

Rittal – The System. Faster – better – everywhere.



Company presentation

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

A strong family

The Friedhelm Loh Group – a successful business

12,500

employees worldwide

1,500

patents



80

international subsidiaries

2.6 bn

euros turnover

FAMILY BUSINESS

INNOVATION LEADER

GLOBAL PLAYER

TOP EMPLOYER

Rittal

Facts and figures

1961

Founded

58 subsidiaries

40 agents and distributors worldwide

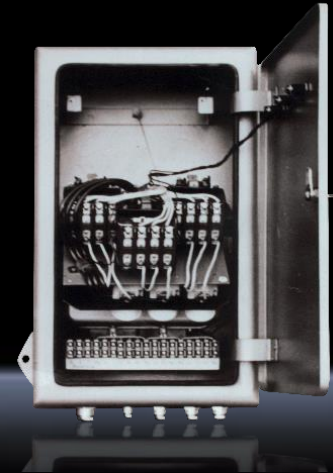
12 production sites

10.000

employees



Rittershausen
The nucleus of Rittal



Core skill sets

Rittal is a leading global provider of solutions for industrial enclosures, power distribution, climate control and IT infrastructure, as well as software and services.

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The Rittal senior management

Common efforts for a common future



Dr. Karl-Ulrich Köhler
CEO



Andreas Huck
Managing Director
Finance and
Administration



Carsten Röttchen
Managing Director
Production



Uwe Scharf
Managing Director
Business Units
and Marketing



Dr. Thomas Steffen
Managing Director
Research and
Development



Dr. René Umlauf
Managing Director
International Sales

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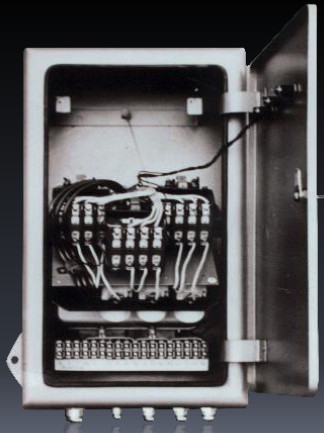
IT INFRASTRUCTURE

SOFTWARE & SERVICES



A tradition of innovation

Historical milestones



1961

Volume production of the very first standard enclosure, AE, begins



1969

RS – the new bayable enclosure



1985

Rittal PS 4000 Enclosure

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A tradition of innovation

Historical milestones



1999

TS 8 – Finally, infinite possibilities



2000

Maxi-PLS busbar system



2013

RiMatrix S – The standardised data centre

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A tradition of innovation

Historical milestones



2015

Blue e+ – The most efficient cooler series in the world



2018

VX25 – perfection with system



2019

AX/KX – perfection with system

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Industry 4.0 initiative

End-to-end digital workflow

Secure your competitive advantage with our expertise and look to the power network of the future for Industry 4.0. The framework of our value chain is provided by networking all the elements involved so that all relevant information is available in real time, and using the data to derive the optimum value adding stream at all times.

Engineering



+

System



+

Automation



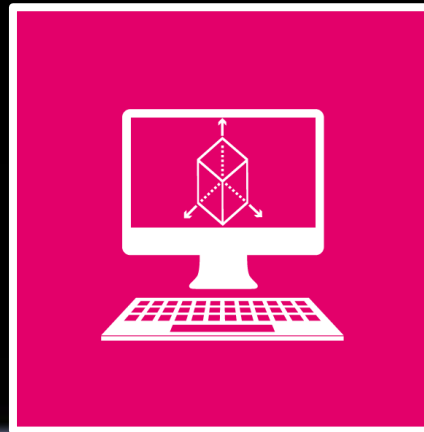
Industry 4.0 initiative

Engineering

Seamless data is the key to automated production processes.

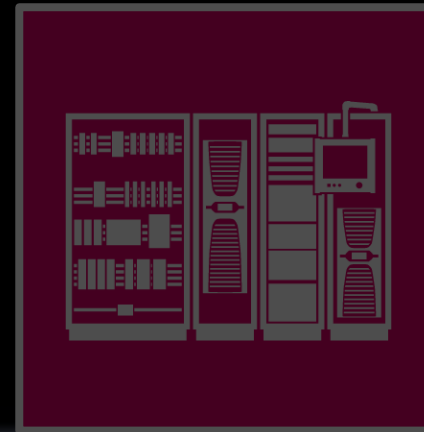
It is based on a virtual prototype with all the relevant information, ensuring the maximum possible efficiency at every point in your workflow. To ensure reliable translation into practice, our colleagues at Cideon and Eplan have developed end-to-end engineering tools that reap benefits in your day-to-day work.

Engineering



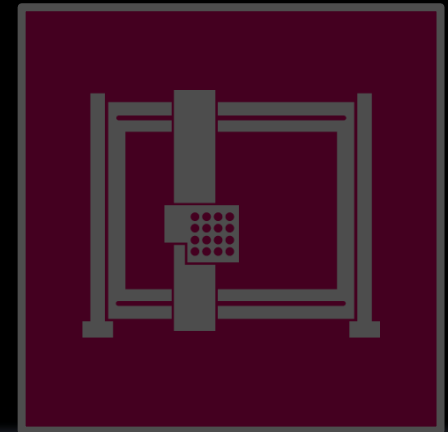
+

System



+

Automation



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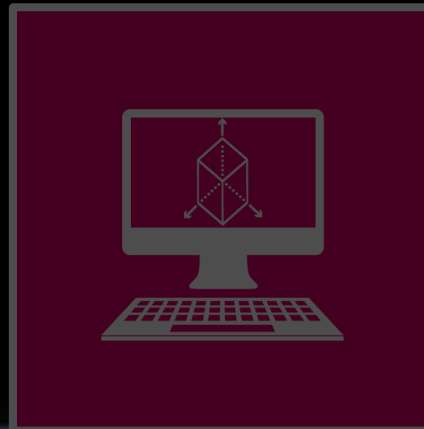


Industry 4.0 initiative

System

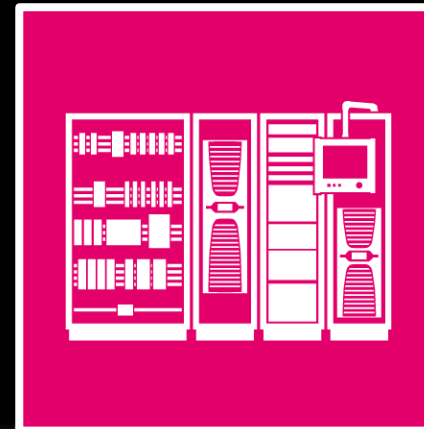
The whole is more than the sum of its parts. It may sound simple, but this is actually an innovative process which constantly drives us to develop unique system solutions. These system solutions offer clear user benefits, boost efficiency, and help our customers to raise their game.

Engineering



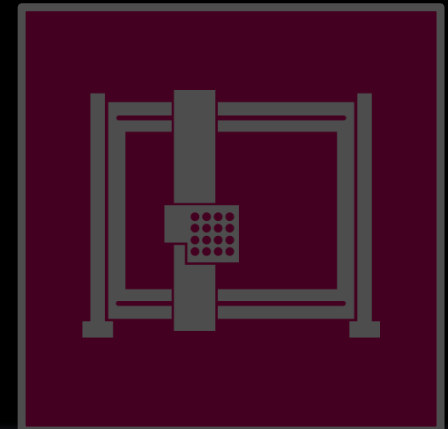
System

+



+

Automation



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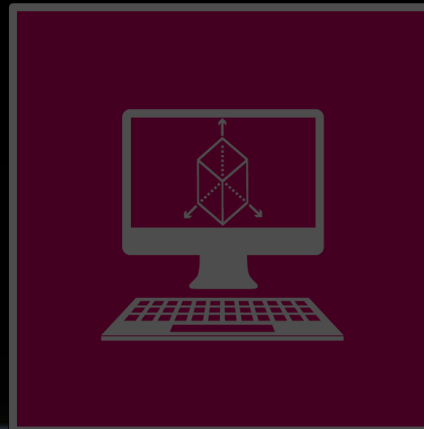
SOFTWARE & SERVICES

Industry 4.0 initiative

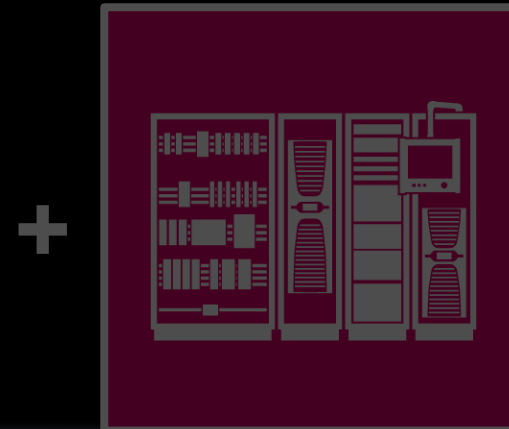
Automation

Interdisciplinary networking helps to strengthen digitalization and create added efficiency. Seamless engineering tools, standardised system technology and automated machine tools create integrated value chains. In this way, we optimise processes in the workshop, create the basis for extensive automation, and boost your productivity.

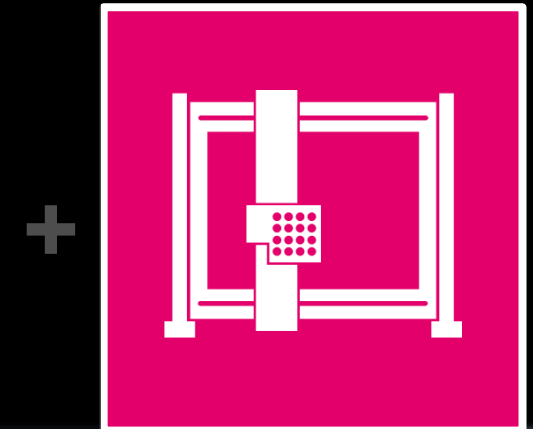
Engineering



System



Automation



From inventor to innovative trendsetter

Enclosures that set technological standards



- One enclosure system for all applications
- A comprehensive range of accessories. The ultimate in versatility.
- Tested product quality for exacting requirements
- Efficient engineering with standardised data

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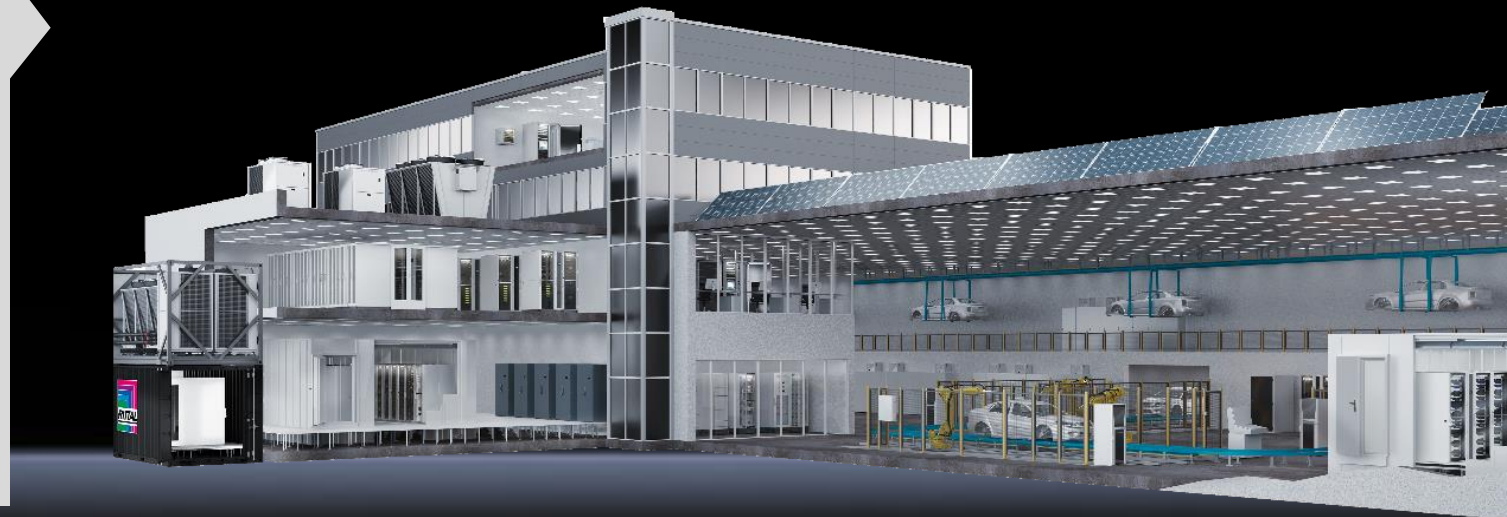
IT INFRASTRUCTURE

SOFTWARE & SERVICES

Moving into the future with intelligent solutions

IT infrastructure – flexible, standardised, a perfect fit

- Intelligent modular principle – from IT racks to complete data centres
- Energy-efficient, high-availability climate-control solutions for racks, bayed suites and rooms
- Powerful data centre infrastructure management (DCIM) software with customised interfaces
- Online tools facilitate your selection

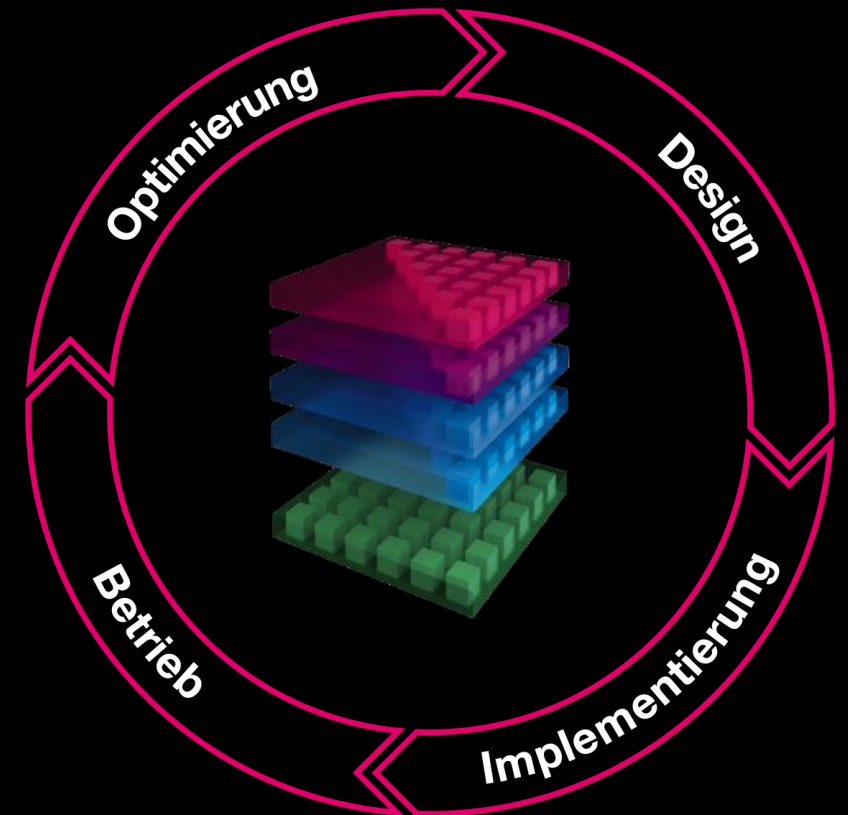


Moving into the future with intelligent solutions

EcoSystem. From planning to operation

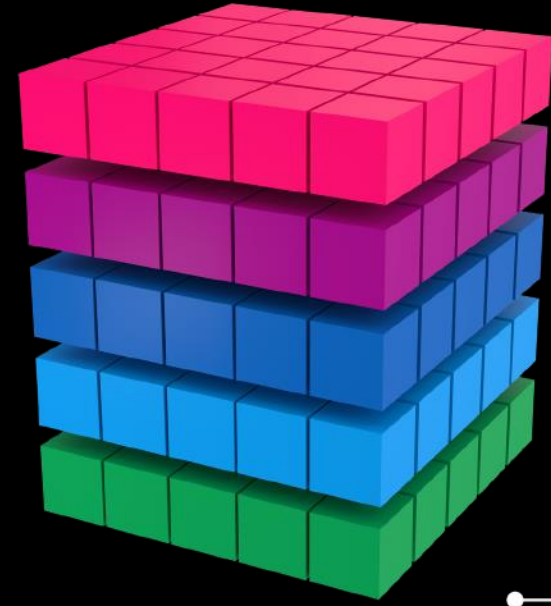
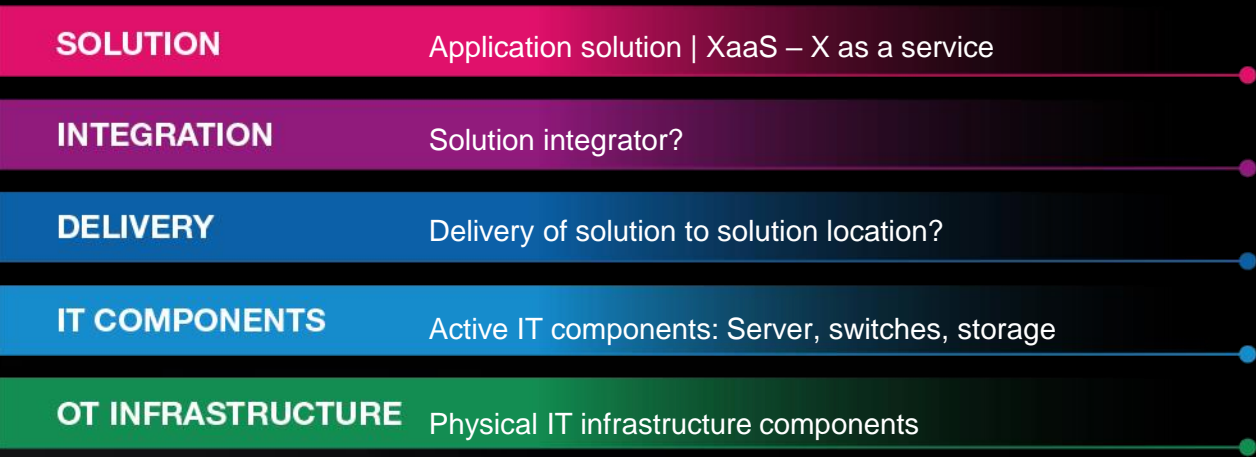
Rittal and its partners support companies throughout the typical lifecycle of a data centre:

- Selecting a concept for solution modules and calculating the investment and operating costs
- Commissioning and signing off on the physical OT infrastructure
- Data centres can also be operated as a managed service by our collaboration partner Innovo Cloud
- Continuous monitoring and optimisation with regard to efficiency, costs and sustainability

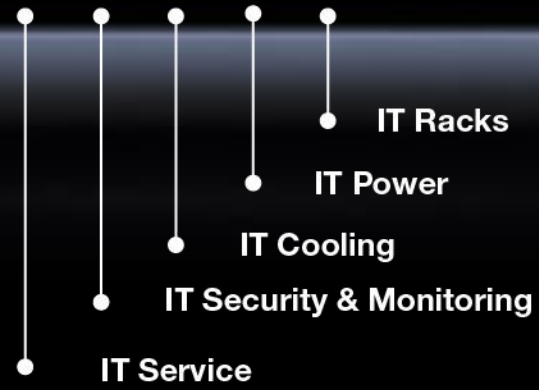


Moving into the future with intelligent solutions

EcoSystem. The Rittal solution stack



- RiMatrix
- Data Center Container
- Security Room
- Edge Data Center
- Rack Solution



Key:

- Z axis: Size of the IT solution, single rack, MDC, container, RiMatrix project, etc.
- X axis: IT components: Racks, power, ... security
- Y axis: Layers of a complete IT environment: OT, IT, delivery, integration, solution



Rittal system solutions

IT infrastructure



- 1 Container Data Center
- 2 Network and server enclosures
- 3 Aisle containment
- 4 Chillers for IT cooling
- 5 Power distribution and back-up
- 6 DC climate control
- 7 Security rooms
- 8 Edge Data Center
- 9 Modular monitoring system
- 10 Micro Data Center

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Rittal system solutions

Secure Edge Data Centers – SEDC

- The collective expertise of three market leaders – maximum speed on all production lines with the Secure Edge Data Center (SEDC) from Rittal, HPE and ABB.
- Turnkey Industry 4.0 solutions
- High-availability IT environment with custom scalability
- Complete data centre with OT and IT components



The benchmark for our products

Tested and certified quality

- Paint finish to automotive standard
- Maximum mechanical stability
- Accredited in-house test laboratory for all relevant tests
- German and international approvals and certificates

*



* Selected certificates



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The benchmark for our products

Optimum surface protection - 3 phases to optimum quality

1st phase:

Nanoceramic
Coating (instead of iron
phosphating)



2nd phase:

Electrophoretic
Dipcoat priming



3rd phase:

Textured
powder coating



More than just a product

Service with added value

More than

1,000 service technicians
in more than 70 countries

More than

150 service partners

8

global service support
centres: Germany, USA,
Mexico, Chile, Middle East,
India and China.



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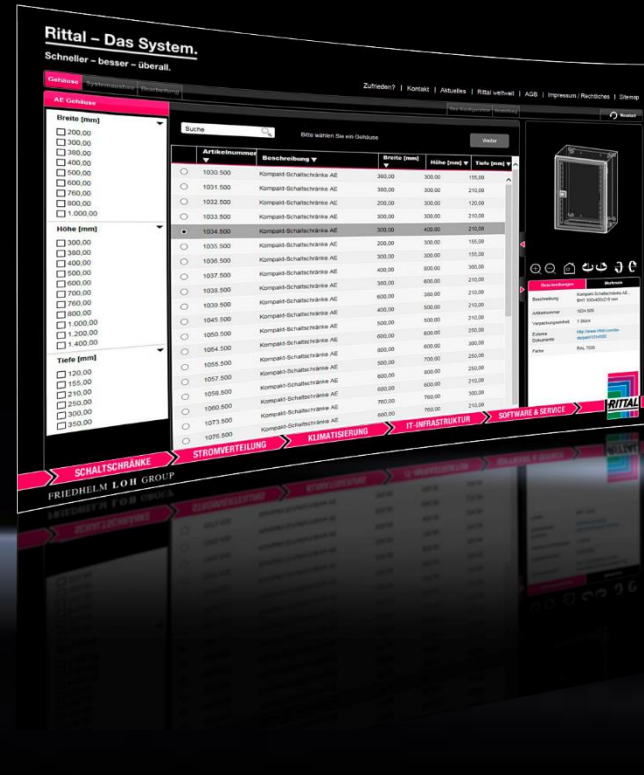
IT INFRASTRUCTURE

SOFTWARE & SERVICES

Planning, project planning, configuration and monitoring made easy

Software and service solutions with real benefits

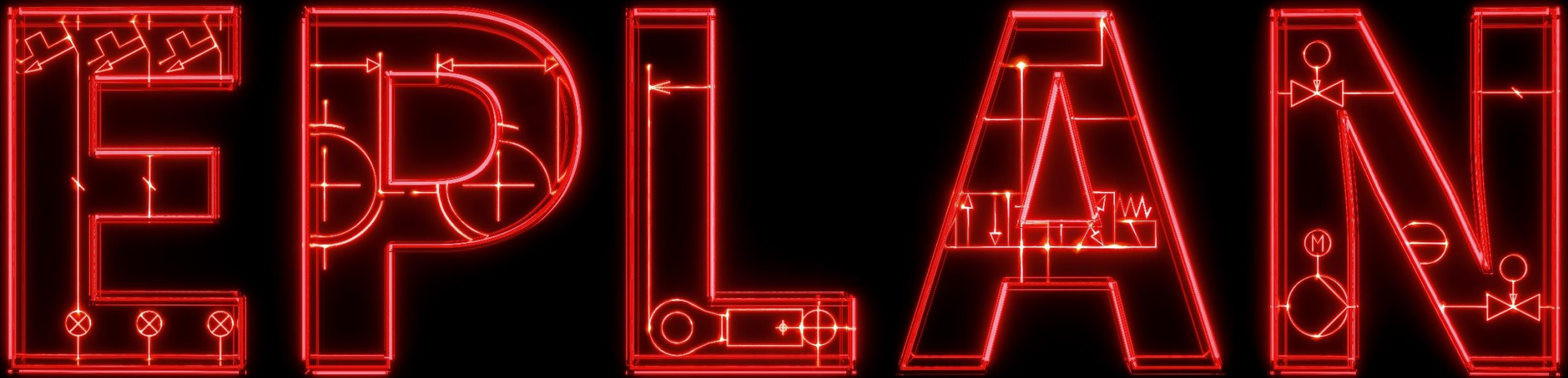
- Eplan engineering solutions
- Configurators
- Selectors
- Planning software
- IT management software
- Rittal apps



- eBooks
- Consulting
- Configuration and assembly
- Technical support
- 24/7 hotline
- Stocking of spare parts
- Online shop

EPLAN

Efficient engineering.



PROCESS CONSULTING

ENGINEERING SOFTWARE

IMPLEMENTATION

GLOBAL SUPPORT

Perfect planning

EPLAN Data Portal



more than

873,000

data sets of international manufacturers ensure highest data quality for your engineering

more than

265

manufacturers worldwide



approx.

1,100,000

downloads per month



Interdisciplinary engineering

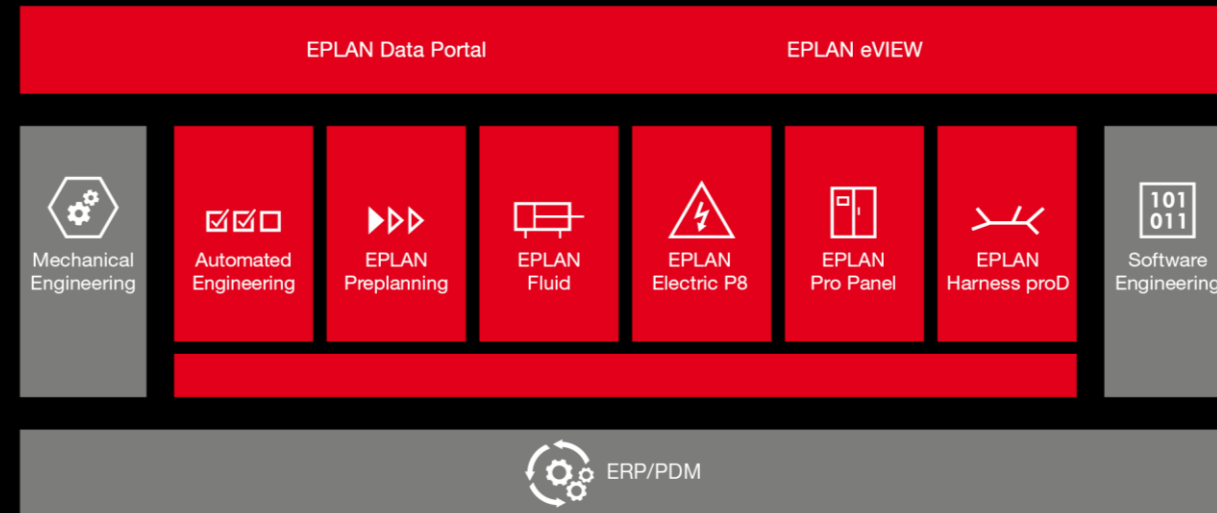
EPLAN Solutions

“efficient engineering.”

- EPLAN is the ideal partner to streamline challenging engineering processes. We provide software and service solutions in the fields of electrical, automation and mechatronic engineering.

Eplan engineering solutions:

- EPLAN platform and cloud system EPLAN ePULSE with solutions like EPLAN Data Portal, EPLAN eVIEW, EPLAN Cogineer etc.
- System openness enables integration into other IT system landscapes.



A new era in engineering

EPLAN Experience

EPLAN Experience:

- supports customers worldwide in using engineering software more efficiently

- eight fields of action from Platform Setup to IT Infrastructure show optimisation potential



IT Infrastructure



Platform Setup



Codes & Standards



Product Structure



Design Methods



Workflow

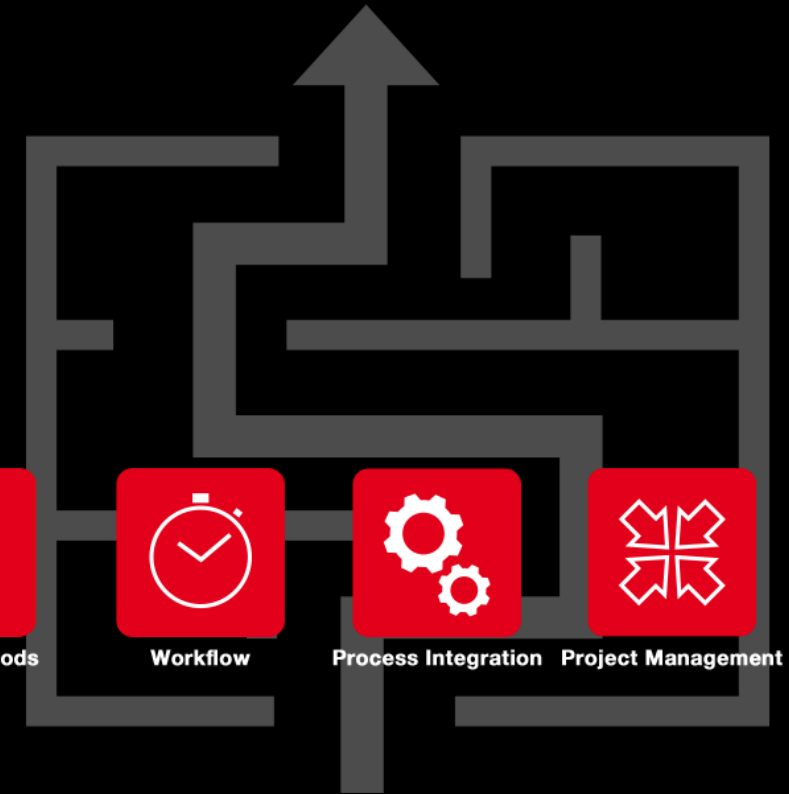


Process Integration



Project Management

- modular and independent of size, industry or location of the company



We understand your business

Solutions that suit the digital value chain in industry



We understand your business

Smart solutions for your IT systems



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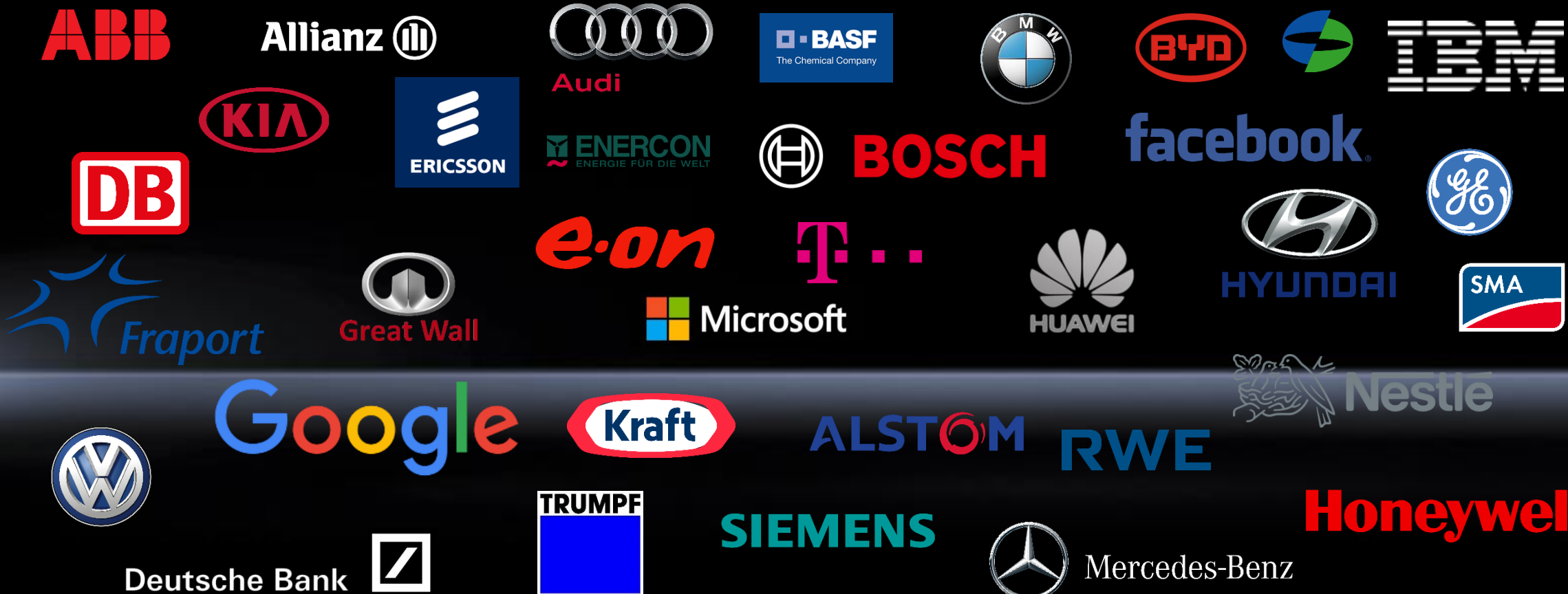
IT INFRASTRUCTURE

SOFTWARE & SERVICES



Satisfied customers are the best reference

Successful companies put their trust in Rittal



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Let there be light!

370

million years old – that's the age of the Kluter cave.

Exploring a cave is always 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.



Clean water

10,000

public sewage plants are used to reliably treat waste water throughout Germany. One of the chemicals used in the process is ozone. **Xylem** manufactures ozone generators. The high voltage of 5.5 kilovolts for these devices is generated in a switchgear system housed in a TS 8 enclosure system. In order to cool the intricate electrical technology required, Xylem depends on cooling units from the new Blue e+ series in the enclosures. This new generation of cooling units helps Xylem save money in the manufacturing of these systems, and its customers benefit from lower operating costs thanks to the energy-efficient cooling units.



Manufacturing valuable goods hygienically

1901

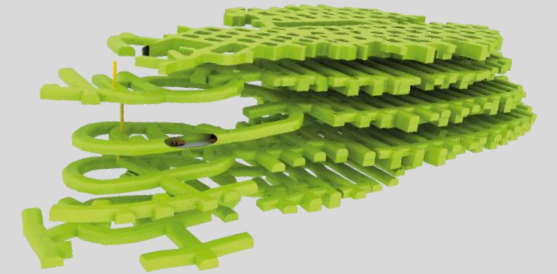
When Daniel Peter built a chocolate factory on the outskirts of the Swiss town of Orbe in 1901, he could hardly have imagined it would become part of Nestlé in 1929. Nowadays, around 1,500 employees work at the Orbe site, manufacturing Nespresso capsules among other things. It is also home to the Nestlé Product Technology Centre (PTC), where coffee, breakfast drinks and infant food are developed. Hygiene-focused designs are particularly important in this environment – Which explains why the factory opted for the Rittal Hygienic Design enclosures, command panels and terminal boxes. These all ensure hygienic production.

Plenty of space

100

per cent of the electricity used in the **Lefdal Mine Datacenter** in Måløy, Norway, is generated from renewable forms of energy.

When it went into operation, it became one of Europe's largest and greenest **data centres**. The facility, housed in a former olivine mine, is already being used by its first customers. Companies can procure cloud services directly at the site or operate their own private cloud systems there.





That holiday feeling

365

days of summer – Thermo Erding is not only the world's largest spa complex, but also a holiday paradise. Ensuring the processes in this wellness oasis all run seamlessly requires sophisticated technology behind the scenes. The spa and swimming pool complexes run by the **WUND Group** use IT infrastructure solutions from Rittal such as IT racks, liquid cooling packages, cold aisle containment systems and the RiZone data centre infrastructure management platform. At each of the sites, the Group is responsible for tasks such as visitor management, billing at the food outlets, and operating various building control systems, for instance to water the palm trees.



Ordered, packed and delivered

70.1

billion euros in sales are expected to be generated by online retailers in Germany in 2021. Whether books, movies, clothes or electronics, to make sure customers get their purchases as quickly as possible, everything has to run like clockwork in logistics centres. This is 3one reason why **online distributors** prefer prevention rather than cure. For instance, thousands of cooling units in the logistics centres run by a major online retailer in China, Europe and the USA ensure fail-safe cooling and smooth operations. **Rittal** is responsible for maintaining and servicing them.

A tiger is shown splashing in water, looking upwards with its mouth open. The water is splashing around its head and body. The background is dark and blurry.

Need to cool off?

NEW

37°C

is human body temperature. When the mercury gets up to around 30 degrees, humans and animals need to cool off.

In India, temperatures like that are by no means unusual during the summer months. However, in extreme heat it isn't just the body that suffers but technology, too. That's why an **international automotive manufacturer** in the Indian state of Gujarat relies on **Rittal cooling units**. It also uses **Rittal Therm** software to calculate optimum enclosure climate control.

Top performance on the high seas

2/3

of the Earth's surface is covered with water. Humankind has only researched and explored a tiny proportion of the Earth's seas. To help change that, Canadian company **Aspin Kemp and Associates** develops energy and drive technologies that are also suitable for maritime applications. The company, established on Prince Edward Island in 1996, pursues its aims with the aid of TS 8 enclosures from **Rittal**, primarily due to the comprehensive certification they offer. Thanks to the high level of standardisation and flexibility of the Rittal solution, customers – particularly those in the very price-sensitive oil and gas market – benefit from low maintenance costs, excellent reliability, energy savings and low emissions.



Powerful

900

megawatts (MW) of output will be currently being built by **Nant de Drance SA** in the canton of Valais in the area between Martigny (CH) and Chamonix (F). Each of the six 150-megawatt pump turbines can switch between full-load pumping operation and full-load turbine operation in less than ten minutes. In total, they generate some 2.5 billion kW/h of electricity each year, powering some 625,000 households. **Rittal** supplied **24 TS 8 combinations** for this major project.

A bride and groom are smiling at each other in a subway car. The bride is wearing a white halter-neck wedding dress with a ruffled collar and a red rose boutonniere. The groom is wearing a dark suit, a white shirt, and a brown patterned bow tie, also with a red rose boutonniere. They are surrounded by other passengers, including a man in a grey suit in the foreground and a woman in a blue jacket in the background. The subway car has overhead handrails and a sign with Chinese characters.

Reliability

20

kilometres per hour is the average speed of the traffic on the streets of Wuhan, the capital of the Chinese province of Hubei.

As this means it can easily take several hours to reach the register office, couples often take the Wuhan metro on their way to get married.

The operator is installing **switchgear enclosures and compact enclosures from Rittal** at all 23 stations along metro line 3.

A large cruise ship is under construction in a massive industrial shipyard. The ship is white with a colorful, swirling pattern of blue, yellow, and red on its hull. It is positioned on a large, dark blue slipway. The shipyard is filled with steel beams, scaffolding, and various pieces of equipment. The lighting is bright, suggesting a large, open space with high ceilings.

Ship ahoy!

4,000

passengers can be accommodated on the **Norwegian Getaway** luxury liner. The cruise ship, which measures 325 metres long and 40 metres wide, was built in just 15 months at Meyer Werft GmbH shipyard in Papenburg, Germany. **Rittal** is also on board with its **SE 8 system enclosures** for lighting technology.



Hot rod

50 °C

and above used to be quite the norm in the switchgear at **Bosch Rexroth AG** iron foundry. These days, liquid-based climate control ensures process reliability and keeps costs to a minimum. This is where **TS 8 enclosures, air/water heat exchangers** and **recooling systems** from Rittal do their job.



Panorama

135 metres

is the height of the **London Eye** – also known as the Millennium Wheel – making it Europe’s tallest Ferris wheel. **Enclosure technology from Rittal** ensures users can marvel at the breathtaking view from the 32 cabins, each made almost entirely of glass. Tourists can simply relax and enjoy the ride on the banks of the Thames.



Monumental

1,889

metres above sea level is where Mount Rushmore National Memorial in South Dakota (USA) is located.

Each of the sculptures is about 18 metres tall.

By the way, the **lighting system** is kept safe and sound in **Rittal enclosures**.



Discovery

26.7

kilometres is the length of the underground tunnel for the ring of the particle accelerator at the CERN Research Centre near Geneva. This is where the Higgs boson was discovered in 2012 – with a little bit of help from **TS 8 enclosures and accessories from Rittal.**

Archived

150,000

manuscripts and over 5 million books of the Vatican Apostolic Library are digitised with the help of a data centre supplied by Rittal



A large field of wind turbines is shown on a hillside. The turbines are white with red tips on their blades. The landscape is hilly and appears to be a coastal or mountainous region. The sky is clear and blue. The foreground shows some rocky terrain and a dirt path.

Stormy

2017

marked the installation of 28,675 wind turbines in Germany. Their total output reached **51,000 megawatts**. 43 per cent of the power generated this way in Germany is provided by **Enercon**. Germany's biggest manufacturer in this field has built more than 27,800 turbines worldwide.

Rittal TS 8 enclosures house the controls. Enercon has already installed way in excess of **125,000 TS 8 enclosures**, including a fair few in the Geycek wind farm, the largest in Anatolia, Turkey.

Close to our customers

Volume production on three continents

240,000

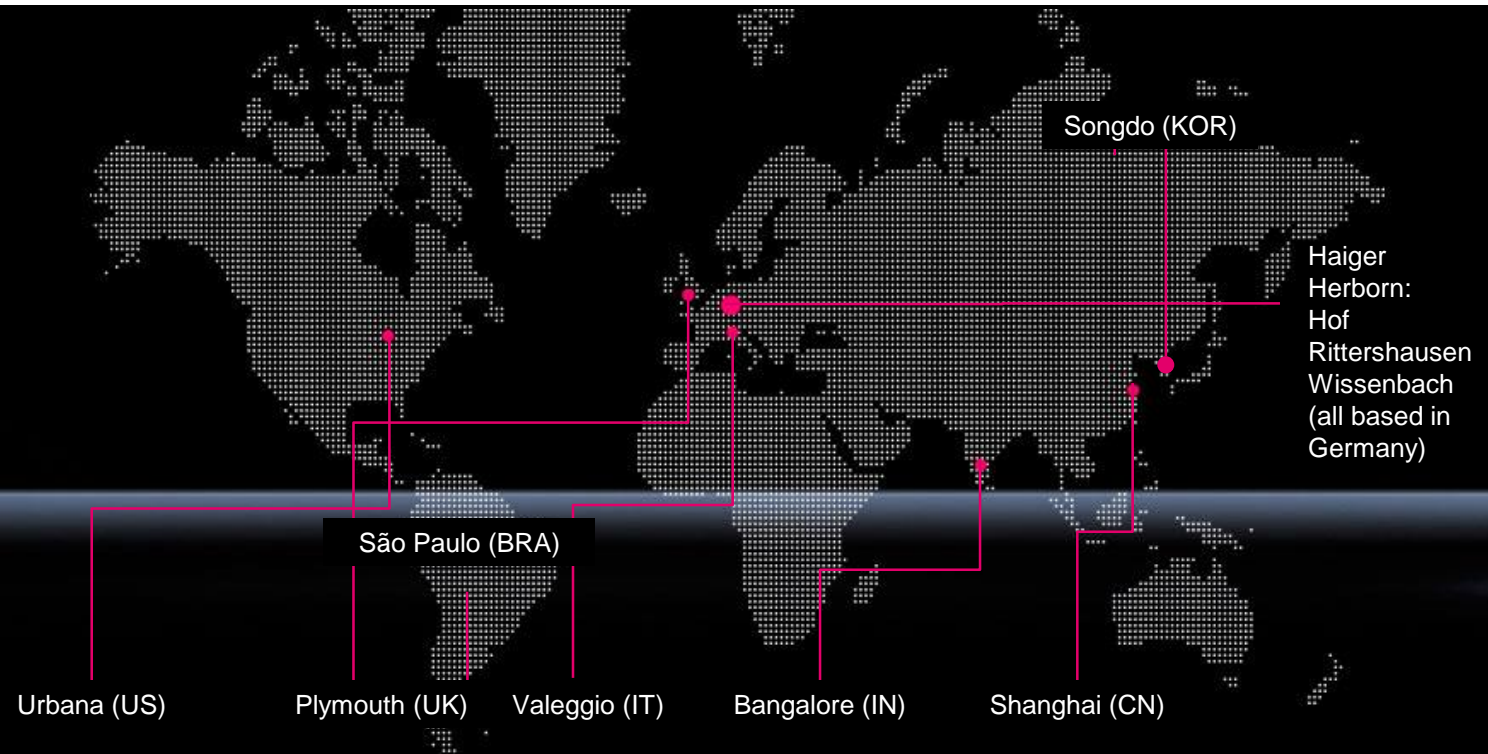
m² production space worldwide

200,000

cooling units per annum

15,000

enclosures each day



Thousands of products available ex-stock

Logistics that are hard to beat

Global and

Rapid

delivery programme

260,000

square metres warehouse space

225,000

pallet spaces



Ordered today, delivered tomorrow

Guaranteed delivery within 24 hours*



- For all high-volume products
- For orders until 2 p.m.
- Even for orders placed before 2.30 p.m. in the Rittal online shop

* In Germany

ENCLOSURES

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Award-winning innovation

Innovations that stand out



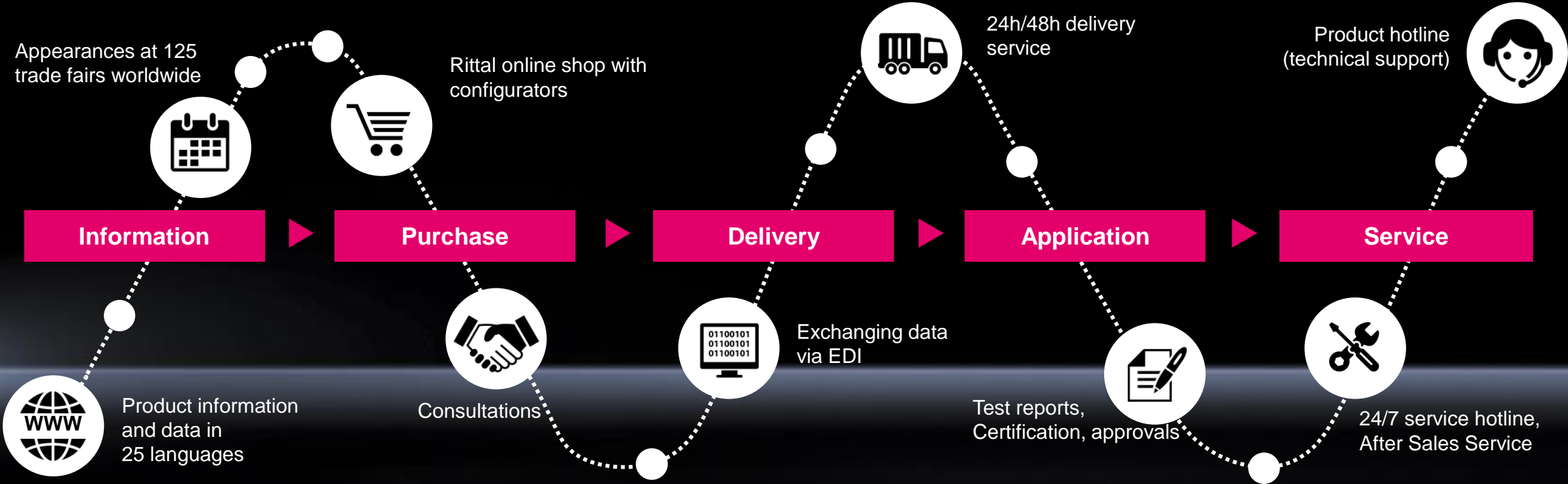
- Rhineland Palatinate Innovation Prize 2009
- Diesel medal presented to Friedhelm Loh in 2010
- Best Innovation Award 2012
- Best Brand Award Korea 2012
- Axia Award 2010; 2013
- DataCenter Insider Award 2015
- Pro-k Award 2015
- Innovation Award German Industry 2015
- German data centre award 2011; 2016; 2019



- More than 1,500 patents worldwide
- More than 200 registered designs

Customer excellence

Get it right from the start



Everyone is important

A top employer committed to social involvement



- Education and development
 - Vocational training/StudiumPlus/Loh Academy
 - approx. € 10 million p.a.

- Loh Academy
 - Participants: approx. 2,400/year
 - Lessons: approx. 28,000/year



- Voluntary social benefits
 - Seniors Club: Activities for former FLG employees
 - Youth camps and Christmas presents for employee's children

Beyond our own four walls

Environmental and social commitment



Joint fund-raising campaigns supported by staff and owner

- 2018 € 200,000
- 2017 € 200,000
- 2016 € 180,000
- 2015 € 200,000
- 2014 € 190,000
- 2013 € 400,000
- 2012 € 180,000
- 2011 € 190,000

Image: Caritas International

FAMILY BUSINESS

INNOVATION LEADER

GLOBAL PLAYER

TOP EMPLOYER

Making a difference

Putting people first



Rittal Foundation

Rittal Foundation, a non-profit Corporation with € 20 million endowment capital



Social affairs

Education



The arts



FAMILY BUSINESS

INNOVATION LEADER

GLOBAL PLAYER

TOP EMPLOYER

Ten principles for maximum success

A family business steeped in values

Our corporate principles

1 The **capability and cooperation** of our staff harnessed to their goal focused motivation is a key asset of our company.

2 We recognise the correlation between skills and knowledge development, motivation and company success. To that end, **we encourage and sponsor our staff** in training and further education and to share in the overall company success.

3 We view our customers as partners who determine the success of the company:

- We must satisfy our customers' wishes and help to solve their problems for they are the guarantors of our future.
- Our products and services must offer clear benefits to our customers in particular with regard to quality, technical capability, range and availability.

4 We must be quicker and better than the competition, and we must prove this to our customers on a daily basis.

5 Our inspiration and creativity result in our competitive advantage. We must, therefore, continually strive to generate ideas and initiatives that can translate into effective implementation.

6 Perfect mastery of our daily business secures our existence and positions us to meet the challenges of the future.


7 Our goal is to develop long term and meaningful relationships on a partnership basis with our suppliers. This requires a strategic outlook based on competitive focused quality, delivery service, price and co-operative problem solving.

8 We focus all of our energies on cost effective design, developing and delivery of products and services in a professional and timely manner.

9 We are aware of our responsibility to the environment and the world in which we live. We want, therefore, to take part in shaping and improving it.

10 We power the system – faster – better – everywhere.

The company's principles were drawn up in 1989 by Group Owner Prof. Dr.- Ing. h.c. Friedhelm Loh.

A portrait of Prof. Dr.-Ing. h.c. Friedhelm Loh, Group Owner. He is a middle-aged man with short, light-colored hair, wearing glasses, a dark suit jacket, a white shirt, and a pink tie. He is smiling slightly and looking directly at the camera. The background is a soft, out-of-focus blue and white gradient.

“The capability and cooperation of our staff harnessed to their goal focused motivation is a key asset of our company.”

Prof. Dr.-Ing. h.c. Friedhelm Loh, Group Owner

Rittal – The System. Faster – better – everywhere.



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