

DC MAG

MAGAZINE OF THE DC-DATACENTER-GROUP

EDGE
COMPUTING

Sustainable path to digital transformation



The data center 4.0

Decentralized IT infrastructures as a driver for the digital transformation



Future-oriented and efficient

Planning and construction of a data center in the Frankfurt/Rhine-Main periphery started



Lighthouse project

Modern and environmentally friendly data centre for PBIT systems opened

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DATA CENTERS ARE THE HEART OF DIGITALIZATION

With future-proof data center concepts,
you are well prepared for the
challenges of tomorrow!

Dear readers,
dear staff members,
dear friends of our company,

Over the past few months we, many of our clients and the entire industry have been confronted with extraordinary challenges. In addition to the pandemic the global political developments are of particular concern to all of us at the moment.

But the DATA CENTER GROUP (DCG) with its motivated team and strong partners is in an excellent position. Together, we work continuously and in partnership on future-proof data centre solutions. They are at the heart of digitalization, with many opportunities for climate protection and prosperity. It is therefore right and important to actively shape the digital infrastructure and the environment in a sustainable manner.

But this is only possible if the innovative and sustainable concepts are reflected within the entire value chain. DCG offers the complete range of services and solutions. This is the decisive advantage we are offering our customers.

We are a strong partner that supplies everything from one single source. From consulting and planning to professional construction and certification to the professional operation and service of the data center. We are the unique professional allround supplier in the market. This is proven by our many innovative projects - whether large or small.

This issue of DC MAG is – among other topics – dedicated to edge computing. This concept is an important driver of digitalization. In our reference reports and technical articles, we show the advantages of local and decentralized data storage and processing. Companies and institutions from all sectors, regardless of size, benefit from short data data transmission times, increased security and, last but not least, their own data sovereignty. These smart solutions are possible, for example in the areas of IoT and Industry 4.0. Besides the Siegen district hospital, we also visited the Hörter pottery factory, where we experienced our customers' enthusiasm about working together at eye level. Through individually developed edge infrastructures, they are ready for the challenges of the future.


Digitalization offers opportunities, but also poses challenges in terms of energy consumption. The project report by our customer Hörmann clearly shows how using targeted reengineering ensures greater efficiency and sustainability in the data center. One further example is the PBIT data center in Cottbus - a lighthouse project in terms of innovative energy management. In one of our interviews the MSR department reports on how the team manages the various parameters in the data center, such as energy, air conditioning, monitoring, etc., in such a way that the most efficient result is achieved for our customers.

The criteria of the "Blue Angel" eco-label provide information on the potential energy savings that can be achieved, the ecological criteria that must be observed and how these measures can be promoted, as reported in a joint interview with Marina Köhn from the Federal Environment Agency.

Last but not least we would like to thank our customers and partners for the good and trustful cooperation. This also goes to our shareholder as well as our employees. You prove every day anew that we are a strong team, and that team spirit is the most important thing - especially in this difficult global political situation.

We wish you and your loved ones only the best and stay healthy!

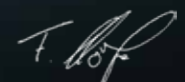
Yours



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IT ORGANIZATION & INFRASTRUCTURE IN A DECENTRALIZED WAY – THE DATA CENTER 4.0

■ The implementation of the Volkswagen Industrial Cloud, the European cloud alternative GAIA-X and the latest plans of German car manufacturers for their own cloud solution CATENA-X, are the latest signs of the trend towards constant IT infrastructure modernization. The trend towards decentralization is becoming increasingly apparent. Edge data centers are DATA CENTER GROUP's (DCG) answer to the changing global and local IT challenges. Jörgen Venot, Head of Product Sales at DCG, knows the hurdles and options the future holds.

The cross-industry requirements to collect development and manufacturing data on a large scale while ensuring seamless supply require sustainable data center concepts for the data-driven business models and IT infrastructures of the future. Innovative cloud solutions are still considered a driver of entrepreneurial competitiveness today. But more and more global players are entering the market with new approaches. The Google Distributed Cloud, for example, is a novel concept that combines cloud infrastructures, edge computing and data centers.

"The developments and demands from the industry sectors show that the cloud does not represent a universal solution for all companies. As a digital pioneer from the field, our claim at DCG is to deliver individual solutions to each customer. Depending on the industry, the structural requirements vary greatly with regard to future technologies. From autonomous driving in the automotive industry to the use of autonomous drones for inventory in logistics," explains Jörgen Venot.

Decentralization of IT: How companies are structuring themselves for tomorrow in the medium to long term

Increasing resource requirements as a result of digitalization and concepts such as IoT, smart cities or 5G require new ways of thinking for data center and cloud providers. Economic drivers for success are stronger performance in the handling of extensive data volumes with low latencies, better scalability, cost reductions as well as data security and data sovereignty. The latter is one of the most important selection criteria in the context of edge computing for the Industrial Internet of Things (IIoT). The GDPR alone is not sufficient to ensure adequate data protection. It covers the protection of personal data, but not machine data. Contractual safeguards ensure that only the respective companies are allowed to use data, not the provider.

Where centralized architectures reach their limits, new opportunities open up for decentralized approaches. Edge is already the driver of digital transformation for 62% of German companies, according to the results of the IDC (International Data Corporation) study¹. Driven by the complex requirements, DCG's goal is to ensure advanced concepts for global availability.

When the cloud becomes a sideshow - back to the data source with edge computing

Decentralization of data generation and analysis at the edge of the network enables more energy-efficient data transfer rates through shortened paths. Reduced latency in milliseconds allows new applications while maintaining high data security. "For us, Edge is a secure and sustainable solution for all companies that work just-in-time and want to evaluate their data on-site. Implemented projects of globally operating automotive suppliers and EDEKA, for example, show how system-relevant decentralized edge solutions are for high availability," explains Venot. The industry study by the Energy Efficient Data Centers Network² outlines that demand is increasingly tending toward smaller, decentralized edge data center solutions.

Global vision with local drive: DCG differentiates in three edge use cases

DCG's edge solutions have grown with diverse project requirements. Completed projects in Africa, Latin America, Belgium, Russia, China or the USA reflect the portfolio as well as the global competence network of system integrators. According to Jörgen, there are three use cases to be classified:

Service-oriented edge data centers (Industry 4.0)

Seamless networking for complex IoT applications brings new challenges. Large amounts of data must be collected and analyzed in real time. As a result of these developments, the edge microdatacenter is proving to be a compact solution. Consisting of an edge rack, it is space-saving and can be set up autonomously. The core of this solution is the DC-IT Safe from the subsidiary RZproducts.

Container Equipment (Distributed)

The DC-IT Container as an edge distribution solution is designed for higher computing power and has twice the capacity of the DC-IT Safe. The goal is to reduce complex IT structures for 5G providers through a service-oriented architecture. The individual container services are geographically distributed depending on the company locations, but interconnected. On-site data security is guaranteed.

Classic data centers

The Big Data strategy of Smart Cities is focused on improving living standards through innovative technologies as well as decentralized working. For this purpose, edge data centers are deployed and connected to central data centers. Modular deployment ensures a data-centric IT infrastructure, which is a basic requirement for the emergence of smart cities.

¹ IDC Study: Cloud-Infrastrukturen und Cloud-Architekturen in Deutschland; International Data Corporation. [2021]

² Dr. Ralph Hintemann: Energieeffizienz und Rechenzentren in Deutschland: Weltweit führend oder längst abgehängt?: Borderstep Institut für Innovation und Nachhaltigkeit gemeinnützige GmbH. [2018]

Editor's note: This press release was initially published as a technical article under the title 'Rethinking IT organization and infrastructure as decentralized - data center 4.0' in dotmagazine 11/2021.



THE BEGINNING OF A NEW ERA IN THE HEALTHCARE SECTOR

Siegen District Hospital converts analog paper archive to digital and future-proof patient care

■ With 90 different networks (VLANs), around 3,100 different digital consumer devices and more than 70,000 patients every year, it is clear that a hospital stores and manages an extremely large amount of sensitive data. A high-performance and fail-safe IT infrastructure is essential. DATA CENTER GROUP spoke with Oliver Schäfer, Team Leader IT at Siegen District Hospital, about the project and the challenges of digital transformation at the hospital.

In the clinical environment, a lot of sensitive data is generated, which makes functioning documentation indispensable. This not only serves medical care directly, but is also necessary for quality and performance recording, research, and patient and staff safety. Due to the diversity of information and media disruptions during documentation, gaps and errors can occur.



(f. l.) Florian Hammer (Area Sales Manager DCG) and Oliver Schäfer (Team Leader IT Siegen District Hospital).

With more than 600 beds in 12 specialist departments, a neurological and psychiatric treatment focus and an affiliated medical care center (MVZ), the Siegen District Hospital provides excellent medical care in the Siegen-Wittgenstein district. Around 1,600 dedicated employees in medicine, nursing, therapy, technology and administration work every day to provide the best possible care for a total of around 20,300 inpatients and around 48,000 outpatients per year.

For this reason, the introduction of the "Digital Patient File" had been on the agenda of the innovative hospital for several years. It serves as a link between the different departments and enables the exchange of information as well as the documentation of disease progression and therapies. This creates enormous time savings, more flexibility for doctors and nursing staff, and thus better patient care.

The project, which will be implemented in the spring of 2022, had been in the planning stage since the beginning of 2020 and was made possible, among other things, by the federal government's KHZG (Hospital Future Act), which was introduced in 2021 and provides funding for the digitization of hospitals. The hospital has taken this as an opportunity to drive forward digital patient care in a future-oriented manner.



To expand the digital transformation, the hospital information system has already been renewed, patient information digitized and finally the "digital patient file" introduced. This quickly made clear, that the current data center was no longer sufficient, that a certain level of fail-safety would be necessary, and that redundancy would have to be created.

However, since this had to be renovated, a new solution was sought. The originally planned room system solution was also only possible under difficult conditions, as a building application had to be submitted for the change of use. So it was decided to use the DC-IT Safe Triple as a solution, which could be installed in a vacated room in the basement.

Although there was already an existing data center and additional data backups on local PCs in the respective departments, this infrastructure was no longer up to the new digitization project. This is because the new redundant data center is also to be used in the future for the fail-safe operation of the hospital information system (HIS), the laboratory data, the digital image archive, the transport systems and ultimately all digital processes in the hospital. "Ultimately, in the long run, all systems should be redundant. That way, we can work with more peace of mind", Schäfer said.

This room was once the X-ray archive and until some time ago patient files were stored here in paper form. The repurposing of the space marks the passing of the baton from the analog to the digital world. "It was the appropriate time, as the analog files were being digitized. In addition, the space is in a different fire zone than the existing data center. This also provides increased security", explains Oliver Schäfer.

Schäfer lists the advantages of the redundant infrastructure as follows:

Facts

- DC-IT Safe height units, triple (3-place chaining)
- Redundant rack-inverter-cooling-system
- Automatic fire alarm and fire extinguishing system
- Redundant power supply
- Uninterruptible power supply (USV)
- DCM Monitoring with DCM Agent
- Video surveillance system

"When it became clear we needed a new data center, we approached several vendors. But who really took care was DATA CENTER GROUP, in person Mr. Hammer. Then the decision was really easy for us", reports Oliver Schäfer with regard to the decision.

It will be much easier to apply updates and patches in the future. The cycles for this are becoming shorter and shorter and the system has to be put into maintenance mode more and more frequently as a result. However, this is not possible during ongoing operation. Schäfer explains: "We have fixed times for maintenance and the systems cannot work during that time. That's why these are generally done after 9 p.m., because that's when the individual functional areas of the hospital are shut down in regular operation." With the new data center, this work can then all take place during normal operation, and that saves a lot of time.

Because during the implementation, the IT department was faced with a significant challenge: Finding a suitable space for the data center. "It was not so easy to find a suitable space. Space is in high demand, especially here at the hospital", says the team leader. Originally, the underground parking garage was planned as a space for the project.

Oliver Schäfer sums up: "The implementation went super. We are fully satisfied and with DATA CENTER GROUP we had a pleasant partner at our side."

“With the introduction of the digital patient file, we needed a certain level of fail-safety.”

Oliver Schäfer
Team Leader IT Siegen District Hospital



Photos: © Hörter Tonwarenfabrik



” The collaboration with DCG was very professional and always on eye level. “

Daniel Stendebach
IT manager Hörter Tonwarenfabrik



SUCCESSFUL FUSION OF TRADITION AND INNOVATION

New micro data center for Hörter Tonwarenfabrik

■ The family-owned business Hörter Tonwarenfabrik, located in Ransbach-Baumbach, has been manufacturing high-quality plant ceramics. Major customers from all over the globe trust in the ceramic's constant Made in Germany quality. Sustainability is an important topic to the company and it is an

integral part of the daily business. Thus, they were looking for a company with the same philosophy for the realization of a sustainable IT infrastructure as the aging server structure was to be replaced by a future-proof and fail-safe infrastructure that could cope with the company's growth and innovative development.

The Hörter Tonwarenfabrik keeps up with the times. Tradition and innovation go hand in hand in the company. The high demands of major customers are implemented through the constant optimization of manufacturing facilities and production processes, as well as the commitment of all employees. "The experience and lifeblood of generations is in every single planter that leaves our production," emphasizes IT manager Daniel Stendebach. He has been with the company for 25 years and has been involved in the development of the IT infrastructure from the very beginning. The company grew constantly to more than 200 employees and with this development, the requirements in this area also increased.

In the age of digitization, the priority of the IT infrastructure of the family-owned company from the Westerwald region grew and thus the importance of the data to be protected. This includes internal company data as well as customer data, but also, for example, product data from the design and manufacturing area. In addition to topics such as backup, firewall and data availability, air conditioning, fire protection, physical access protection and the sustainability aspect play an increasingly important role in reliably protecting the ever-increasing data amount.






"We needed to adjust our digital infrastructure and for this reason we were looking for a future-proof solution to fulfill the regulations

regarding IT security, data and fire protection', reports the IT manager during the conversation with the DC MAG editorial. "After we found the DATA CENTER GROUP via online research everything happened very fast. The micro data center solution, the DC-IT Safe and the professional consulting convinced us right away.

As a family-owned company with tradition and values we attach great importance to find both in the cooperation with other service providers. This was definitely the case during the cooperation with DCG", emphasizes Stendebach.

As the new location for the server was quite accessible, there was no need to consider any larger special features for the planning and during the installation. It took only a few weeks from the first meeting up to the realization. "The whole process went very smooth" summarizes the satisfied IT manager. "The cooperation with DCG was very professional and we were on eye level at any time. That's why we also asked RZservices (service business unit of DCG) to take care of the maintenance, one package for all services. And in the end, everything just fit. We will definitely recommend DATA CENTER GROUP to other companies."

Facts & Figures

-  DC-IT Safe 62 height units
-  Redundant rack-inverter-cooling-system 2 x 1.6 – 4.5 kW
-  19" - USV 6 kVA / 6 kW with degassing function for the DC-IT Safe
-  Automatic rack-fire-protection and fire-distinguishing-system NOVEC 1230
-  Construction time: 5 working days



[f.l.] Florian Hammer, Area Sales Manager DCG and Daniel Stendebach, IT manager Hörter Tonwarenfabrik.



Craftsmanship from the Westerwald: clay pots from Hörter are in demand worldwide.



Every clay pot carries the experience and the lifeblood of generations.

LITTLE EFFORT – BIG ENERGY SAVINGS

RZservices ensures greater efficiency and sustainability with targeted reengineering in the Hörmann data center



Thanks to targeted reengineering measures, RZservices was able to achieve significant energy savings in the Hörmann data center.

■ **The Hörmann Group is Europe's leading supplier of doors and gates. Since the company was founded in 1935, more than 20 million doors have been produced and delivered worldwide. The Group produces high-quality gates, doors, frames, operators, access control and storage systems for use in private and commercial properties around the globe. The headquarters of the globally active Hörmann Group is the small Westphalian town of Steinhagen in Germany. Since 2012, the company has relied on the expertise of DATA CENTER GROUP (DCG) when it comes to secure IT infrastructures, having built the Hörmann data center at its main site in Steinhagen. And after construction is before service: The use of RZservices (service business unit of DCG) shows that a large saving of energy is possible with little effort.**

Hörmann and DCG already have a long history together (see timeline below). DATA CENTER GROUP built a modern, highly available and efficient data center at its headquarters in Steinhagen. Already in 2016, the 4th German Data Center Day took place at Hörmann's premises and DCG has a long history of trustful cooperation with Hörmann in the field of fire protection doors.

"Targeted reengineering measures, i. e. re-designing existing systems and structures or replacing an old system with a new one, can achieve a great result in terms of energy savings with little effort. This makes the data center more sustainable, which in the end also contributes to immense cost savings", reports Ulrich Mickler, Technical Director of RZservices. He optimizes data centers to keep them efficient and to make them more sustainable. The expert specifically identifies weak points and adjusts all parameters in such a way that the result is greater efficiency and cost savings through lower energy consumption. His know-how and expertise are based on numerous successfully implemented projects.

One of many examples of how energy consumption can be reduced with little effort through reengineering is the power adjustment carried out by Mr. Mickler at the Hörmann data center in Steinhagen: In the initial situation, six air-conditioning cabinets with different power configurations were working here. "After the adjustment was carried out by the power equalization of the climatic chambers, there was a reduction of 6 kW with approx. 4,300 operating hours. Projected over the year, the savings now amount to 25,800 kWh", reports Ingo Reichelt, Data Center Operations Administrator at Hörmann.



Hörmann is the specialist for gates, doors, frames and drives. With DATA CENTER GROUP the company has a long history.



Another energy saving was achieved by adjusting the power with a frequency converter. A cooling water pump was adjusted. The initial situation here was that the cooling water pump of chiller 1 had an output of 4.2 kW. After the adjustment by the RZservices expert, a reduction of 2.6 kW was achieved with approximately 4,300 operating hours, which means an annual energy saving of 10,400 kWh. "We have been working with DCG for many years and are pleased about the ongoing and trusting cooperation",

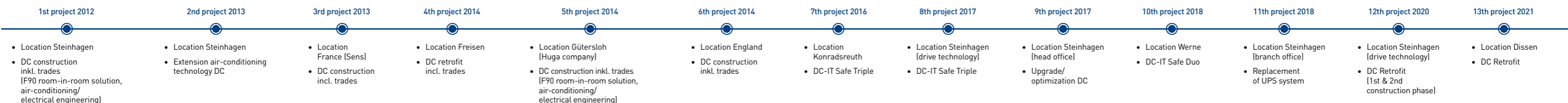
emphasizes Ingo Reichelt. "The experts from RZservices simply know exactly what is important. They know our data center and all the trades inside out. With their know-how, they make our IT infrastructure even more sustainable. We feel well taken care of all around. Additionally, the targeted measures enable us to make significant savings in energy costs at little expense. After all, the annual cost savings of only these two reengineering measures amount to almost 10,000 EUR."

Facts & Figures

4,300 Operating hours / year

> 35,000 kWh Energy saving / year

10,000 EURO Annual cost savings



PREPARED FOR ALL DANGERS: CRITIS CUSTOMER RELIES ON SUSTAINABLE HIGH-PERFORMANCE DATA CENTER

The new data center in Wedau-Nord is being extended by a two-story annex



All the trades interlock perfectly: state-of-the-art technology and a special sustainability concept ensure secure data center operation.



A groundbreaking concept: The lease agreement provides for three rental space levels for around 100 server racks each.

In the area of critical infrastructures (CRITIS) data security and availability play a very special role. A customer from this segment relies on the expertise of DCC Duisburg CityCom for its IT and has signed a long-term lease for a total area of 1,400 square meters with a total of 310 server racks.

The history: In a construction period of only twelve months, DCC Duisburg CityCom (an IT and telecommunications service provider and part of the Duisburg utility and transport company DVV)

realized a new high-performance data center together with DATA CENTER GROUP (we reported in DC MAG 15). The data center is characterized by its special sustainability concept. „The award is a proof of the quality and high security standards that we offer with our data centers and IT infrastructure,“ says DVV managing director Marcus Vunic, who is responsible for information technology, telecommunications and digitization.

The lease agreement provides for three rental space levels for around 100 server racks each. All this space is located at the site of the new DCC data center in the future Wedau-Nord technology quarter. From March 2023 the server rooms in the existing new construction will serve the customer for the first leasing stage. For the two further leasing stages, DCC will then build a two-story extension in the coming years.

“We are pleased to be able to generate further growth. Many customers, like ourselves as a critical infrastructure company, have special demands on their IT infrastructure. In this area, we are well positioned with our data centers, which meet the highest security and availability classes, setting new standards in the region,” says DCC’s managing director Stefan Soldat.






The standards are based on the specifications of the German Federal Office for Information Security (BSI). The infrastructure has a redundant design. This means that the supply of power and cooling is secured multiple times even in the event of failures. The data center is supplied with power from two separate network access points, and in the event of a failure of the external power supply, continued operation is ensured for 72 hours at full load via diesel generators.

The data cables are also protected by separate lines. State-of-the-art technology and highly qualified personnel ensure trouble-free and safe operation in order to meet the customer’s high safety requirements without restriction.

Photos: © DCC Duisburg CityCom GmbH



Facts & Figures Expansion stage 1

-  **110 racks**
for a total capacity of 660 kW (6 kW per rack)
-  **Refrigeration**
with direct free cooling
-  **Cooling supply**
in 1:1 redundancy
-  **Security technology**
with EMA (intrusion detection system)
-  **Access control**
as well as video technology

Photos: © PBIT Systeme



SUSTAINABLE AND INNOVATIVE: TO SATISFY CROSS-INDUSTRY CUSTOMER REQUIREMENTS

■ Lighthouse project: DATA CENTER GROUP implements state-of-the-art and eco-friendly data center for PBIT Systeme and enables digital schools, eGovernment, smart health solutions and industry 4.0

PBIT Systeme, located in Cottbus, aims to simplify their clients' IT operation and to implement the individual process requirements using state-of-the-art technologies in an efficient and future-proof manner. Beside smart IT solutions, individually adjusted to customer-specific requirements, digitalization requires above all one thing: A secure and dynamic data processing and storage in a stable and cost-efficient infrastructure. Ensuring this is the company's quality standard, which is why PBIT Systeme is now also the operator of a state-of-the-art and sustainable data center in Cottbus, which was planned and implemented by DATA CENTER GROUP's experts. "With the start of the tender we talked to many companies offering data center solutions as well,

but the requirements were never sufficient for the Brandenburg data center. Finally, we did some online research and found the DATA CENTER GROUP. In addition to this, we have obtained additional experience reports of working with DCG", reports Kay Sander, managing director PBIT Systeme.

Highest security and availability of sensitive data

The data center is directly supplied with power from the redundant medium-voltage ring of the city of Cottbus. Two different medium-voltage lines (MSP) with cross-free routing up to the medium-voltage main distribution (MSHV) serve as the primary power source.

„ The data centre is a lighthouse project in terms of sustainability and energy efficiency. “

Michél Düring
Sales Manager Projects DCG



Downstream of the MSHV, the internal power paths are also redundantly routed. In the event of a power failure, fully redundant uninterruptible power supplies (UPS) and an emergency power

supply (NEA) absorb fluctuations and thus guarantee high availability. The new data center will primarily house public-sector clients, specialist procedures, school IT, e-government infrastructure or hosting. With all these challenges come high security regulations and data security

requirements. In addition, however, customers from industry and the healthcare sector will also use the data center services.

Eco-friendly power supply via photovoltaic system

500 square meters of south-facing solar surface on the roof and facade supply the Brandenburg data center with self-generated solar power. In the future, the expansion of further solar surfaces on the data center area is planned. The Brandenburg data center is being cooled with outdoor air via redundant, indirect free cooling. Up to an outdoor temperature of 24 °C the server technology can be operated in an eco-friendly manner in a well-tempered environment via indirect free cooling. In case of temperature increase outside of the data center over 24 °C, high-performing, climate-neutral cooling machines, equipped

with the cooling device water, go into action. The availability of customer data is in the focus of all planning options for an efficient and sustainable data center operation. Redundant fiberglass connections ensure a stable and highly-available access at any time. "This project is a lighthouse project in Brandenburg in terms of sustainability and energy efficiency", underlines Michél Düring, DCG consultant. As a pioneer and user of such technologies, data center operator PBIT Systeme is taking a special path that points the way forward for other projects."

Comprehensive protection for the complete IT infrastructure

The data center's preventative fire protection concept ensures that a fire cannot even occur. The protection of customer data is one of the top priorities to PBIT Systeme. Therefore, the data center is secured by a multi-phase concept at any time. The server technology – the core – is surrounded by 4 protective areas. Additionally, all data center systems are constantly observed by a monitoring system. The alert and energy management provide the central collection, monitoring, analysis and evaluation of all decisive measured values that are relevant for the data center's supply and operation. "With DATA CENTER GROUP, we have found the right partner to provide our customers with sustainable, highly-secure and future-proof protection of their data", emphasizes Kay Sander.



(f.l.) Michél Düring, Sales Manager Projects (DCG); Sebastian Metje, Head of Operations & Services Cottbus; Roman Skrczypek, Head of Consulting & Projects; Torsten Schenker, Sales and Partner Management (PBIT Systeme).



Security around the clock: Protecting customer data is a top priority for PBIT Systeme.

DECENTRALIZATION AND THE BOOST TO DIGITALIZATION

■ Donald Badoux from the DATA CENTER GROUP in conversation with Dr. Thomas King from DE-CIX on the importance of decentralized infrastructure for modern applications.

The Covid 19 pandemic caused a boost in digitalization and an increase in data traffic. Can you specify these effects?

T. King: In general, we register annual traffic growth – which is how much data we transport for our customers – of 20 to 30%. During the first lockdown in March 2020, we saw that amount of growth within a single week, due to people working from home, video conferencing, and digital home schooling. Many people were streaming videos via Netflix, YouTube, etc, or playing online games in their free time. As we were all no longer able to pursue our usual activities, everything shifted to the digital level. As a result, we are now observing a sustained increase in demand for digital solutions, and thus, the need for interconnection.

What course is this trend taking? Is this digitalization boost slowing down again or do you expect the demand to increase further?

T. King: Our observations don't show a decreasing tendency – quite the opposite. Of course, Covid-19 accelerated this development, but many developments are likely to stay. Grandparents now know how to make video calls, so video calls instead of telephone calls have become the new normal. Society has become even more open-minded to digital services and more and more people are willing to use them. Therefore at the same time, traffic volumes and the need for low latency has also increased considerably.

Can you give a short explanation of what latency means and why low latency is that important for digital applications?

T. King: I have a classic example: Anyone who has ever watched Netflix, YouTube or any other video streaming provider knows the spinning pinwheel that sometimes appears while the video is loading. This is a practical example for latency which exists in every application. It describes the time that it takes for data to get from where it's being generated or processed to where it's being consumed or executed. For example, when you press a button in an application or on a web page to perform a certain action, latency describes the time it takes to get the result. Thirty years ago, when the Internet was built up, it wasn't so crucial how long data took to flow through the network. People were happy that it was even possible to call up a website from the USA in the first place. But in the meantime, our requirements have grown considerably, and low latency is becoming increasingly important, especially for interactive applications.

This can be reduced by bringing data and users closer together. On the one hand, physically, for example by bringing the data centers closer to the users. On the other hand, the network connections – which means the cables used to send the data – must also have short paths. And that's why it makes sense to set up additional Internet Exchanges in certain locations.

As of the end of 2022, there will be just such a new DE-CIX exchange in Leipzig. Why is it necessary to have this location and are there already others in the pipeline?

T. King: Yes, further locations are planned. Last year, four new locations went into operation worldwide and another seven were announced. These are implemented either together with partners – as in the case of Leipzig with the telecommunications provider envia TEL, among others – or on our own. In 2022, further sites will be opened – potentially even more than ten. This is necessary due to increasing customer demand and advancing digitalization. To give an example, applications such as video cloud streaming, virtual reality or autonomous driving must move even closer to the customer: this means that edge computing is needed. That's why Frankfurt cannot be the only exchange. Instead, everything needs to be decentralized – as in the case of Leipzig – in order to keep latencies correspondingly low. Accordingly, there is an increased demand for the geographical distribution of data centers and thus also for interconnection. (Read our reference report on the new envia TEL data center at the future DE-CIX location in Leipzig in our previous issue DC MAG No. 15).

This means the tendency is toward decentralized growth and thus beyond metropolitan areas such as Hamburg and Frankfurt?

T. King: Yes, the examples of Leipzig or also a new location in the Ruhr region show clearly that the tendency is towards decentralization. We set the Ruhr-CIX up completely remotely in March 2021, during the Covid-19 pandemic. That was also a new experience for us, that this is possible without our technicians being on site. We solved this with video calls, extensive documentation and Remote Hands¹. It was exciting to see that you can adapt so quickly and be efficient. In addition, it's better for the climate because there's no longer a need for so many staff to travel, only the technology is

sent. This may not be so important for a new location in the Ruhr region, but it is more important for an international deployment, such as the one we had in Southeast Asia in 2021 and the one we are currently carrying out in Northern Europe.



” The work of DE-CIX is very important for us and our customers. “

Donald Badoux
Chief Sales Officer DATA CENTER GROUP



” The requirements of digitization have grown significantly. Low latency is becoming increasingly important. “

Dr. Thomas King
Chief Technology Officer DE-CIX



Will this development have lasting effects on the processes in your company?

T. King: Absolutely! There is no need to fly to the setup of all the sites that we are doing now. In the past, a separate team was sent there, and we set up everything ourselves. Now we do it almost exclusively with Remote Hands or Smart Hands² on site. There are a few very minor exceptions, for example when we take over existing exchanges and need to carry out a migration. This is a bit more complicated, and we then must be on site – but nowhere near the number of people we used to have. We then also make greater use of local resources.

Are there also efforts to make this growth ecologically sustainable? Are there specific requirements from DE-CIX?

T. King: We have sustainability on our agenda, and it is encouraging that data center operators are already very active here, as many of them are already using green power. In my view, this is also the essential part that we can contribute, because the power consumption in data centers is considerable. We are committed to ensuring that

– wherever possible – the electricity is green. But it must be said honestly that not all data centers in all regions where we are active offer that. And yet we are observing a change in the industry, and we are supporting that by actively requesting green power.

That is then an investment by the data center operator. Do you also see other developments where the end customer must invest, such as in more efficient power consumption?

T. King: Yes, that is correct. We are also actively investing here, for example by replacing old hardware that is still functioning but consumes a lot more power than new hardware, which is much more efficient – we're talking about savings in power consumption of up to 70 or even 80%. Although the production of the hardware also generates emissions, when calculated over the runtime, the replacement is worthwhile, and we can make an active contribution to the environment with these investments.

Please share your assessment as CTO: What do you think about new technologies such as IoT, 5G, etc.? What is behind them and where are these developments leading?

T. King: I think IoT is very exciting. If you look at all the sensors that are already in use everywhere and what can be evaluated and controlled – whether in the private or industrial environment – it is essential that the digital infrastructure behind it is expanded accordingly. And this trend will make the digital infrastructure even more relevant. But we're still at the beginning of this, and it's going to be a huge development. 5G is very important for edge applications and wherever low latencies are necessary. We are entering new areas of what is possible, and this will open up new fields of application – also in interaction with IoT devices.

never let me go, and therefore I studied and did my doctorate in this field and then applied for a job at DE-CIX. After a few more stops in between, I now have the privilege of working here as Chief Technology Officer.

D. Badoux: And that's how we got to know each other. A few years ago, we negotiated with one another regarding a location for the exchange in Frankfurt – and we have stayed in contact ever since. The work of DE-CIX is very important for us and our customers. We work on many projects – such as in the case of envia TEL – for local and regional data centers. These are particularly important for educational institutions, clinics, and other critical infrastructures, and that's where DE-CIX is an important partner.



At the Internet nodes, DE-CIX cables and patch panels are used to interconnect various networks.



Dr. King, finally one question about your background: How did you come to the industry and to DE-CIX?

T. King: When the commercial Internet emerged at the end of the 90s, I already had my own modem and invested my pocket money in dialing into the Internet. At that time, I was still charged by the minute and had to pay my parents for the increased telephone bills. But I was totally fascinated that suddenly there was the possibility to be in contact with different people all over the world thanks to chat applications like ICQ. That

T. King: This is exactly the development we are seeing: Towards decentralization. That's why your projects are relevant and exciting for us.

Many thanks for the interview and the assessment.

¹⁾ Remote Hands Services include very basic tasks such as rebooting a server, disconnecting and reconnecting cables, and checking and reporting indicators.

²⁾ Smart Hands Services are similar to Remote Hands Services, but more complex and require a higher level of IT skills.



FIGURES DE-CIX

DE-CIX (German Commercial Internet Exchange) is the world's leading operator of Internet nodes with more than 35 sites worldwide. Together, DE-CIX Internet nodes form the world's largest neutral interconnection ecosystem with a connected customer capacity of more than 100 terabits. With a data throughput of more than 11 terabits per second (Tbps) and over 1000 connected networks, DE-CIX in Frankfurt am Main is one of the world's largest Internet nodes.



38 exabytes of data were exchanged at DE-CIX Internet nodes worldwide in 2021.



The connection capacities of the nodes in Germany increased immensely in 2021:



DC FOR RHINE-MAIN PERIPHERY WITH A STRONG JOINT VENTURE: DCG, SÜWAG AND NORIS

■ Together with Süwag Energie AG and noris network AG, DATA CENTER GROUP provides the course for a new data center in Hofheim, which will offer colocation and IT services.

to the provision of IT space, the three partners are planning to offer hardware-related IT services and other professional IT services. Each of the companies will contribute its respective know-how from the data center business - from the planning to the operating and sales phase. All participants benefit from the expertise of the other partners.

Ecological sustainability is already taken into planning of the highly available and energy-efficient data center so that the project can be a contribution to the energy transition. For example, the use of waste heat for a local heating network is planned, as well as grid-serving energy services or the design of the emergency generators for synthetic fuels. For the participating companies involved, the planned joint venture is an excellent opportunity to offer customers a new data center location and first-class IT services from the Rhine-Main region.

Ralf Siefen, founder and CEO of DATA CENTER GROUP, comments on the initiative as follows: "Modern, future-oriented applications, sophisticated communication infrastructures and operational as well as emergency concepts place special demands on the planning of data centers. We are looking forward to the ground-breaking ceremony and to share our many years of know-how in the development, planning and construction of efficient, sustainable data centers certified according to the latest standards."

The construction of the new FRA1 data center in Hofheim-Marxheim with approximately 11,000 square meters follows the increasing demand for highly available and secure, as well as energy-efficient data centers and professional IT services in the Rhine-Main metropolitan region in Germany as a business location. The data center is to reach a connected load of 30 megavolt amperes in its final stage and to go into operation in 2025. In addition



DCG, Süwag Energie and noris network set the course for a data center in Hofheim. (f.l.) Dr. Markus Coenen and Mike Schuler (Süwag Energie AG), Ralf Siefen (DCG), Florian Sippel and Ingo Kraupa (noris network AG).



EVERY STEP TOWARDS SUSTAINABILITY IS OF VALUE

In an interview, the two architects Luisa and Uwe Pfeifer report on the areas of responsibility of RZingcon



Cross-generational teamwork: Uwe Pfeifer has overall responsibility for the business unit RZingcon. His daughter Luisa has also joined the team as an architect a few months ago.

Both of you work in the RZingcon business unit at DATA CENTER GROUP. How do you define the work area?

Uwe Pfeifer: "As a DATA CENTER GROUP business unit, RZingcon comprises the architecture and technical building equipment (TGA). The division manager for TGA is Stefan Krämer. In addition to the colleagues at the headquarters in Wallmenroth, we also have a strong cast of architects and technical building services engineers in the Berlin branch. Luisa Pfeifer, Peter Zöller and I, as architects, together with Christian Tigges, as a construction engineer, cover the field of architecture. We are supported in the background by four draftsmen and one trainee who we are already teaching in the early phase of the data center planning. The assistant to the head of department and the team of TGA-planners support us with their professionalism during the planning phase. All architects and planners are specially trained in data center planning."

■ DATA CENTER GROUP works across generations. The best example for this is Uwe Pfeifer, who has overall responsibility for the RZingcon business unit. And, within this, he is particularly responsible for the area of architecture. His daughter Luisa Pfeifer has also been working there as an architect for several months. In this interview, they both talk about their responsibility areas, visions and trends in the market.

How is the team structured? How are the responsibilities distributed? Where is the focus and what is part of your portfolio?

Uwe Pfeifer: "After a restructuring and internal division into architecture and TGA, I am in charge of the architecture division as well as for the RZingcon division and its employees. With the reorganization, we can act in an even more targeted manner and create the best possible solutions for our customers."

Our portfolio includes all services according to HOAI (Fee Structure for Architects and Engineers), which are divided into nine service phases. The architects are mostly the "heads" towards the customers but internally they rely on the experienced team of draftsmen and work together with the TGA planners on the project in a solution-oriented manner.

My personal focuses are:

- Management of the business unit RZingcon
- Preparation of planning offers and order confirmations
- Preparation of data center planning from preliminary design to implementation planning

- Conducting competitions and processing the associated documentation, together with the TGA department and my assistant, who makes a significant contribution here
- Control of architectural services (HOAI 1-9)
- Project management and controlling of the team in the taken over customer project
- Initiation and controlling of the invoicing in cooperation with my assistant and our accounting department
- Support of the two business units proRZ (professional data center construction) and SECURisk (holistic consulting) by providing architectural services in large-scale projects."

” We combine sustainable and energy-efficient concepts with an architecturally appealing exterior. “

Uwe Pfeifer
Division Manager RZingcon



What is the focus of your work, how do you work together as a team?

Uwe Pfeifer: "We are used for product-independent planning for both the public and private sector. These are usually plans, according to the specifications of the HOAI. Independently we support our colleagues in SecuRisk with concept development in the context of your analyses and feasibility studies. We actively support our business unit proRZ with the preparation of work and assembly plans in small and large turnkey projects and, if necessary, also with the superordinate object supervision."

Luisa Pfeifer: "We work closely together as a team and support each other to be goal-oriented and successful. Value chain is the keyword here. We work closely with the building services sector to generate the greatest possible added value in terms of sustainability and energy efficiency. In our projects, it is particularly important to always keep this topic in focus. Every step that contributes to greater sustainability is important."

Can you give a brief insight into the current projects - how have the requirements for your work developed in the last few years and what technical tools do you use for your planning?

Uwe Pfeifer: "We are currently working on 3 major projects with server room sizes ranging from approx. 6,000 sqm to 8,000 sqm and more. The planning of large projects has increased strongly. For this we have worked out strategic concepts together with our colleagues from the TGA, to then put it into an architecturally appealing and harmonious exterior."

By using the latest CAD software, we are always working in 3D models, additional software enables us to create a photorealistic representation of the building so the customer can already see what his building will look like on the plot. With the aforementioned software, we are also very good at recognizing collisions in the 3D model during the planning. We can see directly here, for example, when cable routes, supply pipes, and ventilation ducts are on the same levels and collide. This avoids errors even before they occur on the construction site."

Luisa Pfeifer: "The CAD software also allows BIM (Building Information Modeling) processing. The BIM software combines tools for architectural designs, building engineering, structural design and structural engineering into a comprehensive all-in-one solution. Because of these functions, we can optimize all workflows and constantly improve collaboration between the trades."

The data center market is on the move. How do you react to the constantly changing challenges in your daily business? To what extent do you work together with the other business units?

Uwe Pfeifer: "All of us in the team are constantly challenged to know and deal with guidelines, standards and certifiers. In addition, we regularly train in-house, we all regularly attend training courses or are in contact with a wide variety of companies to learn about their new developments. Also, in technology there are constantly new product developments in connection with the topic of sustainability, particularly in refrigeration (Co2 neutrality, energy efficiency), which we have to follow and check in order to then decide which concept is the most suitable and best for which project."

Luisa Pfeifer: "The cooperation in the other business units of DATA CENTER GROUP is very strong internally. We take on consulting tasks in many places, handle planning topics and support the general contractor area in planning and project supervision."

Where do you see future trends in the market

Uwe Pfeifer: "To name the most important ones at this point, which will certainly determine the future of the IT market: Autonomous driving, artificial intelligence, blockchain, quantum computing (in the scientific field), virtual and augmented reality, cloud and edge computing. We are already dealing with these topics on a daily basis, are observing the developments and constantly incorporate these trends into our planning and concepts."



POLITICS AND THE DATA CENTER INDUSTRY ARE CHALLENGED

Bitkom study: Data center market growing significantly and sustainability becoming increasingly important

■ On behalf of the digital association Bitkom, the Borderstep Institute carried out the study "data centers in Germany" deals with the current market development of the German data center landscape. The results of this research show very significantly, that the capacities of German data centers have increased considerably over the last five years – tendency further increasing. It points out topics and trends in the market and gives indications of potentials and opportunities of digitization. Furthermore, it shows where there is still untapped potential, especially regarding sustainable data center operation.

"The German data center market is significantly growing. Within the scope of the study, we observed numerous levels of this development and we stated, that there are many opportunities but at the same time many challenges that need to be mastered", says Ralph Hintemann. He is shareholder and senior researcher at the Borderstep Institute for innovation and sustainability in Berlin and carried out the study together with his team. His very special scientific interest is in the potential for sustainability. According to the results of the Bitkom study, capacities grew by 30 % between 2016 and 2021, measured in terms of the maximum power consumption of the installed hardware. There are currently just over 3,000 data centers in Germany, each with more than 40 kW of IT connection capacity.

In total, there are around 50,000 smaller IT installations and data centers in Germany. "In particular the growth in the data center market is due to the increasing expansion of cloud computing offerings in Germany", Hintemann emphasized in the interview. "Here we are seeing very significant growth." The study points out, that this trend will constantly continue. Data center capacities in Germany will continue to increase in the future. By 2025, they are expected to increase by more than 20 % compared to 2021.

Edge data centers are gaining importance

These study results also clearly show that smaller data centers at the edge of the Internet - so-called "edge data centers" - will also become considerably more important in the future. According to the Bitkom study, experts assume that edge data centers will develop strongly, especially for autonomous driving and energy supply management. According to the assessments, they enable low latency times, for example, also for the field of augmented reality and especially for 5 G mobile communications. Edge data centers would become more important, especially in locations where data volumes are high, and processing is as local as possible. "Edge data centers are also DATA CENTER GROUP's answer to the constantly changing challenges of the IT market", emphasizes Jörgen Venot (Head of Product Sales, DATA CENTER GROUP).

The share of colocation data centers in the IT capacities is – according to the study results – considerably increasing as well. According to the study, at least 10,000 German companies use colocation services. By 2025, this share will increase by 50 % - specially to satisfy the demand of hyperscaler such as Google, Amazon, Meta & Co.

The growth also presents new challenges for data center companies such as DATA CENTER GROUP. "The demands on data centers regarding energy efficiency are constantly increasing, and sustainability is playing an increasingly important and significant role. This is where we come in with new innovative concepts to optimally combine digitization and climate protection", says Jörgen Venot.

The research results of Ralph Hintemann's team clearly underline it: Due to the growing importance of data centers, it is necessary to make their construction and operation as energy-efficient and climate-friendly as possible. Efficiency potentials must be identified and exploited. The electricity required to operate data centers must be produced in a manner as climate-friendly as possible. Requirements for the climate-neutral operation of data centers, according to the study, must be defined transparently and comprehensibly. For example, concepts for waste heat utilization must be created to drive development in this area as well.

"It is important to consider the issue of sustainability in its entirety. In addition to the ecological perspective, companies must also include all other aspects of this topic in their concepts", says the expert. "Above all, it will be very important to clearly define what is meant by specifically sustainable and climate-neutral data center operations. It is essential to create a uniform understanding here to be able to plan and act on this basis. We need clear terms and frameworks. This is a challenge for policymakers and the data center industry", emphasizes Hintemann.

Source Bitkom study: <https://www.bitkom.org/sites/main/files/2022-02/10.02.22-studie-rechenzentren.pdf>

The DATA CENTER GROUP editorial team conducted the interview with Ralph Hintemann on 24.02.2022.



Dr. Ralph Hintemann
Senior Researcher, Borderstep Institute
for Innovation and Sustainability

ME NEED MORE TRANSPARENCY FOR A FAIR COMPETITION



Photo: © Fantasyform/stock.adobe.com

■ The DC MAG editorial office interviewed Marina Köhn, research associate at the German Federal Environmental Agency (UBA), about the future of the label "Blue Angel" and she pledges for more transparency on the market and fair competition. Dr. Dieter Thiel, Senior Consultant at DATA CENTER GROUP (DCG) – who has been working for many years as an expert for energy efficiency and sustainability – is also a member in the expert group "Blue Angel" of the UBA. In the interview with DC MAG Marina Köhn and Dr. Dieter Thiel discuss about current developments and the future data center market.

Mrs. Köhn, at first, we would like to ask you about the status quo: Could you please give us some introducing facts about the "Blue Angel" for data centers? How would you describe the development and how do you estimate these tendencies?

M. Köhn: The "Blue Angel" for energy-efficient data center operation (DE-UZ 161) has already existed since 2011, while the "Blue Angel" for colocation data centers (DE-UZ 214) has only existed since 2020. The "Blue Angel" describes the demands on the data center design to make it energy-efficient, resource-saving and thus environmentally friendly. At present, the label is available for the two variations as explained above. This status is about to change soon. We are currently working on the further development and the fusion of both labels for energy-efficient data center operation and climate-friendly colocation data centers.

As the demands on IT infrastructures are constantly changing, we are constantly adjusting the "Blue Angel" criteria. Therefore, we are always in touch with our auditors – such as Mr. Thiel – to sharpen demands and criteria. We are currently planning to publish the modified version of the "Blue Angel" at the beginning of 2023. Our goal is to stipulate new certification regulations in spring 2023 on this basis.

At present, how many certifications according to the "Blue Angel" for energy-efficient data center operation are approximately available? What trend can you observe in the market?

M. Köhn: Actually, there are not that many certifications, but the demand is constantly increasing and I get more and more inquiries about the "Blue Angel". The label is gaining more and more attention as all topics that we have been dealing with for many years have top relevance in the sector. Sustainability and energy efficiency are only two of numerous issues that influence our work. And in this context, the "Blue Angel" is an extremely reliable measuring instrument.

We also have an eye on the market's dynamic development and the regulations are being adjusted in consultation with our experts. For this purpose, we will present and discuss the changes in workshops together with the auditors. One of the final steps is the revision of the award documents including the application documents. The revision of the regulations takes place in close exchange with data center operators, planners and customers. We are working to increase the acceptance within the sector in order to achieve the dissemination as well as the impact of the eco-label and we are on a good way. However, there is considerable need for optimization: More innovative measures and new ideas are required to stop the current energy waste.

Of course, there is always the question about the sense of a certification as it costs time and money. On the other hand, an investment in sustainability pays off for data center operators as every certification starts with consulting according to the criteria catalogue and can reveal potentials for energy saving. The costs can thus be amortized, and the investment pays off in the long term. We offer free consultation to award even more data centers with the "Blue Angel".

D. Thiel: We offer comprehensive consultation and assistance with promotions. According to the coalition agreement, the "Blue Angel" is an evaluation criterion for climate-neutral data centers that will be mandatory from 2027. Data center operators have the possibility to apply for promotion for consultation from a certified auditor on energy optimization and certification with the "Blue Angel" eco-label. For DCG I am an accredited auditor. We auditors support our clients with the application, carry out the consulting service that gets which is subsidized by the Federal Environment Agency and an additional bonus is even paid out if the application for the "Blue Angel" is positively checked. At DCG, the topics sustainability and efficiency are part of our daily work in projects of all

sizes. Our clients receive target-oriented consultation that points out potential savings. At the same time, we keep an eye on profitability. On the one hand, the goal is of course to consequently realize these requirements in our projects. In parallel, we always must take current developments into consideration. Due to the synergies of the five business units of the DATA CENTER GROUP over the whole value creation chain we are in a very good position and realize efficient and future-proof solutions for our clients.

What future changes and adjustments are being planned? Where are the priorities here?

M. Köhn: We currently waste a lot of energy, and this circumstance urgently must be changed. One big issue is the reduction of energy consumption and of we focus of course on all concepts as e. g. waste heat usage. Unfortunately, we still see a big discrepancy as these topics are often used for headlines and on the other hand they are not strictly realized in the market. A well-founded basis must be created here on which targeted discussions can take place. Politicians, associations, data center operators and the entire industry are required to do so.

Promotion program

...for data center consulting services for energy optimization and certification with the environmental label "Blue Angel".

- Who can make an application: data center operators
- Promotion period: The application can still be made until 31.12.2023
- Provider of promotional funds: Federal Environment Agency
- Further information and additional details around the eco-label "Blue Angel" can be found on the following website: www.blauer-engel.de
- Our expert Dr. Dieter Thiel is happy to advise you. Please contact us via e-mail: info@datacenter-group.com

Photos: private



Dr. Dieter Thiel
Senior Consultant
DATA CENTER GROUP



Marina Köhn
Research Associate
Federal Environment Agency

LEVERAGING THE POTENTIAL OF THE AFRICAN MARKET

Future market Africa



Jörgen Venot
Head of
Product Sales

■ RZproducts, DATA CENTER GROUP's product business unit, is continuously expanding its track record in Africa through strong partner business. Taking into account the different developments and local conditions within this huge continent is challenging.



DC-IT Container und DC-IT Room offer comprehensive protection against external influences such as heat, fire, explosion, dust, water or theft.

One continent, many challenges, great opportunities

The African continent has been in a constant state of change not only since yesterday. And the pace of development is still increasing. However, the speed of change varies considerably among the continent's 54 countries. In addition, there are different political situations and heterogeneous markets, some of which are developing exponentially. Responding to these and being prepared for them requires great agility. And the course is set for growth:

The extreme increase in population is both a challenge and an opportunity. By 2050, the population will almost double from today's 2.3 billion inhabitants¹. This will increase the purchasing power of the quite young population and, at the same time, innovations as well as technological developments. This brings many new company formations, investors and start-ups onto the

scene and gives rise to new industries or tech hubs. In many African countries, digital transformation is advancing at a rapid pace: mobile payments, insurances and loans using blockchain, digital health solutions and other innovations are on the rise.

A track record on a growth path

The project history of RZproducts reflects this development: four years ago, RZproducts succeeded in receiving the first major order in the financial sector. Several room-in-room projects were implemented for a bank in Mozambique – and all are ECB•S certified (certification of the highest security level on the market). Shortly after, another large room-in-room projects followed in Egypt – also for a bank. With our strategic partner "Sterling & Wilson", who acted as general contractor (GC), we equipped an IT security room for Faisal Bank (also ECB•S and EN-1047 certified) with our solutions².

The next room-in-room project was not long in coming – this time for a Morocco-based government organization. And in 2022, we are also implementing an IT security room of the highest quality and security level for another financial institution in Egypt. Data centers in the form of multi container solutions are also popular: We successfully won another project for a financial institution in West Africa: A DC-IT Container, which is ready for immediate use as a plug-and-play solution, provides the institution's new data center. The customer was particularly convinced by the DC-MonIToring tool feature enabling remote control of certain functions. Thus, the container can be placed in a logistically optimal and secure place and does not depend on the staff's location. Additionally, the monitoring tool provides the analysis, monitoring, evaluation, and partial control of the IT infrastructure. For further protection, the IT container is also equipped with redundant components and is therefore declared a high availability data center and Tier 3 compliant.

Individual answers to special requirements

The project history shows: Overall, the strategy paid off. Together with our local partners, who act as general contractors, we are positioning ourselves as a successful solution provider with our IT security products. In these often price-driven markets, we do not respond with discounts, but with better warranty performance. Under these circumstances it is essential to ensure the solution's function over the long term, sustainability, and the correspondingly high quality.

In addition to the warranty, we have also adapted our solutions to the African market's challenging conditions. One example is the special coating we use for containers installed in coastal regions. The proximity to salt water requires special corrosion protection. Painting in accordance with DIN EN ISO 12944-C4 protects against the increased salt load. We are also noticing an increased demand for the highest protection classes, especially for decentralized locations to which we offer an appropriate response, for example with ECB•S certification as well as RC3 and higher for room-in-room systems.

Together with our local partners, we are perfectly positioned for the future African market. We benefit and learn from the broad experience in the different markets and at the same time offer the appropriate solutions adapted to the clients' individual requirements. We are already working on the next projects and look forward to everything that is yet to come. Stay tuned!

'More and more Governments, Banks, Utility companies or IT and telecom operators (5G) are placing their critical IT under the protection of our highly certified ECB•S room-in-room solutions. Many industrial companies already rely on our DC-IT Safes to protect their core IT in a critical production environment. With this type of solutions and with our containerized data center solutions for a distributed data center compute power, we are looking forward to supporting the needs of an ever more demanding African market', says Jörgen Venot, Head of Product Sales, DATA CENTER GROUP.

¹ Source: UN World Population Prospects 2019; Berechnungen/statistical computation: BiB

² Read more about this project here: <https://bit.ly/36SrVxP>



Photo: © Jack-Krieger/unsplash

COOPERATION FOR TECHNICAL DC PRODUCTS AND INNOVATIVE CONCEPTS

Shaping the future together:
LESCOM and RZproducts combine their know-how

■ As one of the leading suppliers of electrical and safety technology in Switzerland, Lescom AG stands for high competence and innovation. For more than 40 years its experts have been planning and implementing innovative and individual solutions in the fields of electrical engineering, security technology and data center infrastructure solutions from consulting and conception to realization.

Thanks to the strong partnership with RZproducts (product business unit of DATA CENTER GROUP), the product portfolio in the data center area and our products DC-IT Safe, DC-IT Container and DC-IT Room was extended. All these solutions have one thing in common: They create a highly-secure all-round protection against physical influences for the IT. And that fits in perfectly with the portfolio of Lescom's security division that offers further IT security solutions.

For its customers, it implements alarm systems, access controls and video surveillance tailored to all requirements, ensuring maximum security in the data center. This ensures that only authorized persons have access to the infrastructures. In the event of a crime, the recordings and controls can help clarify the facts.

Services of Lescom AG from a single source:

- Mechanical work
- Power engineering work
- Safety engineering work
- Service of the plants



All LESCOM solutions have one thing in common: they create all-round protection for IT.



LESCOM AG, based in Switzerland, stands for high competence and innovative solutions.

LESCOM AG

From the individual system to the complete package

With this service portfolio, Lescom AG offers the possibility to provide individual complete solutions. The scope of services includes consulting, the preparation of electrical diagrams, the construction of the plant and the guarantee of safety on site.

Thus, an optimal customer-specific overall solution is created. The systems protect data reliably and efficiently throughout Switzerland in the pharmaceutical, insurance and administration industry.

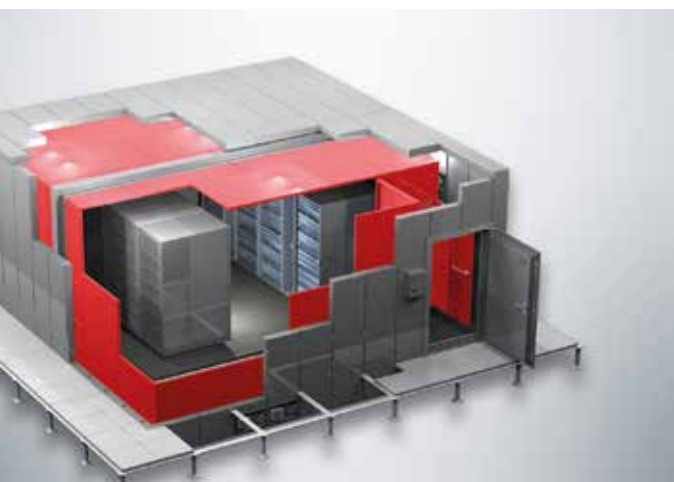
More information: www.lescom.ch



LESCOM experts offer customized customer solutions from individual systems to complete packages.

PROTECTIVE SHIELDING FOR UNLIMITED DATA SECURITY

The latest generation of IT room shielding solution: RZproducts' DC-IT Shielding solution offers maximum protection for all sensitive and critical data centers



Comprehensive protection for sensitive data

With the latest generation of its "Data Center Shielding" (DCS), the Products Business Unit of the German DATA CENTER GROUP (DCG), RZproducts, offers a tested, proven and precisely tailored IT room shielding solution for data centers. This solution has been specially designed to protect against natural influences and EMP attacks (Electro Magnetic Pulse). The high-frequency enclosure protects critical IT rooms and IT equipment from electrical and/or magnetic interference from the outside and the radiation of information from the inside – literally a Faraday cage for data centers.

The right solution for your IT protection

Shielding provides targeted defense against EMP threats for complete rooms and IT equipment. Data Center Shielding is offered in different variants: The shielding security can have a choice of 60, 80 and 100 dB. RZproducts guarantees shielding attenuation up to 40 GHz. Customers can choose from the Data Center Shielding portfolio according to their requirements and intended use. The entry-level model DCS 60 forms the basic protection. DCS 80 with high availability protection and DCS 100 with maximum availability protection are the choice for sensitive facilities with the highest security need.

Today, the protection of sensitive data and critical IT infrastructures no longer concerns only large corporations or cross-industry institutions such as telecommunications and finance, but also governments and the defense sector. Increasingly, the SME's (Small and Mid-Size Enterprises) are also threatened by the issue. It is becoming clear that electronic espionage and data theft is becoming an ever-greater threat to the IT infrastructure and core business of companies and institutions worldwide. The resulting damage is immense. According to the Federation of German Industries (BDI), around 88 % of these companies and institutions were affected by data theft, industrial espionage or sabotage in 2020 and 2021¹. An alarming figure that clearly shows the importance of protecting digital infrastructure and the priority it should have for public institutions and private companies.



By doing so, DCS is precisely adapted to the individual customer needs and offers the right room shielding solution for every security room, SCIF (Sensitive Compartmented Information Facility) room and IT infrastructure that requires this level of protection. It offers perfect protection against potential espionage attacks and electronic attacks as well as natural electronic spikes (e. g. lightning).

Modular design for unlimited flexibility

The construction of the Data Center Shielding consists of specially designed steel sheet parts with a thickness of two millimeters. The modular design was also a key factor in the development process. This helps with customization on site and enables the shielding solution to be precisely tailored to the customer's needs, regardless of the spatial conditions.

The electromagnetic shielding is equally suitable for the use in IT security rooms, outdoor containers and for the safeguarding of complete buildings. The advantages of the solution are obvious: It offers increased intrusion protection combined with security products of the DC-IT Room solutions. The solution is scalable under certain circumstances and ensures investment security through de- and reassembly. The modular design of the shielding solutions ensures optimal coverage of the high technical specifications.

Increased intrusion protection for maximum security


"Our Data Center Shielding solutions can be combined with the proven benefits of the ECB•S room-in-room solutions of RZproducts, in order to provide the greatest possible protection to critical IT rooms against potential threats such as espionage, fire, or intrusion", emphasizes Jörgen Venot (Head of Product Sales).


The DC-IT Shielding products meet the specifications of Tempest (Tempest: American standard for protection against compromising radiation of EDP equipment; EDP: electronic data processing) and/or Van Eck Phreaking (technique for electromagnetic espionage in which unattended electromagnetic radiation is received).


This means that data centers, IT, server and meeting rooms, as well as SCIF rooms, are additionally protected against electromagnetic espionage and offer the highest level of eavesdropping security. This is also ensured by the access locks and patented shielding doors and gates as well as shielding windows.


¹ <https://bdi.eu/>


Technical information

 Shielding attenuation values (guaranteed) up to 40 GHz

 Modular construction with 2-mm-thick galvanized sheet steel modules

 Individual panel dimensions: max. 1,500-mm-width and 50-mm-depth

 System tested according to EN 50147-1, NSA 65-6, IEEE-STD 299 (MIL-STD 285)

 Compliance with Tempest, NSA 65-2, Nato standards

WE GET OUT THE MAXIMUM



Stefan Leyener, project manager for MSR and GLT technology.

■ In this short interview with the editorial team of DC MAG, Stefan Leyener, project manager for MSR and GLT technology at DATA CENTER GROUP, reveals an insight into his work field. This includes the measurement, control and regulation of cooling and ventilation systems.

DC MAG: What is the focus of your work and what is part of your portfolio?

Stefan Leyener: As a project manager for MSR (measuring, control and regulation systems) and GLT (building control systems) technology, I am responsible for regulating and monitoring all electrical plant components. Within the scope of the projects, I coordinate the members of the team and distribute responsibilities. Based on my many years of experience and with the support of the team, we adjust the respective parameters (e. g. energy, monitoring, control) in such a way that the most efficient result is achieved for our customers. We get out the maximum. Project manager Nicolas Treu and MSR technician Luca Spies are part of my team.

DC MAG: What is the workflow like? What are the main activity areas?

Stefan Leyener: We work along the entire value chain and support all DCG business units with our know-how. All trades interlock with us. Together with the experts from the other units, we create sustainable and thus future-proof solutions.

DC MAG: Can you please give a brief insight into the current projects? How have the requirements developed in recent years?

Stefan Leyener: The projects have significantly developed in recent years. We are always working on even larger data center projects. Our knowledge helps us to specifically draw on experience. Thanks to our know-how in the interaction of the various trades, we know exactly what to support in the certification process in the event of inquiries. We support our colleagues in the planning process and work together to find the most efficient solution so that our customers waste as little energy as possible. The team is familiar with all standards and regulations. We constantly educate ourselves to be up to date and to not miss any development in the industry. Building automation is in our hands.

As future topics in the data center sector, I definitely see the further development of the technologies and the incorporation of these innovations into our daily work. For example, we are planning, among other things, the use of increasingly efficient chillers and refrigerants. Efficient systems - whether in the infrastructure or in the IT itself - will prevail in the long term. Why? - Because energy will become increasingly expensive in the future. Also, the procurement of materials and the scarcity of energy are becoming increasingly dominant issues.

VIRTUAL KICK-OFF 2022 WITH VALUABLE IMPULSES

The DATA CENTER GROUP team starts motivated into the new business year

Due to the corona pandemic, also this year's DATA CENTER GROUP kick off took place digitally. In addition to input contributions from the management combined with a review and an outlook on the coming business year, the agenda also included the presentation of the marketing department by team leader Sonja Philipp. Jürgen Venot (Head of Product Sales) and Martin Hüscher (Technical Director) also presented innovations of the business unit RZproducts.

"We have mastered the corona situation very well, were able to recruit new employees and continue to provide professional training. I am very proud of the fact that new team members have also integrated so well despite the difficult induction period - some of them via home office. That is a mature achievement, especially when you are new to the company", Kim Blecker (Head of Human Resources and Legal) emphasized by way of introduction. The DCG management is proud of its team. "We have mastered many things, are extremely successful on the market despite many challenges and are constantly growing", emphasized CEO Ralf Siefen and also referred to the trusting cooperation with MVV Enamic. "We offer the entire value chain - from consulting and planning to professional construction to implementation and professional operation and service of the data center - and that is unique in the market", the

CEO motivated his team. His presentation also highlighted the topics of sustainability, product innovations, project successes and growth opportunities. The presentation by Dr. Joachim Hofmann (managing director, MVV Enamic), focused in particular on sustainability potentials and developments. Together with Benjamin Blau (Team Lead Business Development & Marketing, MVV Enamic), he presented the MVV decarbonization and solution house strategy. Both again underlined the enormous synergy potentials of the partnership.

The kick-off also saw the presentation of the new management line-up: Donald Badoux (CSO) and Dr. Ferdinand Höfer (CFO) will strengthen the DCG management in the future and will lead the company's fortunes together with Ralf Siefen (CEO). Thus, DCG is optimally positioned for the future requirements of the data center market. Mr. Badoux presented on trend topics in the field of digitalization during the virtual company event and especially highlighted the overarching topic of sustainability. The importance of this topic is constantly growing and DCG can convince here with concepts for increasing energy efficiency, CO² compensation and emission reduction.

Conclusion: The DATA CENTER GROUP team is well prepared for the future!



Photo: © REDPIXEL / stock.adobe.com

ANNIVERSARIES

Congratulations

10-year company anniversary 2022

- Jens Tilinski
- Alexandra Schmidt
- Achim Schäfer
- Tim Klein
- Klaus Wisser

The DATA CENTER GROUP team says thank you for the great commitment and wishes continued success!

IMPRINT

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WELCOME TO THE TEAM

We continue to expand our expertise and welcome the following new colleagues.

Since January 2022

Vitali Magel Service Technician
Petra Knisse Team Assistant
Berlin branch

Since February 2022

Tom Luca Spies MSR Technician

Since March 2022

Sonja Kristen Financial Accountant
Donald Badoux Managing Director Sales
Dr. Ferdinand Höfer Managing Director Finance

Since May 2022

Khodr Dahoud Project Manager TGA
Frankfurt
Thomas Klein Project Manager TGA
Frankfurt
Steffan Leuschner Consultant/
Key Account Manager
Rhine/Main
Angela Rabbich Project Purchaser
Commercial
Laura Sophie Hofmann Technical Assistant
Human Resources
Administrator
Thomas Kliewer

Since July 2022

Maximilian Groß Commercial
Technical Assistant



IN (SILENT) MEMORY

of Bernhard Wagner

On 17.03.2022 the sad news reached us of the sudden death of our employee and colleague Bernhard Wagner.

We mourn with his relatives and will always honor his memory.



Follow us on LinkedIn and receive all the latest news from DATA CENTER GROUP and the RZproducts:

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