensors measure the oxygen levels and temperature, while the fire early detection system detects smoke particles. Every single sensor is marked on a digital map of the container and, if there are any changes in the atmosphere, operators in the control centre can see straight away.

Always live and very available

Ensuring all components such as the electricity supply and climate control system feature a redundant design safeguards operations and prevents failures. Each server and storage system has at least two power supply units that are connected to different cables backed up with a UPS.





Access for authorised personnel only

Several doors, a modified entry system and a permanent alarm system keep the confidential data in the container safe and secure.



Everything from a single source

All the solutions in the container come from Rittal – from the room itself, the racks and the IT cooling solutions to the monitoring system and power supply. The generous room planning means the IT racks can be extended. There are currently four IT racks in the new data center and there is the option of extending these to twelve.



Discrete, mobile and rapidly available

Thanks to its inconspicuous appearance and its location on a lawn area, the container doesn't give any outward indication that it houses a data center. The entire system could also be very easily relocated elsewhere and reconnected to the grid in next to no time. As a compact, turnkey solution, it can be supplied with a short delivery time of just six weeks.

Three questions



Falk Heinen

Project manager for information technology at **ene't**

Why did ene't decide to build a new data center?

CDs are becoming less popular as a data storage medium for our software solutions. Increasingly, our customers expect direct, uninterrupted online access to our servers. Our "software as a service" model ensures the databases are always up to date and secure.

What persuaded you to opt for the solution from Rittal?

Keeping up with our huge volumes of data often poses problems for classic data centers. We needed a turnkey solution, which is why we chose Rittal. From negotiating the quotation to putting the project into action, Rittal put in a sterling performance.

What benefits does the container offer?

Security and safety standards in the new data center are better across the board. That is most striking in terms of fire prevention, which has been optimised by the low-oxygen atmosphere in the container. We could never get a reduced-oxygen system like that to work in house.

1894

THE YEAR OF FOUNDATION
for Underwriters Laboratories (UL),
which is committed to product safety.
UL doesn't issue approvals; instead,
it examines whether products meet
standards, and provides them with a mark
of conformity for a fee.



Fit for the US market

Switchgear engineering.

Different markets, different standards. While it's the IEC that sets standards in Europe, in the US market, it's the standards of UL and the NEC that need to be observed – and they are much stricter. For plant engineers such as **ATR** that export to North America, ensuring compliance is no easy task. They need expertise and skilled partners, such as **Rittal**.

Text: Dr. Jörg Lantzsch and Hans-Robert Koch

Done! Stephan Rabsch sticks the badge with the UL logo onto the enclosure: “That is the very last step before we deliver the switchgear to the US market,” explains the head of production at control system and switchgear engineering firm ATR Industrie-Elektronik. The badge indicates that the unit is standard-compliant and is a green light for a problem-free sign-off in the USA. “The UL logo on the finished switchgear makes on-site sign-off so much easier,” explains Rabsch.

That is an extremely important point, particularly when you're talking about a total of 150 m of enclosures, which is the current plant size. Added to that are hundreds of operating housings and terminal boxes. This particular switchgear is destined for a fibreboard manufacturing plant in the USA that ATR's parent company – the Siempelkamp Group – is setting up in Barnwell, South Carolina. The plant, which will produce up to 280,000 m³ of fibreboards a year once operational, is the largest order the Siempelkamp Group has ever had. As the switchgear engineer for all Siempelkamp companies, ATR is supplying the switchgear for the relevant plant elements. The timing is tight. “A very tight timeframe is typical for orders from the USA,” points out Timo Amels, Managing Director: “There's a maximum of one to one and a half years from getting the order to starting up the plant.” An important part of that process is ensuring the final acceptance of the plant by UL goes through smoothly.

Engineering UL-compliant switchgear requires special expertise. Indeed, the standards and the way in which plants in the USA have to be signed off differ from the approach used in Europe – sometimes considerably. Unlike IEC standards, which merely specify the minimum safety requirements for a device or system, the UL standards for the US market go into more detail in many instances. Before they are started up on site, plants must be signed off and approved by an inspector, known as the AHJ (authority having jurisdiction). The AHJ checks and certifies a whole range of materials, components and final products to ensure their operational reliability and safety. In the case of UL, there is a stronger focus on personal and fire safety, although equivalent IEC and UL standards also differ in terms of technical details. The clearance and creepage distances are slightly larger under UL stipulations and the NEMA type needs to be stated instead of the IP protection category. Another typical detail of switchgear to UL standards is the locking mechanism of the enclosure, which

THE BIGGEST US ORDER IS A JOINT PROJECT

The Machine and Plant Engineering division of the Siempelkamp Group is home to a range of companies from the wood-based materials industry that are supplying parts of the plant. Pallmann, the size-reduction specialist in the Siempelkamp Group, is supplying a wood yard with disc chipper and chip washing system, including a refiner. Büttner is providing the power plant with an output of 53 MW and a dryer, while the screening technology comes from Italian subsidiary CMC. The main plant in Krefeld is supplying the forming and press line, including finishing line, cooling and stacking system, sanding station, dividing saw and an automated high-bay warehouse. Timo Amels, Managing Director at ATR, outlines one of the striking features of the new plant: "The plant can handle a very large range of thicknesses and produce MDF, HDF and THDF panels between 1.5 mm and 42 mm thick."



"We can do UL – and, thanks to the excellent delivery availability from Rittal, we can provide the punctuality we promise our customers."

Timo Amels,
Managing Director at
switchgear engineering company
ATR Industrie-Elektronik

must ensure the enclosure doors cannot be opened while the system is live.

SPEEDING THINGS UP WITH UL SELF-CERTIFICATION...

ATR is part of the UL Listed Panel Shop Program. This means that UL certifies the switchgear engineer at regular intervals and thus ensures the company has – and applies – the necessary expertise to ensure its switchgear complies with the standards for the US market. "Thanks to close cooperation with UL, we can rest assured we are always up to date when it comes to the latest standards," says Rabsch. The in-house plant standards at ATR largely correspond to UL508A, which gives the switchgear engineer an edge on the competition, as Amels points out: "We are permitted to self-certify our systems to UL standards and apply the corresponding label. That saves us a huge amount of time." Companies that are not part of the UL Listed Panel Shop program have to have their switch-

gear certified externally – and that takes time and money.

... UL-LISTED COMPONENTS

Besides knowing how to engineer a plant that satisfies UL standards, it is crucial that all the components used are – as far as possible – already listed or recognised by UL. That is one of the reasons why Rittal is one of ATR's preferred suppliers. For example, the TS 8 series enclosures and busbar systems are UL-listed. The climate-control components and other parts such as the new enclosure lights are also UL-listed and can therefore be used without any problems. The relevant Siempelkamp company undertakes the engineering and electrical planning work for the switchgear and supplies the information to ATR. "We are practically a qualified contract manufacturer," says Amels, explaining the switchgear engineering company's strategy: "That's the way we do things with external customers, too, in other words our customers

- 1) Expertise and productivity are the hallmarks of the control system and switchgear engineering company.
- 2) Punctuality sets ATR apart from the competition. That is why just-in-time deliveries from Rittal are crucial.
- 3) The team at ATR fits out approximately 6,500 metres of enclosures every year.





“The data on Rittal products that is provided on the website and in the Eplan Data Portal is complete. That makes lots of the work we have to do easier.”

Stephan Rabsch,

Head of production at switchgear engineering company **ATR Industrie-Elektronik**

from outside the Siempelkamp Group, which currently account for 40 percent of our sales.” Electrical planning work is completed almost exclusively in Eplan Electric P8 before being supplied to ATR. If the switchgear needs to satisfy UL508A, ATR first checks whether the planning has been carried out accordingly. Customers who have no experience with UL are given appropriate advice so they can adjust their planning to use UL-listed components, for example.

JUST-IN-TIME DELIVERIES

The strengths of ATR lie not just in its extensive expertise, but also in the company’s high productivity. If all the enclosures it manufactures in the space of a year were lined up, they would stretch for more than 6.5 kilometres. “We stand out from the competition thanks to our international alignment and absolute dependability when it comes to deadlines,” says Amels. However, all that also depends on optimum collaboration with suppliers. For example, the just-in-time deliveries from Rittal are crucial to the smooth running of production. Twice a week, a huge semi-trailer truck arrives with enclosures, housings and other components. A dedicated on-site intermediate storage warehouse provides additional

flexibility. “It is also thanks to the excellent delivery availability from Rittal that we can provide the punctuality we promise our customers,” says Amels.

The team at ATR are already working on the future of switchgear engineering – and digitisation is taking centre stage. One of their aims is to ensure consistent data management. “The data on Rittal products that is provided on the website and in the Eplan Data Portal is accurate and complete,” points out Rabsch: “That makes lots of the work we have to do easier – from planning through to documentation.”

CONSISTENT DATA MANAGEMENT

The company is already planning automatic cable routing based on engineering plans, during which cable lengths are automatically calculated. This also requires absolute consistency in data management. In future, ATR aims to make a growing number of processes throughout the value-added chain paper free. That is already the case for documentation. To make wiring paper-free, the company plans to use tablets in planning work. “I don’t want my staff to have to check off paper circuit diagrams during wiring work,” explains Amels, setting out his vision for the future of switchgear engineering. ■

RITTAL TEST LABORATORY HAS UL ACCREDITATION

TESTS. The Rittal quality lab is UL-accredited. The team in Herborn can perform tests for standards independently and ensure the highest possible quality standards. There are 25 members of staff in the lab, which is also accredited by DAR/CSA and certified to DIN EN ISO 17025. The team uses 17 test chambers to subject products to safety and quality tests in line with standards and customer requirements. It also conducts protection category tests to ensure foreign bodies and water cannot penetrate products.



PUTTING ALL COMPONENTS IN THE PERFECT LIGHT

The energy-efficient LED enclosure light from Rittal can be used anywhere in the world, thanks to its wide-range voltage input. Fresnel lenses integrated into the light ensure that optimum illumination is achieved throughout the entire enclosure. This makes wiring and other work inside the enclosure much easier. The lights can be adapted to any installation situation and can be mounted with a clip-fastening or screw-fixing, and also optionally with a magnetic attachment. Whichever option users choose, the installation process takes next to no time. The pre-assembled connection cables make sure of that, and simply have to be plugged into the lights.

Listed and easy to install

Components that are already UL-listed are essential to companies that are planning UL-compliant plants. Here are two examples from **Rittal** that are not only certified but also make installation work easier.



KEEPING THE ENCLOSURE TIGHT SHUT

The enclosure locking mechanism required by UL can be achieved using the isolator door cover from Rittal. The cover is installed on the side of an enclosure and incorporates an actuator for a circuit breaker. A locking rod ensures the enclosure door can only be opened when this actuator has been operated. An adjacent door locking mechanism can also be fitted so that an entire enclosure suite can be locked using the isolator door cover. This means that all standard circuit breakers can be integrated quickly into the locking mechanism based on the same principle.



From zero to hundred

Specialist plant engineering.

To counter growing time pressure, **Zeppelin Power Systems** starts the engineering of its specialist plants not at zero but at 100 – with software solutions from **Eplan** and optimised processes.

Text: Rebecca Lorenz



You could say that electrical engineering is like playing with a huge Lego set," says Gerd Schnirrig, an electrical engineer at Zeppelin Power Systems, with a smile. "Regardless of whether I'm building a drive for a special rail-mounted vehicle, a CHP power plant or a ship, I always select individual components from a pre-existing modular kit and then put them together to create one complex entity."

It sounds easy, but it isn't. Given the huge variety of applications he encounters, Schnirrig has to constantly rethink what he's doing as he engineers the drives. "A ship has different drive requirements to a locomotive," he explains. On top of that, the preferred component manufacturer and the technical standards that need to be met can also differ depending on the customer and where the completed machine is going to be used.

"Keeping a clear overview isn't always easy – after all, in our department, we manufacture virtually all our drives in a batch size of one," says Olaf Wiederhold, who is also an electrical engineer. Nonetheless, the sales and service partner to Caterpillar can't afford long delivery times – their cus-

tomers demand speed. "That is why we had to find a solution that would allow us to cover all the special features of each and every drive without having to start over from scratch every time."

Schnirrig and his colleagues found that the biggest potential lay in optimising processes, with standardised and appropriately automated processes saving time first and foremost in engineering. "Of course, even when you're working with batch sizes of one, you still end up using the same components and assemblies over and over," explains Wiederhold. "That was exactly where we started."

PLM HELPS LIGHTEN THE LOAD

The first thing Zeppelin Power Systems did was to invest in a state-of-the-art product lifecycle management system. "We didn't want any half measures," points out Feeko Harders, head of engineering at Zeppelin Power Systems. "That is why we have completely restructured mechanical, pipeline and electrical engineering over the past two years." Since then, cutting-edge



software solutions – such as Eplan Electric P8, Eplan Pro Panel and the Eplan Data Portal – have been making life a little easier for the engineers.

“As you’d expect, a changeover like that involves more work at first,” says Harders. After all, the more time is invested in forward planning, the bigger the resultant productivity gain. “Going back to the modular system, we first had to assign a macro, a type of logic, to every individual component and article. In future, the components will know themselves what they are and what purpose they serve.”

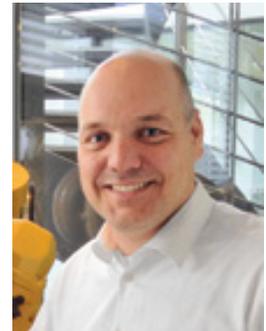
The painstaking detail with which the roll-out at Zeppelin Power Systems was prepared also meant it took just two months until the engineers could start working with the new system. “We are already very happy with the results so far from the new software,” reports Harders. The change it has brought to the day-to-day work of the head of engineering and his team has been pretty striking.

“We’re saving a lot of time even just from using the article-based data from the Eplan Data Portal,” says Harders. “It has completely eliminated the need to compile parts lists manually.” Focus on what really counts – that is the new motto for the manufacturer of customer-specific drive and power systems. The ultimate goal of the specialist plant manufacturer is to achieve an end-to-end flow of data from planning right up to the end customer.

70 PERCENT TIME SAVING

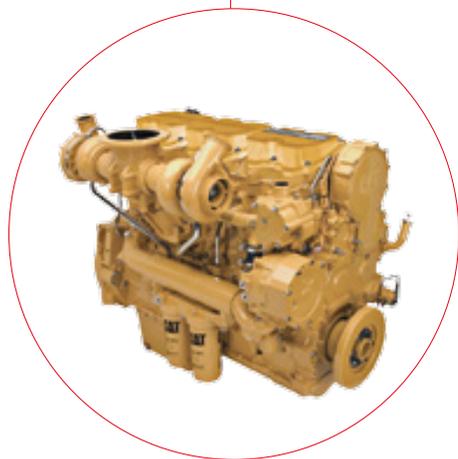
“We actually got a good deal closer to achieving that aim last year,” says Harders, backing up his claim straight away. “We use the 3D data we create during enclosure planning with Eplan Pro Panel to automatically generate the datasets for the drilling templates. Our external service providers for cable assembly also receive a dataset and supply the cable harnesses the following day – it works brilliantly.”

The relevant managers have reported a time saving of 70 percent in wiring alone – but according to Harders, that’s only the start. The next step is to use the PDM system to link up with commercial data. “The flow of information and data in the company will then run seamlessly from the first preliminary planning stages through to marketing.” The consequences, specifically reduced throughput rates and lower susceptibility to errors, will benefit Zeppelin Power Systems in two ways – by taking the strain off staff and boosting capacity utilisation. ■



“We had to find a solution that would allow us to cover all the special features of each and every specialist product without having to start over from scratch every time.”

Feeko Harders,
Head of engineering at **Zeppelin Power Systems**



Zeppelin Power Systems uses gas and diesel engines from Caterpillar to develop and manufacture customer-specific drive and power systems for applications such as rail-mounted vehicles.

Always online, even on the high seas

IT systems. IT requirements on board cruise ships are increasing. The **Meyer Werft** shipyard uses **Rittal** data centers to ensure fast, standardised and fail-safe operations on the Norwegian Joy.

Text: Joscha Duhme and Patricia Späth

3,883

PASSENGERS

can be accommodated on the Norwegian Joy. They all have access to digital entertainment, use cashless payment systems and play in the vast casinos on board. This places demands on the IT systems in the background.



1,821

CREW MEMBERS

on board access areas such as passenger management, use satellites for navigation, order food online and monitor the engines.



25

TECHNOLOGY ROOMS

on the cruise ship are each equipped with three IT racks and two air/water heat exchangers.

For the confident fortune hunters, today could well be their lucky day. The one-armed bandits rattle along, with cherries and dollar bills on rotating rollers racing through the viewing windows of the games machines. Animated voices reverberate around the room, and all the tables are full. The jackpot seems within reach. Viva Las Vegas – or so you might think. Yet this eldorado for casino fans isn't located in Nevada but on the high seas – on board the “Norwegian Joy.”

The world's fourth largest cruise ship comes from the Meyer Werft shipyard in Germany and is specially designed for the Asian market. The Papenburg-based shipbuilder, which has also been producing tankers and freighters for over 25 years and is a world leader, knows these requirements exactly. “As well as larger cabins for whole families, customers also expect larger casinos,” explains Frank Langen, Technical Design Department at Meyer Werft. And it's not just a matter of accommodating them on the ship. Such entertainment offerings also place demanding requirements on IT systems to enable smooth operations, monitoring, play and settling up.

THE IT NEEDS ARE LIKE THOSE OF A SMALL TOWN

IT is now a key factor for these floating small towns, which are increasing in number and have larger capacity. Passengers' demands for digital leisure activities are also increasing. For many people, the ship – which is like a floating theme park – is the actual holiday destination, less so the ports and places it docks at. The Norwegian Joy even has its own go-kart track on board. A floating ecosystem of this kind thus needs to offer maximum comfort. Video on demand in the cabin, mobile Internet access and cashless payments are almost a given for many passengers. The crew also uses satellite navigation on the bridge, central payment systems in the on-board restaurants and continuous monitoring of performance data in the engine room. These types of services are inconceivable without high-performance on-board data centers.

Although installing a data center is just one of numerous design challenges for the shipyard, large amounts of expertise are every bit as necessary for the IT systems as they are for fitting out the 1,925 cabins on the 333-metre-long ship. Ships are becoming bigger and bigger with every year that passes. Yet the space on board a passenger ship for technology rooms and data centers to support profitable cabins and

restaurants is very limited. Repairs to the IT infrastructure hundreds of nautical miles from the nearest port are also only possible to a limited extent. “During a voyage, parts must therefore be easy to replace. The IT system supplier should also offer technical service in the ship's destination countries,” says Langen.

RACKS WITHSTAND VIBRATIONS

“The large diesel engines create continuous vibrations, with the result that special rubber bearings are needed to protect the IT racks. The ship's movements on the open sea also need to be compensated for accordingly. Temperature and humidity too may fluctuate widely depending on the location,” says Wilfried Braun, Key Account Manager at Rittal, referring to additional difficulties that IT suppliers need to overcome on ships. Rittal designed the data centers for the Norwegian Joy. “We've been working successfully with Rittal for years. During this time, we've repeatedly collaborated to develop clever solutions for failsafe and space-saving installation of sensitive IT components on ships,” says Frank Langen, Technical Design Department, at the Meyer Werft shipyard.

Compact installation is thus one of the key requirements, as is autonomous operation of data centers and the ability to handle systems by on-board engineers. The long service life of the ship, which is intended to remain at sea for up to 25 years, requires high-quality components for IT equipment. Other factors include excellent flexibility, scalability and exchangeability of IT modules, as ships are often retrofitted depending on the destination area, as with the development of the Norwegian Joy for the Asian market.

SERIES ENCLOSURES FOR SERIES-PRODUCED SHIPS

Up to six ships in its class are planned at the Meyer Werft shipyard – with outer shells that are around 95 per cent identical and using modular assembly. “In designing the IT infrastructure, a high level of

standardisation is thus also necessary to install the server racks, cooling and power supply quickly and easily,” explains Braun. Failure of the IT systems could lead to acute safety risks and chaos at sea. That's why the Norwegian Joy has two redundant and separate data centers in different fire zones. The ship has over 25 technology rooms, which each house three IT racks and two air/water heat ex-



1) Two redundant data centers are located in different fire zones on board. The picture is from the construction phase.

2) Whether it's a security camera or on demand in the cabin, no video is possible without IT infrastructure.

3) Worldwide warranty – protection against outages is required from the point the Norwegian Joy sets sail.

changers for IT cooling. “These cooling units are actually designed for industrial environments, but have proven to be an ideal solution for cooling distribution rooms thanks to their minimal space requirements and air routing,” explains Braun.

Conventional cooling concepts are used in the data centers. The IT rooms have up to ten TS IT racks from Rittal. The racks are sealed and are climate-controlled using liquid-based cooling systems in the LCP series (LCP = liquid cooling package) with output up to 30 kW. The cooling units are mounted directly on the side panels of the racks. The warm air of the servers can thus be cooled directly and the entire system works extremely efficiently. The warm waste air is cooled using cold water provided by the ship’s redundantly designed water circuits. The ship’s own chillers supply sufficiently cool water for this purpose. The same applies to the power supply, as Langen explains: “Five large diesel engines with five generators ensure uninterrupted power for the entire ship.”

TWOFOLD IT SYSTEMS

The IT output needed on the ship covers very different services, ranging from administrative software to telephone networks.

Typically, communications are handled in the data center, such as the DECT telephone systems for the crew and the telephone and WLAN networks. The entertainment and casino systems, software for enterprise resource planning, hotel operations, catering and payment systems are also operated there. “All nautical shipping equipment on the bridge and safety-related ship systems are completely separate from these IT systems,” says Langen.

New IT technologies are continually coming onto the market that also need to be installed on ships. “Almost every year, the multimedia applications on board change, WLAN use increases and cashless payments are requested. That’s why we need a high level of flexibility in the data center to support future trends, too. Rittal has supplied us with a future-proof infrastructure for the data center to meet these requirements,” says Langen.

“Anyone looking to succeed as a supplier in the shipbuilding industry also has to offer special services for maintenance and repair,” says Braun. Rittal provides a worldwide warranty for the ship data center components. This is enhanced by global support for servicing so as to enable supplies of spare parts throughout the world, for example. Across the globe, 58

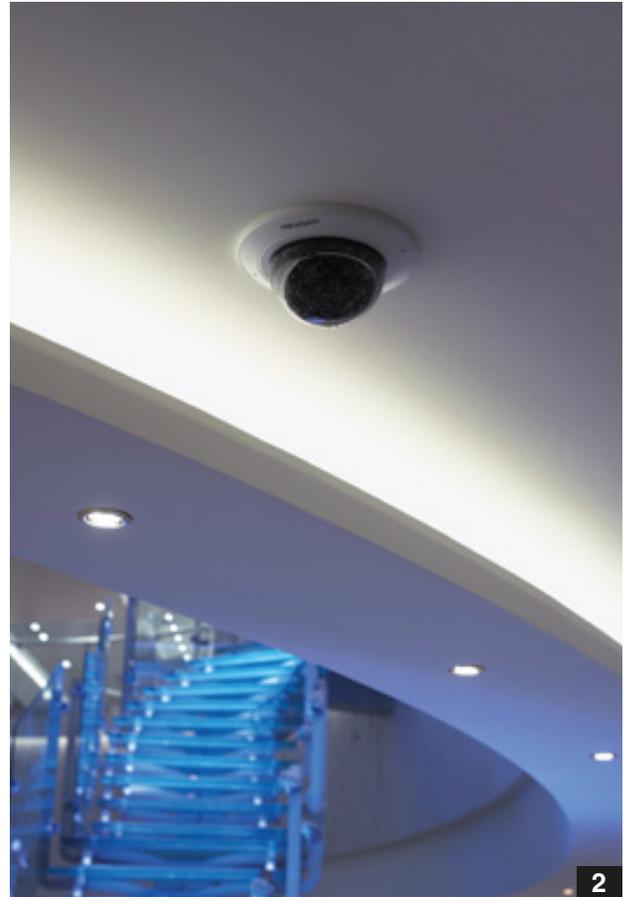
subsidiaries ensure rapid availability in every region on Earth.

Comfort is not just demanded for passengers. The engineers who deal with the IT also need concepts that support rapid installation and efficient maintenance of data centers. This applies both on the high seas and to data centers on land. ■



“Rittal has supplied us with a future-oriented infrastructure for the data center.”

Frank Langen, Technical Design Department
at the Meyer Werft shipyard



2



3

Auxiliary drives skilfully housed

Switchgear engineering.

Large electric motors power the rolling stands in an aluminium cold rolling mill, with the heavy coils also being transported using electric motors. The necessary drive technology is housed in switchgear. But what about the auxiliary drives that are also used?

Dormann + Winkels presents an elegant solution.

Text: Dr Jörg Lantzsch



Positioning the electrical components for small auxiliary drives continuously presented us with problems in the past.” Cornelius Wolters, Project Manager at switchgear engineering company Dormann + Winkels, highlights a typical problem that repeatedly occurs in switchgear for rolling mills. The large frequency converters that are typical of such equipment are powered in switchgear via a busbar system from a central supply unit. There is an additional two-pole busbar system for the converters’ shared DC intermediate circuit. Yet the auxiliary drives – which are required for brakes or fans, for example – also need to be integrated. “That’s why in the past we often planned a separate enclosure,” ex-



INDUSTRY 4.0 AT DORMANN + WINKELS

The SME switchgear engineering company Dormann + Winkels is supplying the switchgear for the aluminium cold rolling mill practically with integrated documentation. Each enclosure has a QR code, enabling a service engineer to access circuit diagrams and maintenance documentation online.



“With the new RiLine Compact, we can not only build our switchgear systems more transparently and save more space – we also cut installation time by 30 to 40 per cent.”

Cornelius Wolters, Project Manager at
switchgear engineering company
Dormann + Winkels

plains Wolters: “But this type of solution is not very transparent.”

FULLY CONTACT-PROTECTED

For a new project – a switchgear system for an aluminium cold rolling mill in Romania – Dormann + Winkels has now developed an alternative, improved solution based on RiLine Compact. The system is actually intended for small applications requiring distributors up to a rated current of 125 A. The compact system is fully contact-protected and can be very easily fitted with the necessary switchgear and protective components, such as a motor starter. The mechanical fixing and contacting of components with the integrated busbar system

are performed in a single step and without using tools. This makes installation much easier and faster than for conventional individual wiring.

In the switchgear for the aluminium cold rolling mill, the new system enabled the auxiliary drives to be housed together with the relevant main drives in a single enclosure. The solution is particularly space-saving, as the RiLine Compact systems have been installed in the enclosure from the side. This is made possible in part because the system is also contact-protected at the rear. If the system needs to be expanded or modified in the future, the individual switchgear and protective components can be easily added to or replaced. As contact hazard protection is always maintained, this

is even possible without having to switch off power to the entire system. The end customer thus benefits from enhanced safety.

“The customer is delighted with this system, as it gives them a very clear picture of the switchgear and also saves space compared with previous solutions,” explains Wolters. However, he argues that the main advantage for the switchgear engineering company is that “we cut installation time by around 30 to 40 per cent.” ■



The configurator

for RiLine Compact is online:

www.rittal.com

Ultra-clean

Food industry. When brand ambassador George Clooney and millions of customers enjoy their Nespresso coffee from capsules, little do they realise that the **Nestlé Group** uses state-of-the-art Hygienic Design solutions from **Rittal**. These ensure the company surpasses all the statutory hygiene requirements at its Product Technology Centre in Orbe.

Text: Manuel Fischer and Joscha Duhme

UNDER HIGH PRESSURE

Strict cleaning procedures place demanding requirements on enclosures used in the food industry.



The high-pressure cleaner is our most important tool," says Philippe Demarque, inspecting the stainless steel roof of a terminal box with a wipe of his finger. Cleanliness is crucial for his work. Cutting corners when it comes to hygiene is out of the question for the production manager at the Nestlé Product Technology Centre (PTC) in Orbe, Switzerland. "Strict hygiene standards are already in force in the food industry. We at Nestlé add two more sets of requirements."

Just how this can look is evidenced not only by the pristine production operations at the research and development centre for coffee, chocolate drinks and malt beverages – the hygiene specifications developed at the centre also show that more is better. How do electrical cables need to be secured? What precautions need to be taken for welding? And how cleanable do the sur-



faces of plant and machinery need to be? Clear precautions are taken for all open processes in food production at Nestlé. The requirements are only less strict in areas where liquids circulate in closed pipes and containers. “We cannot and will not risk deposits such as dust, dirt and water accumulating in our production areas,” explains Demarque. “This is because they encourage bacterial growth and lead in the worst case to impurities and mould formation.” Daily cleaning is therefore mandatory at Nestlé, even for complex installations such as pipework for water or compressed air – and these really are present all over the PTC, Nestlé’s coffee research centre.

EFFICIENT CLEANING

To ensure the cleaning in place is nevertheless as efficient as possible, there is a

specified cleaning procedure. First, cleaning fluid mixed with sodium hydroxide is used to remove the dirt quickly and reliably. This is followed by oxygen-enriched water. Only then is rinsing performed several times with hot water. “The facilities are always cleaned from top to bottom,” explains Demarque. “This is because the flow of water and foam should take everything with it.”

However, curved surfaces, blind spots and exposed threads of screw heads can hinder this effect. To ensure this doesn’t happen, Nestlé uses Hygienic Design – in other words, hygienically designed machines, systems, housings and enclosures,” says Demarque. A large proportion of those in the PTC come from long-standing system partner Rittal.

“Nestlé is a very discerning customer that formulates a highly detailed list of requirements for its project suppliers,” says

Julien Gaillard, Rittal Branch Manager in French-speaking Switzerland. “It’s therefore up to us to propose a solution tailored to the customer’s requirements.” To achieve this aim, Rittal makes substantial investments – not just in consulting but also in product development.

HYGIENIC DESIGN IN EVERY DETAIL

From gap-free silicone seals and sloping roofs to internal door hinges, Hygienic Design solutions from Rittal are planned down to the smallest detail. “Our housings and enclosures should ultimately not only protect electronic components against dust, water and other external influences but should also be easy to clean,” explains Gaillard.

Large transparent covers are therefore fitted at the PTC in Orbe to protect buttons and displays. Screw fasteners are ▶



mounted so that they cannot get lost. Smooth stainless steel surfaces reduce dead spaces and thus the use of detergents and disinfectants. Housings are mounted to the wall with round spacers so that the rear can also be accessed during cleaning. “These small details can have a big impact,” says Gaillard. “And they are standard for our HD solutions.”

This is a standard that also meets the strict national and international hygiene regulations in the food industry. “Whether it’s ISO 22000, Hazard Analysis and Critical Control Points or the Codex Alimentarius, our customers don’t need to worry whether they can meet the common standards,” says Gaillard. “This is because the only prerequisite is regular cleaning.”

SETTING NEW STANDARDS

So it comes as no surprise that Nestlé not only meets the statutory hygiene regula-

tions but surpasses them – and not just in Switzerland but throughout the world. “Even though our national companies can decide independently which technologies they invest in, we set the global standard at the Product Technology Centre,” says Demarque. The hygiene specifications developed at the centre and a catalogue on technical specifications for new acquisitions are guidelines that apply at all branches. We simply want to obtain the best and latest products the market has to offer,” says Demarque. ■



Further information

on Hygienic Design solutions from Rittal is available from:

www.rittal.com/hd



“Strict hygiene standards are in force in the food industry. We add further requirements.”

Philippe Demarque, Control Engineer and Production Manager at Nestlé PTC Orbe



COFFEE AS RESEARCH SUBJECT

DEVELOPMENT CENTRE. The Nestlé Product Technology Centre (PTC) in Orbe, Switzerland, is the Group-wide research and development centre for coffee, chocolate drinks and malt beverages. Nestlé employs around 600 chemists, engineers and other experts at the PTC. Accessing the coffee research centre is like being invited to a maze. Countless lines, machines and control panels have been installed in the relatively small PTC production hall. You would think you had got lost deep inside a spaceship. In this PTC test factory, food experts once developed instant coffee. In the last few decades, they fine-tuned Nespresso capsules before these were produced on an industrial scale for the first time. Similarly, the team has been optimising the freeze-drying process for roasted coffee in these halls over decades. Without these continuous improvement efforts, the indispensable global breakfast companion Nescafé would never have become a multi-billion-dollar brand. Successful product innovations are virtually impossible to implement without a company showing a willingness to also invest in new process technologies. This is where Nestlé relies on the technical expertise of numerous partners. Rittal has been one of these since more than 20 years.

The complete hygiene package

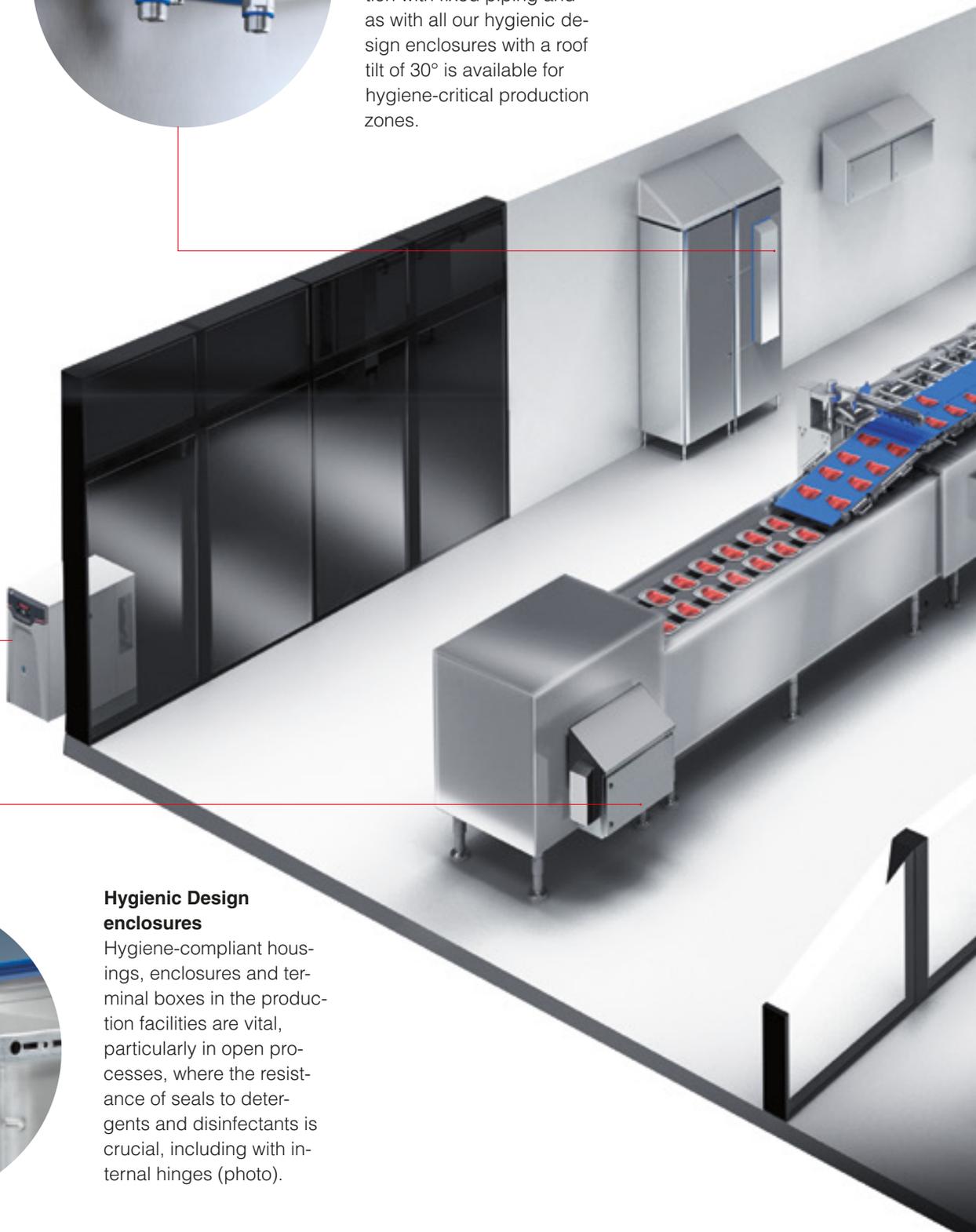


Air/water heat exchangers

An easy-to-clean enclosure climate control solution with fixed piping and as with all our hygienic design enclosures with a roof tilt of 30° is available for hygiene-critical production zones.

Chiller

Located outside the hygiene zone, chillers from Rittal supply the air/water heat exchangers in the hygiene zone and the IT infrastructure with sufficiently cold water.



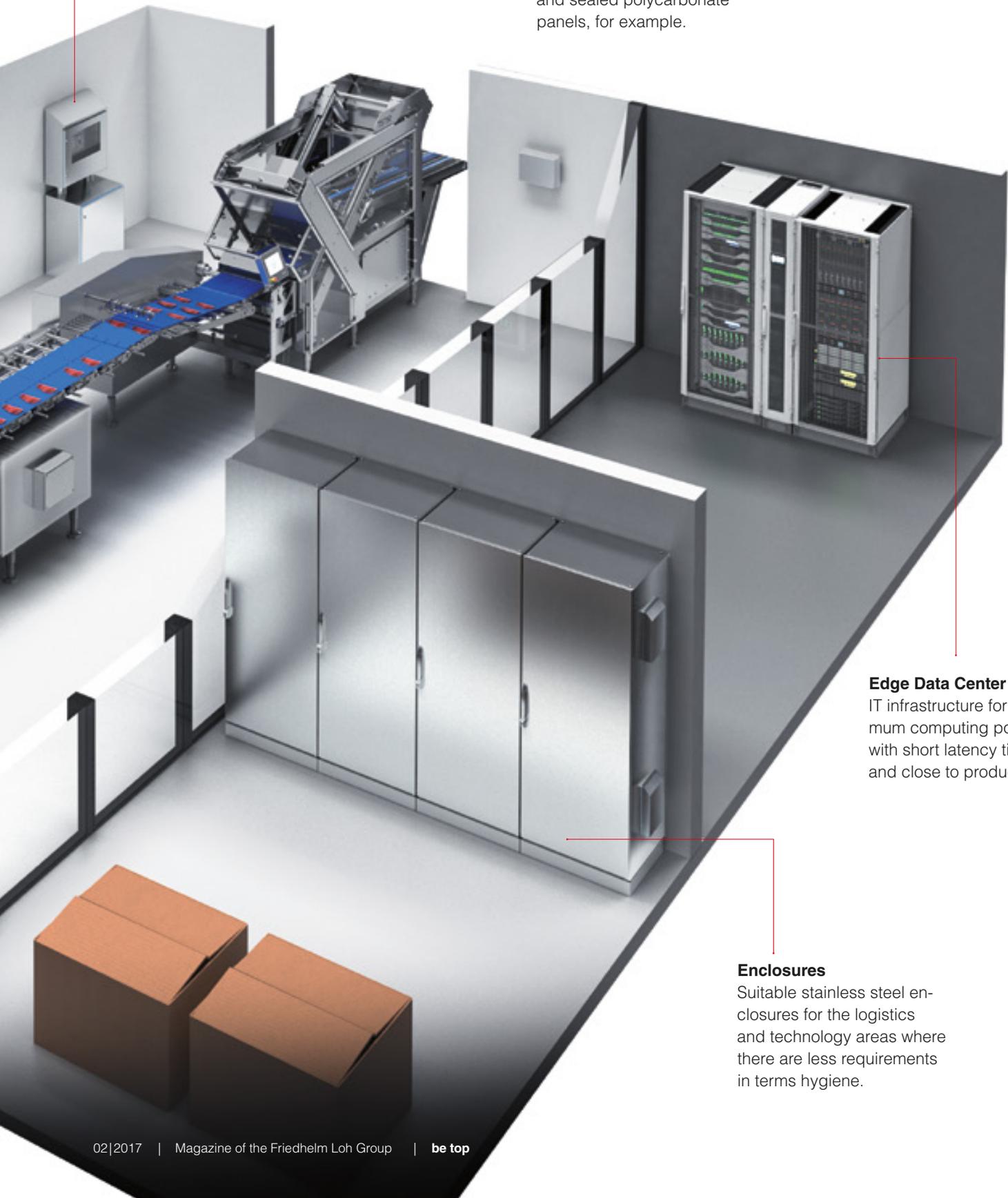
Hygienic Design enclosures

Hygiene-compliant housings, enclosures and terminal boxes in the production facilities are vital, particularly in open processes, where the resistance of seals to detergents and disinfectants is crucial, including with internal hinges (photo).



Command panels and printer housings

These perform key tasks in controlling and monitoring open processes. Commercially available PC components such as computers and label printers can be reliably incorporated into the production process, protected behind integrated and sealed polycarbonate panels, for example.



Edge Data Center

IT infrastructure for maximum computing power with short latency times and close to production.

Enclosures

Suitable stainless steel enclosures for the logistics and technology areas where there are less requirements in terms hygiene.

A start-up with a profile

PERSONAL EXPERTISE

Even with a fully automated process chain from custom ordering and capacity planning to invoice creation, it's all about teamwork at Nedprofielen.

Profiles in construction.

As a start-up, it takes more than a little courage to attempt to break into a densely populated supplier market with extremely standardised products. However, with bright new ideas and strong partners like **Stahlo**, Dutch company **Nedprofielen**, which manufactures sheet-steel profiles for use in dry construction, has done just that. After only one year of being up and running, Managing Director Gert-Jan van der Ham is already reporting rapid growth in production volumes – with break-even in sight. In this interview, he explains how he did it.

Interview: Meinolf Droege



Gert-Jan van der Ham is planning for his start-up Nedprofielen to achieve an annual production rate of well over 1,000 metric tons of profiles.

Mr van der Ham, what made you decide to enter a market that is more than well served and promises very thin margins, as is the case for U and C profiles for dry construction? I come from a company that bought in huge volumes of steel profiles like these and installed them, so I know the market really well. The products have hardly changed at all for decades and the market is dominated by a very small number of companies, at least in the Netherlands. We had a few new ideas, saw an opportunity and – after careful preparation – seized it.

What exactly do you mean by careful preparation and new ideas? It was clear to us that if we were going to do something, we needed to do it well and, most importantly, better than the biggest players. That applies to the plant engineering, materials, processes and products. After contacting Stahlo initially in 2014, we developed a possible strategy for the supply of sheet steel. We also discussed strategies beyond the start-up phase, such as reducing sheet thickness from the current standard of 0.6 millimetres without sacrificing strength. As we buy in the steel by the ton, but sell it by the metre, every hundredth of a millimetre counts in this low-margin market. We made use of the technical expertise Stahlo offers, as well as the independent dealer's access to worldwide sources and insider knowledge of costs and grades. In terms of plant engineering, we very quickly settled on the leading Italian manufacturer, Dallan. The company also offers the option of retrofitting the latest technologies from the machine manufacturer so that – when profile rigidities are increased – additional modifications can be made to wall thicknesses. That will require technical collaboration with Stahlo as well.

Getting back to the sheet steel, standard grades are in use at present. What requirements do you have that extend beyond that? Even relatively minor deviations in certain mechanical values change the way the steel coil runs through the plant – even if it satisfies all the standards. When it comes to strength, yield strength, elongation at rupture and coating thickness, Stahlo offers steel coils with more precise specifications. That's what we need if we're going to be able to run the forming plant reliably at maximum output.



Reliability – that's what it all comes down to. You mentioned earlier that one of the keys to success is better processes. What did you mean by that? We almost exclusively supply interior fitters and a number of dealers who specialise in interior fit-outs. We offer these customers an extremely fast and flexible service for ordering custom profile lengths. It takes them just a few mouse-clicks to order profiles that are

“In our collaboration with Stahlo, we benefit from technical expertise, worldwide sources and insider knowledge when it comes to quality.”

cut to length with millimetre precision. That's how you turn a simple standard product into a highly customised one. Customers make direct savings because they only have to pay for as many metres as they actually need. What's more, work at the construction site goes much faster and disposal costs for waste are completely eliminated. When they place an order, customers are told the price and delivery date, which is typically within a few days. We've

put a lot of effort and expense into fully automating the process chain from custom ordering and capacity planning to delivery and invoice creation. We started thoroughly testing out these complex processes with one customer in October 2016. Since the start of 2017, production has been running continuously at a high level.

How high? By the end of the year, we'll have manufactured and sold well in excess of 1000 metric tons of profiles. Next year, I think we'll see a growth rate in high double figures. We're currently talking to Stahlo about measures that could support even more flexibility. In fact, that's something Stahlo has always been good at. In the really early days, Stahlo supplied us with material even though our company had not yet been established in legal terms. Very pragmatic solutions were found for problems like those.

Besides making the sheet steel thinner, are there any other areas where you can see potential? There's a lot of value that can be added to a profile as a standard product. In principle, it's always about making the product easier to work with on site, so that labour costs can be kept down. Being able to use custom profile lengths is a very important step in that direction. We're also currently experimenting with innovative, much faster assembly systems so that the costs per square metre of space can be significantly reduced. Another step we could take is to put together and supply complete room fit-out packages to cater for the growing trend of converting office buildings into flats and for renovation projects in hotels. We've got more ideas in the pipeline, too.

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Under the palms

A visit to a spa promises relaxation of the highest calibre. However, when a resort reaches the size of those operated across Germany by the Wund Group, the technical requirements for IT infrastructure start to hit dizzying heights, too. Digital admissions management, the cash desk system in the restaurants, control systems for the wave machine in the pleasure pool and automated watering systems for the palm trees – the Thermen & Badewelt Euskirchen spa makes good use of data processing solutions from Rittal for these wide-ranging processes.

FIND OUT MORE IN THE NEXT ISSUE OF BE TOP.



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Watch what birdie now?

The fastest creature on the planet is the peregrine falcon. During a dive it can reach close to the speed of sound – over 320 kilometres per hour.



A lifetime in the Olympics

He crossed the finishing line of the Olympic marathon in five hours, thirty minutes – plus 54 years, eight months and six days. On his long journey, Shizo Kanakuri fell asleep briefly in 1912, became a professor and fathered six children.

Chasing down light

In the Large Hadron Collider, which according to CERN is the biggest machine in the world, protons are accelerated at 299,792,454 metres per second and collided with each other. The speed of light is “just” four metres per second faster.

Lots of flops, one hit

China is overtaking itself. After three years, the new “Sunway TaihuLight” supercomputer has replaced the “Tianhe 2” model, which was previously the fastest computer in the world. With a rating of more than 93 petaFLOPS, the computer can perform 93 trillion calculations per second. That makes it three times faster than its predecessor and should enable better weather forecasts and bioscientific calculations. As a “warm-up exercise”, it created the largest virtual universe that has ever existed. And because that’s not enough, the Chinese are already working on a successor. The next supercomputer is to be ready by 2020 and able to complete one quadrillion operations per second.

Keep up the pace

Speed is a hallmark of digitisation and Industry 4.0. However, there are more or less successful pace setters everywhere.



Watch it now!

Austria is the land of speed checks. But it isn’t just speed cameras and laser guns that are put to use – you have to watch out for the “trained eye”, too. According to traffic laws in the country, it can identify speeding up to 30 kph.



First to the après ski

The fastest skier in the world tears down the piste at 255 kilometres per hour. An amateur skier travels at an average of 50 kilometres per hour.

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