

Specialist Optimises Warehouse Logistics with Edge Data Centre EMW Steel Service Centre Optimises Processes with Micro Data Centre Solution from SCHÄFER IT-Systems' Edge Data Centre Programme

Neunkirchen, 20th February 2024. In logistics, it is necessary to process data quickly and securely in real-time. Supply chain efficiency, precise inventory management, and continuous transportation optimisation are crucial to success. Edge Data Centres play an important role by enabling data processing directly on-site, instead of sending all information unprocessed to central data centres. The new EMW storage location in Siegen-Weidenau spans 23,000 square metres with a capacity of 100,000 tonnes of cold-rolled steel sheet. The complex logistics processes are inconceivable without information technology. For this purpose, two independently operating compact data centres were custom-planned, installed, and commissioned by SCHÄFER IT-Systems. The redundancy counteracts supply chain disruptions during maintenance work and cyber attacks.

Companies can make quick decisions based on current data, leading to improved responsiveness and efficiency by utilising Edge Computing in logistics. This is particularly important in real-time scenarios, such as tracking goods, monitoring inventory levels, and optimising routes for deliveries.

Therefore, at EMW, decentralised data processing for the large storage facility in Siegen-Weidenau was equipped with two individually tailored IS-1 cabinets from the iQdata portfolio of SCHÄFER IT-Systems. The fully pre-configured solution has a connection capacity of 10 kW per cabinet. Each cabinet contains all the components of a compact data centre, including access control. Up to 30 free rack units (RU) are available for the installation of IT modules.

The system platform combines security, ergonomics, interior fittings, and air conditioning in a design known for its reliability in harsh environments, such as warehouses and machine halls. EMW opted for the protection class IP 54 (dust and splash water protection). Moreover, the installed chiller unit is mounted on vibration-damping supports to absorb shocks, which are inevitable when loading coils weighing up to 30 tonnes. Additionally, the compact data centres were placed on brightly coloured transport and collision protection pallets, so the IT is

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also protected against impacts from misdirected vehicles. This way, damage can be limited to the collision protection, avoiding outages and costly repairs.

The servers and other electronic loads are connected to the IT Rack PDU (Power Distribution Unit), which handles power distribution within the Edge Computing system. Disturbances in the power network do not affect IT operations, as an uninterruptible power supply (UPS) is installed. Continuous monitoring of the differential current allows for early detection of faults. An alarm sound and a signal light provide audible and visible warnings. This supports both the safety and availability of the Edge Computing system.

Additionally, a fire early detection system with integrated suppression enhances safety and reliably protects components from overheating and fire. Critical events are captured and reported by the system's monitoring. A web interface visually presents the notifications from individual system components and environmental values.

For the waste heat, an active high-performance cooling unit, the iQdata IS-1 SlotIn-Cooler, is responsible, which is located between the 19-inch level and the rack's outer side wall. The power converted into thermal energy is transferred to the cooling medium water – eliminating the need for harmful refrigerants. Furthermore, a newly developed micro heat exchanger improves the energy efficiency of IT cooling.

"We have constructed a large warehouse in Siegen-Weidenau with state-of-the-art technology. This includes heavy-duty crane systems, four handling areas, and a well-thought-out loading concept. Between the warehouse and our production facility located 25 kilometres away at the main site in Pfannenberg, several thousand tonnes of coils need to be transported daily. The delivery must occur just-in-time. The strictly timed process sequence is crucial for our success. In terms of IT infrastructure, we rely on the expertise of SCHÄFER IT-Systems," says Holger Latsch, Managing Director of EMW Steel Service GmbH.

The compact micro data centres from the Edge Data Centre Programme by SCHÄFER IT-Systems were delivered fully installed and tested. Comprehensive training supported the quick and easy deployment of the customised solution. For maximum availability, additional services are available. This facilitates cost planning and enables the economical operation of the Edge systems.

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Edge Computing-Configurator from SCHÄFER IT-Systems: [Click Edge-Konfigurator](#)
Informationen on iQdata from SCHÄFER IT-Systems at: [Click iQdata RZ-Lösungen](#)

Images and captions:

1. Image: Weidenau_Bild-1_(c)_Schaefer-Werke-GmbH.png

Caption: Two compact data centres with ram protection sockets based on iQdata IS-1 server cabinets from the Edge Computing portfolio of SCHÄFER-IT Systems.

2. Image: Weidenau_Bild-2_(c)_Schaefer-Werke-GmbH.png

Caption: Warehouse with heavy-duty crane system and rail connection at the large storage facility of EMW Steel Service Centre in Siegen-Weidenau.

About SCHÄFER IT-Systems (www.schaefer-it-systems.com | [Click SIS](#)):

SCHÄFER IT-Systems, an innovative manufacturer of made-to-measure network and server cabinet and data centre solutions for both conventional and complex applications, is part of the internationally successful company SCHÄFER WERKE.

The family-run SCHÄFER WERKE Group, headquartered in Neunkirchen in the Siegerland region, operates globally with diversified business units: EMW Stahl-Service-Center, Perforated Metal, Container Systems and Industrial Containers, Infrastructure for Data Centres, and Office and Workshop Equipment. These divisions work on the common basis of high-quality steel sheet, the processing of which is one of the company's traditional core competences.

Distributor: SCHÄFER IT-Systems, Thomas Wermke, Industriestr. 41, 57518 Betzdorf, Germany,
Tel.: +49 2741 283-781, E-mail: twermke@schaefer-it-systems.de

Contact person: SCHÄFER Werke GmbH & Co. KG, Burkhard Rarbach, Pfannenbergstr. 1, 57290 Neunkirchen, Germany,
T: +49 2735 787-547, E-mail: brarbach@schaefer-werke.de

Press: KONTAKT PR · Agentur Schmalbrock, Alte Reichsstr. 5, 86356 Neusäß, Germany,
T: +49 152 0771 0402, E-mail: presse@kontaktpr.net