



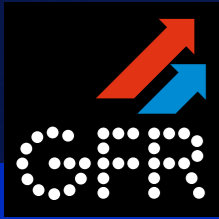
DIGICONTROL | DIGIVISION
create comfort. control energy.



The digital transformation with GFR

Comfortable & sustainable buildings by means of digitalised technologies in the cloud.

www.gfr.de



GFR - Gesellschaft für Regelungstechnik und Energieeinsparung mbH

Welcome to GFR

GFR mbH was founded in Verl in 1978 and is today one of the leading suppliers of the building automation branch with its reputable trademarks DIGICONTROL® and DICIVISION®.

Comprehensive building automation solutions from a single source

Our portfolio is geared towards investors, project developers, architects, specialist planners, builders and operators of modern real estate and includes all products, services and software for implementing innovative building automation solutions throughout the entire building life cycle:

Portfolio for the implementation of consistently digitized building automation solutions:

- Project development
- Planning and project engineering
- Programming of automation systems
- Building and commissioning
- Building automation management and energy data management
- Monitoring, analytics and optimisation
- 24/7 service

You will find our solutions in all sectors.

Whether office buildings, multifunctional arenas, shopping malls, production facilities, hotels, clinics or distributed properties, we are involved in all building categories.

p. 26-27





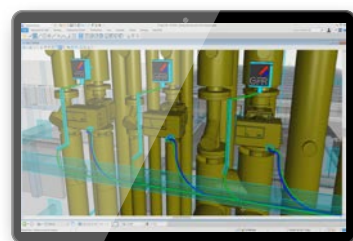
Project 360°

The digital transformation is getting a face

... and a name with Project 360°.

Project 360° refers to an extremely smart process that is unique in its scope of functions and that enables the continuous digital implementation of sustainable building automation systems. It is a process that digitalises, automates and optimises value creation at the highest level within all phases of the building life cycle. The results are sustainable, migration-capable buildings, smart buildings that also meet the increasing demands of tomorrow.

Project development



BIM

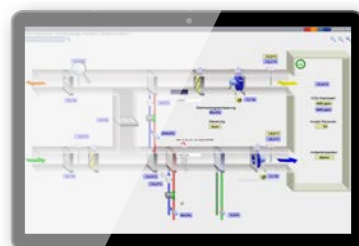
Application: **MicroStation**
Product data in accordance with VDI 3805
Integration of GFR products
Planning of cables and carrier systems

Operation DIGIVISION



DIGIVISION Smart Building Cloud

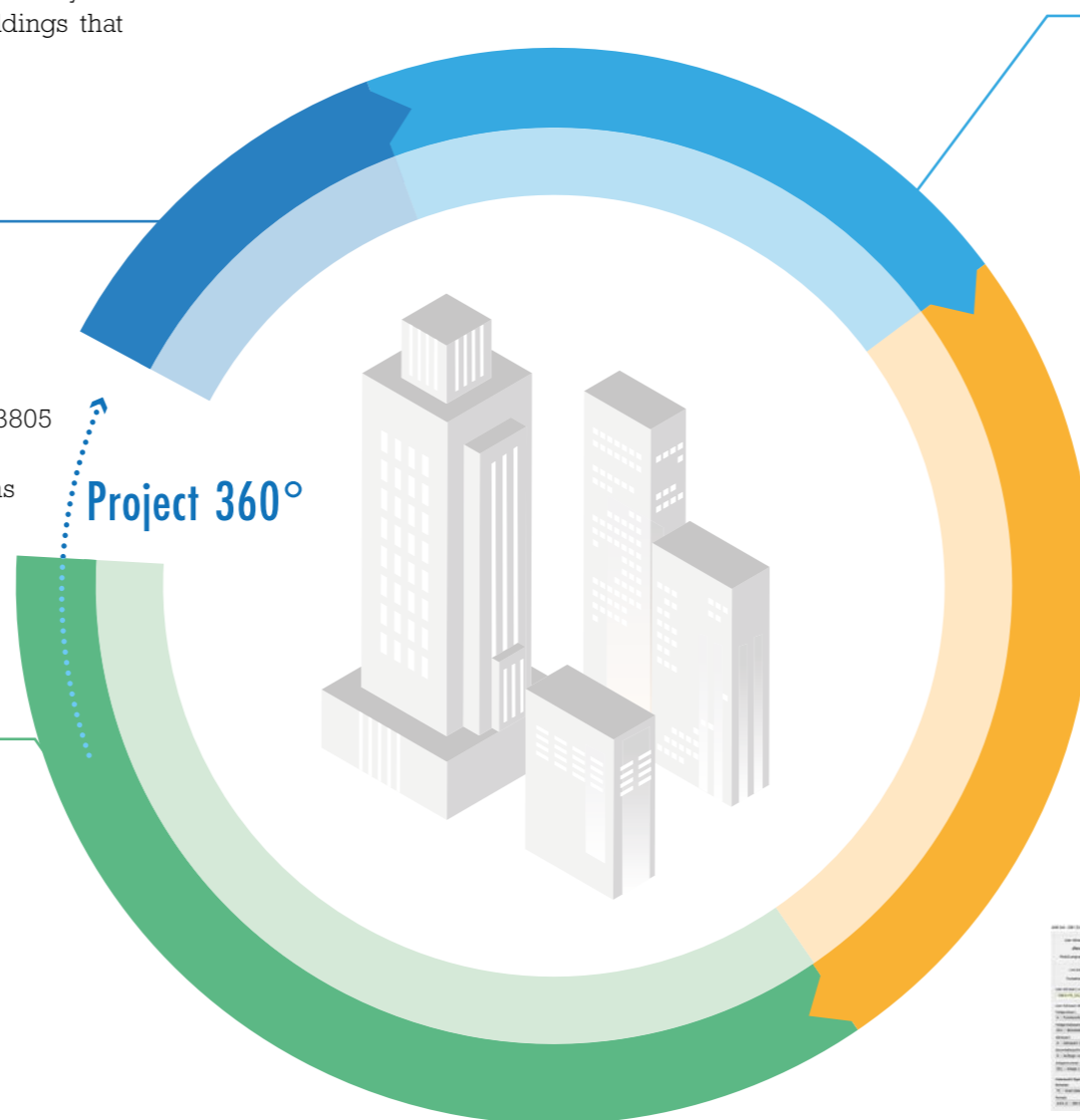
Smart Building Cloud Services
Online Document Service (ODS)
SaaS - Apps (Software as a Service)
IoT-Cloud-Services



WEBVISION 5

Building automation management
Monitoring (VDI 6041)
Analytics

Energy data management **WEBENCON**



Project 360°



Project 360°

Project 360° in the building life cycle

The figure illustrates all applications contained in the process in the phase of the building life cycle in which you implement the digitalised process.

Planning

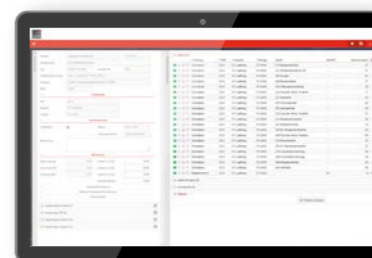
Ready for BIM



WEBPROJECT

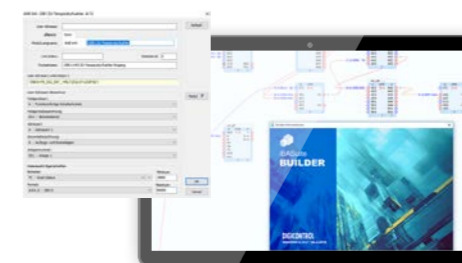
Project development and planning
Tender
Execution planning
Implementation of standards
Documentation

DIGICONTROL Implementation



Project management & Digital Construction File
comprise the following in the process project 360°:

Commissioning management (VDI 6039)
Trade coordination
Scheduling and Capacity Planning
Site measuring
Scrutineering
Project-related product data and documents



iBASuite

intelligent Building Automation Suite
Parameterisation and programming of the
Edge- und IoT controllers
Graphical webserver
BACnet browser
Generator for creation of documentation



Edge and IoT Controller DIGICONTROL ems5

Edge and IoT Controller
Smart Building Controller
BACnet B-BC
Protocol Rev. 1.15
AMEV profile AS-B 2017



ROOM4D

Integrated Room automati-
on solutions
Room controllers
Touch panels
Sensors, actuators



"Ready whenever you are"

We are impressively pioneering future-oriented solutions with Project 360° in order to transfer the classic world of building automation into the digital world of a Smart Building. As of today, our customers already benefit from consistently digitalised processes for the implementation of sustainable automation systems:

Owners and Investors

- Long-term attractiveness of the building
- Safeguarding value enhancement
- Maximum flexibility
- Great satisfaction of users and tenants
- Excellent image in the real estate market

Project developers and planners

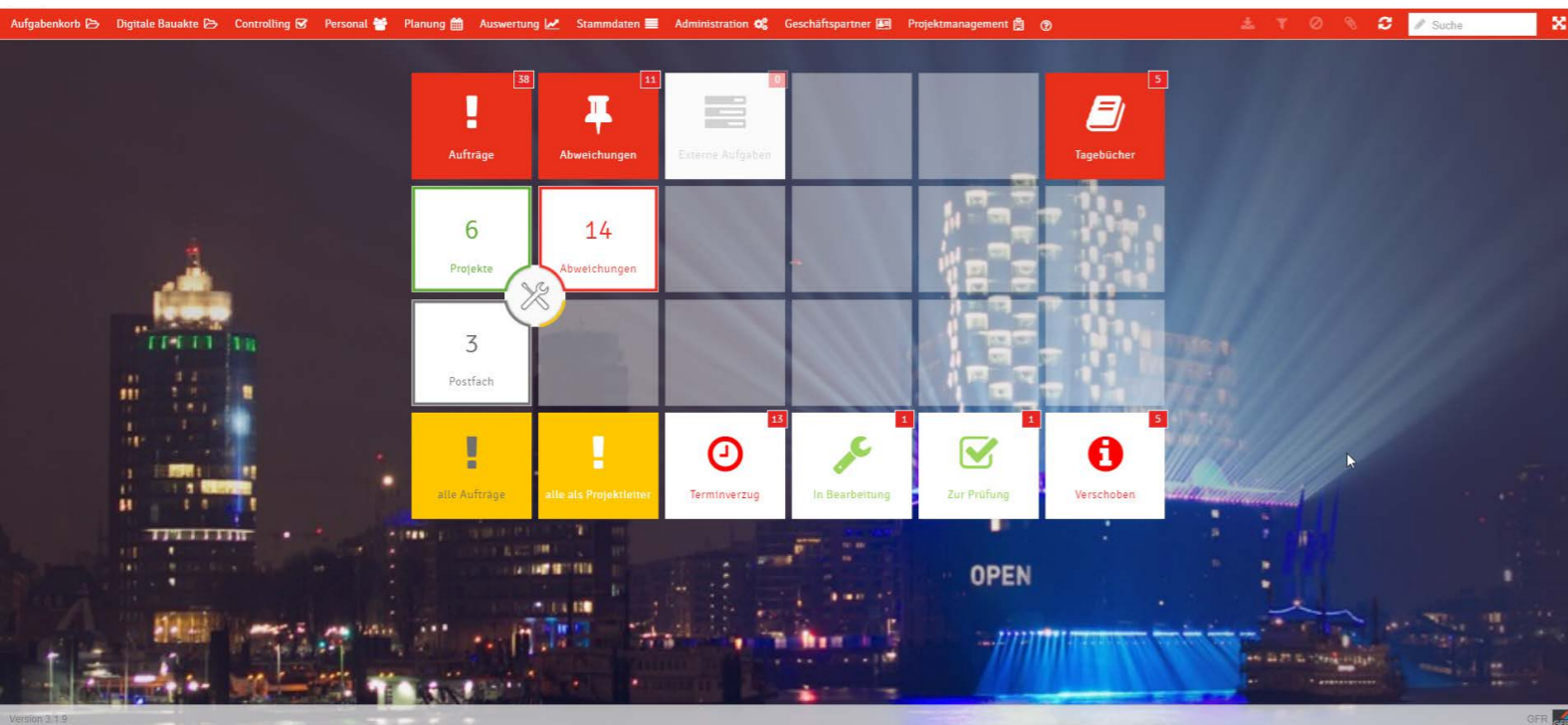
- High planning security
- Cost transparency
- Time and cost savings
- Collision check and simulation (savings of 10%)

Builders

- Automatic generation of the entire execution planning incl. CAD control cabinet engineering

Operators

- Consistent and logical documentation
- Simplified, optimised building operation
- Savings on ongoing operating costs



Planning with BIM becomes standard

BIM provides our customers with a clear plus in sustainability, because universally digitalised systems based on BIM models and Project 360° remain migration-capable for tomorrow's Cloud and IoT services until the end of their life cycle.

The holistic planning of building automation systems with Building Information Modeling (BIM) is currently not possible, since various building automation components and their product data according to VDI 3805 cannot be implemented into the building model yet.

The definition of the missing product data and integration into the standard is in progress and is expected to be completed in 2020. The planning of the building automation with Building Information Modeling will prevail in the near future.

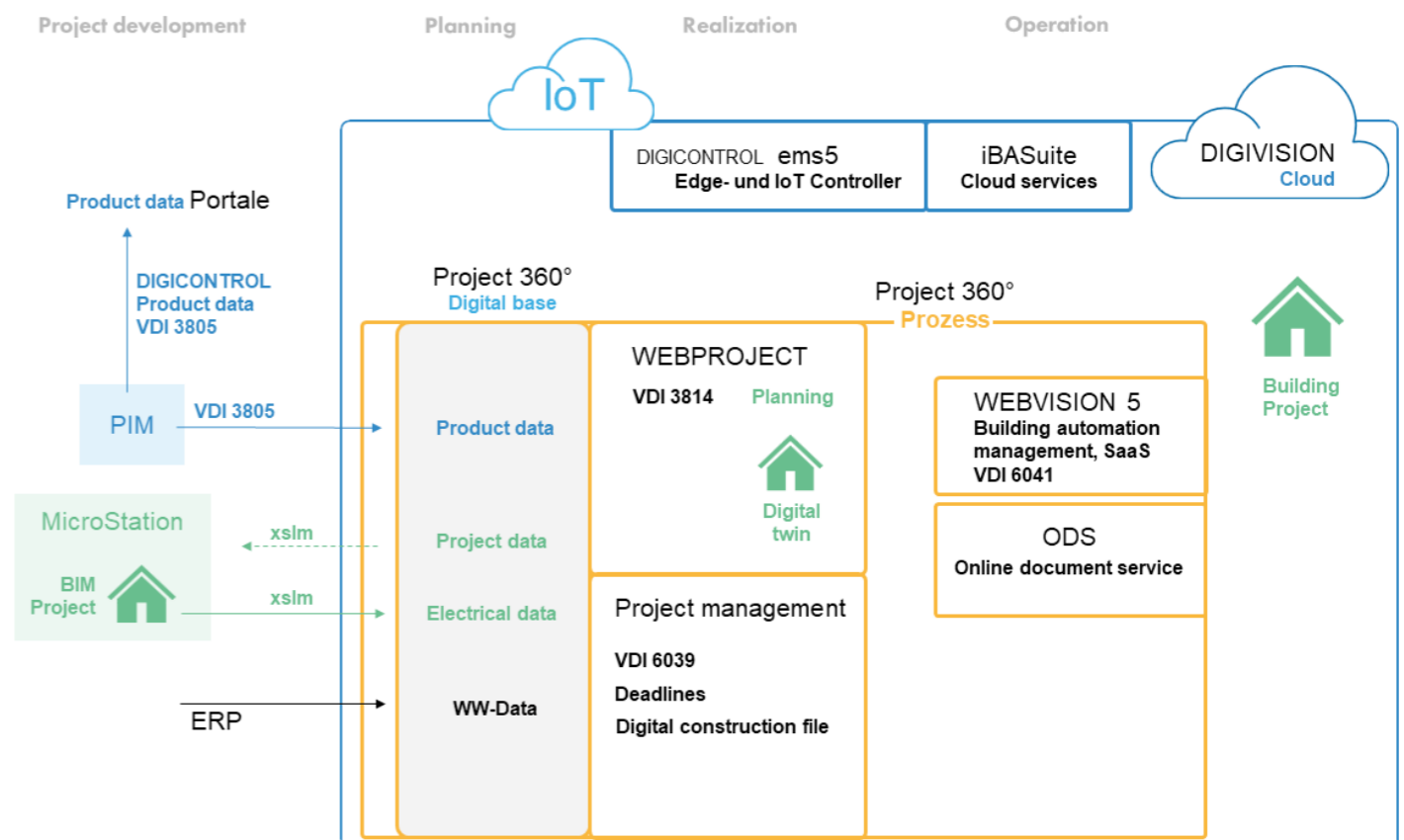
We are already communicating the product data that is already available in the standard with the BIM applications and well-known portals in the BIM-compliant VDI 3805 format.

The integration of the missing product data will take place after notification without any problems.

We have been planning and calculating our cables and carrier systems with the BIM software MicroStation by Bentley for many years.

Added value through BIM

- Planning errors are detected in good time
- Reliable budget planning
- Enhanced safety on construction sites
- On-schedule implementation
- High quality standards
- Low and calculable operating costs
- Virtual inspection and modification in the planning phase
- BIM unifies all stakeholders on one platform



Digital twins in building automation

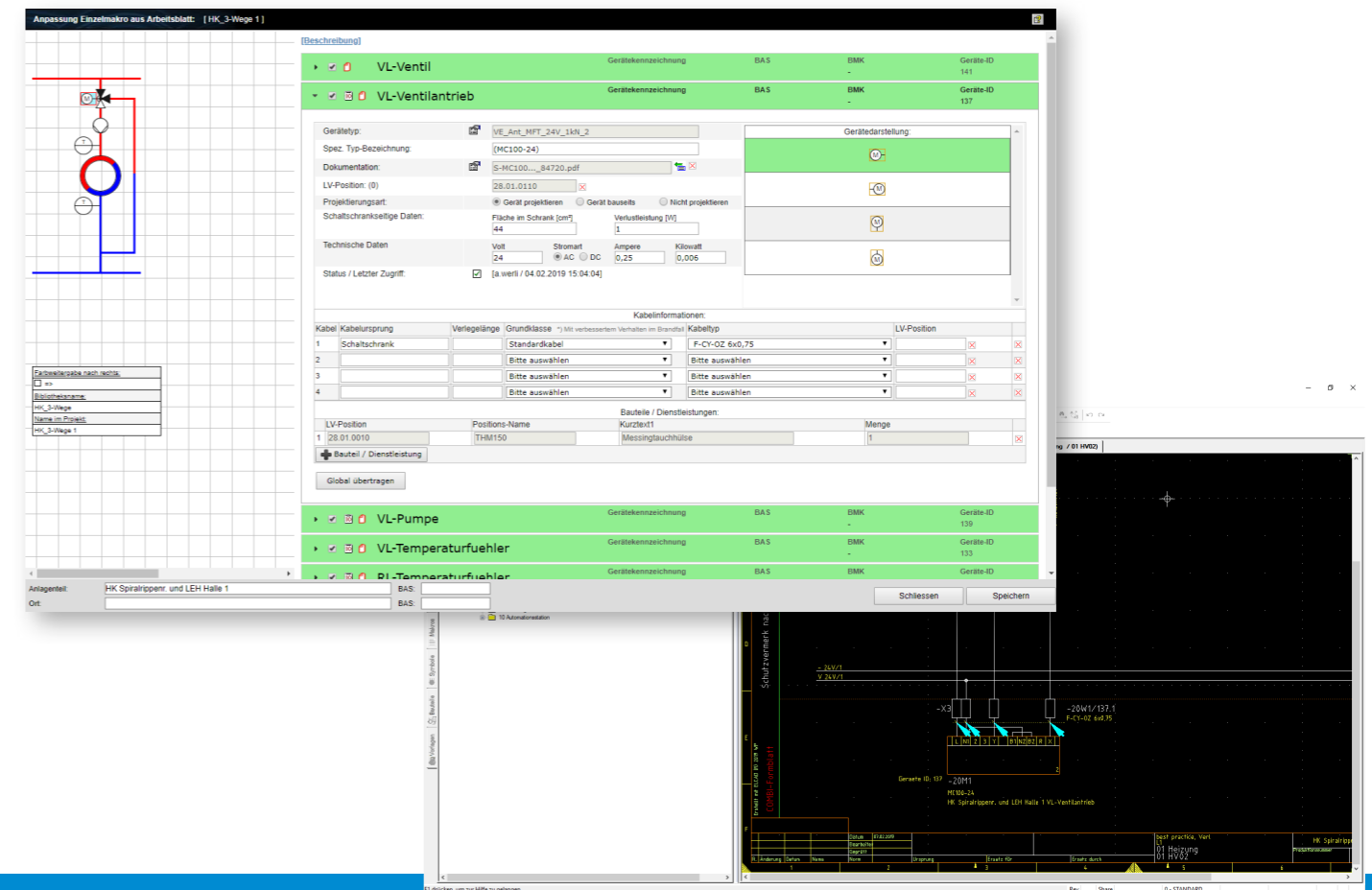
WEBPROJECT is an extremely efficient software for the planning and project engineering of complete building automation systems. WEBPROJECT is available online as a cloud service on the WEB or within your local network.

Being integrated in Project 360°, WEBPROJECT enables the creation of a “digital twin” of the building automation system, which contains all technical details, calculations and commercial data as well as a schedule and capacity planning.

All necessary planning and project engineering documents are created automatically on the basis of the automation schemes.

- Automation schemes with data point numbering and data point documentation
- GAEB export for the preparation of tender specifications and offers
- Automation schemes

- Building automation function lists in accordance with DIN VDI 3814 or DIN EN ISO 16484
- Functional descriptions
- Control cabinet calculation
- Calculation of valve size
- Lists of valves, motors and cables
- Cable type management and cable destination tags
- Cable measurement
- Data interface for the automatic generation of circuit diagrams in E-CAD systems
- Modification of neutral and function-based planning to any brands according to project execution requirements



Project 360° - Digital Construction File Project management

100% online, transparent, real time

The integrated project management, the Digital Construction File and the Scheduling and Capacity Planning are some of the highlights of Project 360°. The project management generates and communicates all steps that have to be carried out for the setup and commissioning of each set of controllers. The Scheduling and Capacity Planning calculates the necessary time specifications and coordinates the intermediate and final deadline. The Digital Construction File documents everything online, holistically and digitally.

A further highlight is currently in progress: the personalised online login. It provides selected stakeholders with an insight into selected modules of the project management, the Digital Construction File and the Scheduling and Capacity Planning.

Additional benefits:

- Maximum transparency through constant insight into the process chain
- Open communication and documentation of the provided services
- Real-time cost management
- Early detection of construction disturbances through detailed Scheduling and Capacity Planning
- Commissioning management, VDI 6039
- Digital Construction File, construction documentation and construction diary
- Daily updated execution statuses
- Gantt diagram of work orders
- Final invoice

Warenkorb	Warenkorb	Warenkorb	Warenkorb	Warenkorb
28.01.0001	28.01.0002	28.01.0003	28.01.0004	28.01.0005
28.01.0006	28.01.0007	28.01.0008	28.01.0009	28.01.0010
28.01.0011	28.01.0012	28.01.0013	28.01.0014	28.01.0015
28.01.0016	28.01.0017	28.01.0018	28.01.0019	28.01.0020
28.01.0021	28.01.0022	28.01.0023	28.01.0024	28.01.0025
28.01.0026	28.01.0027	28.01.0028	28.01.0029	28.01.0030
28.01.0031	28.01.0032	28.01.0033	28.01.0034	28.01.0035
28.01.0036	28.01.0037	28.01.0038	28.01.0039	28.01.0040
28.01.0041	28.01.0042	28.01.0043	28.01.0044	28.01.0045
28.01.0046	28.01.0047	28.01.0048	28.01.0049	28.01.0050
28.01.0051	28.01.0052	28.01.0053	28.01.0054	28.01.0055
28.01.0056	28.01.0057	28.01.0058	28.01.0059	28.01.0060
28.01.0061	28.01.0062	28.01.0063	28.01.0064	28.01.0065
28.01.0066	28.01.0067	28.01.0068	28.01.0069	28.01.0070
28.01.0071	28.01.0072	28.01.0073	28.01.0074	28.01.0075
28.01.0076	28.01.0077	28.01.0078	28.01.0079	28.01.0080
28.01.0081	28.01.0082	28.01.0083	28.01.0084	28.01.0085
28.01.0086	28.01.0087	28.01.0088	28.01.0089	28.01.0090
28.01.0091	28.01.0092	28.01.0093	28.01.0094	28.01.0095
28.01.0096	28.01.0097	28.01.0098	28.01.0099	28.01.0100



DIGICONTROL ems5

The Edge and IoT Controller by GFR

The future is here today

The new Edge and IoT Controller DIGICONTROL ems5 integrates IoT services into DIGICONTROL building automation systems (GAS). This is the basis for the implementation of new Smart Building concepts in the course of the digital revolution.

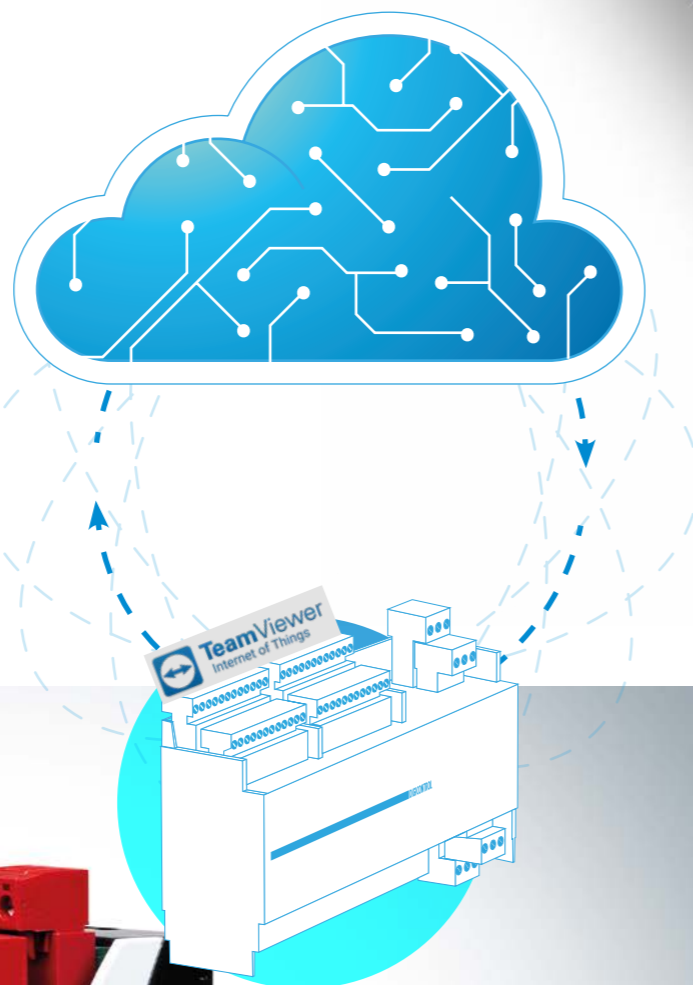


GFR and TeamViewer IoT are collaborating to ensure the secure communication of IT systems.

Better safe than sorry

Monitor your buildings reliably via real-time remote control, communicate end-to-end encrypted and with the TSA public/private key procedure. Enter the world of secure hyperconnectivity for IoT.

TeamViewer has already been installed on more than 1.8 billion devices.



DIGICONTROL ems5
Edge and IoT Controller
BACnet B-BC,
Protocol Rev. 1.15,
AMEV profile AS-B 2017



iBSuite - intelligent Building Automation Suite

The tool for implementing the new generation of automation systems

iBSuite - intelligent Building Automation Suite

The iBSuite comprises the applications for the efficient configuration of the Edge- and IoT-Controller DIGICONTROL ems5:

- the iBSuite.Builder for the configuration and programming of the controller
- the graphical web server
- the BACnet browser
- the document generator

iBSuite cloud - No hassle with applications, project software or data

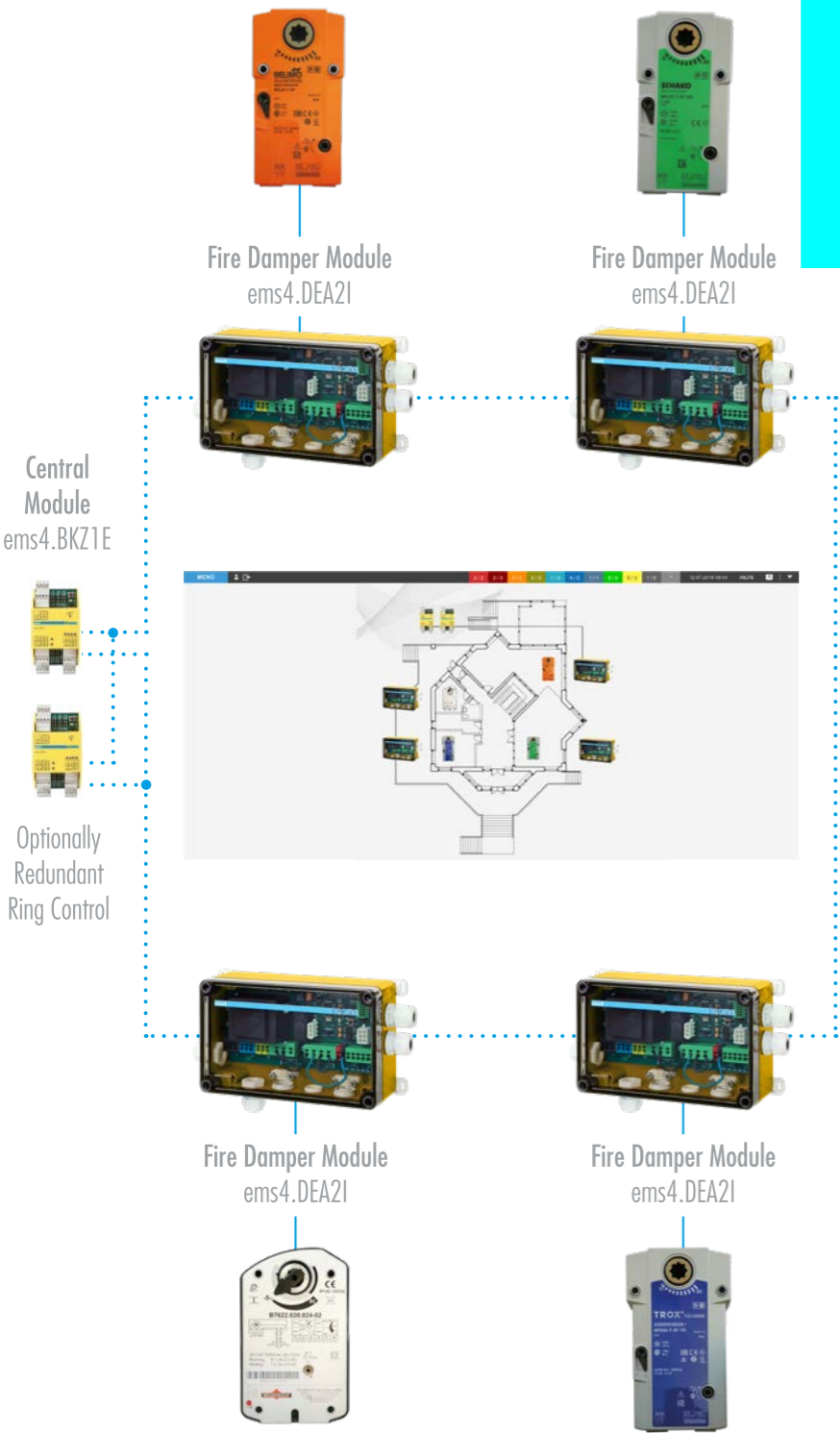
DIGICONTROL partners and users will soon be able to conveniently use the DIGICONTROL Smart Building Cloud for automation station software and data. The iBSuite Cloud is currently being created. It consists of:

- the current and archived statuses of the plant software for all sets of controllers
- the historical data of the plants
- the live data of the plants
- the online license service
- the applications of the iBSuite

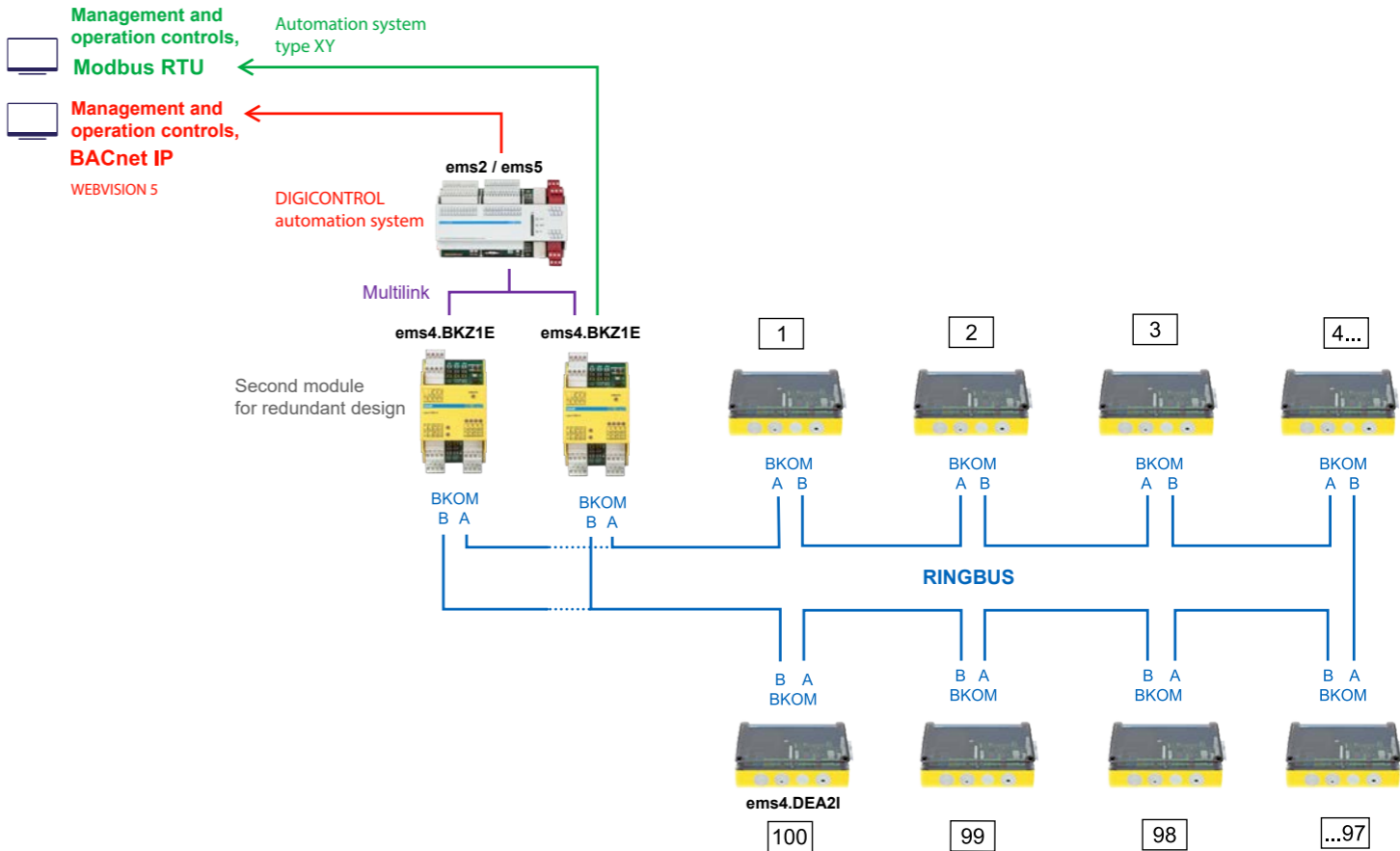


The new fire damper communication system
with safety ring bus and Modbus interface

BKOM



The BKOM system is designed for safe monitoring and control as well as for automatic test runs of fire dampers (BSK) with motorised actuators. It consists of a central module ems4.BKZ1E (in redundant design comprising two central modules), which communicates via a safety ring bus with up to 100 fire damper modules ems4.DEA2I, which can each connect a fire damper.



Added value

High system availability due to BKOM ring bus topology

If a device or a connection is malfunctioning, the fire damper system continues to operate thanks to the ring bus topology. Furthermore, the used CAN technology guarantees fast responses and excellent performance. A redundant design of the central module (optional) provides even more safety.

Fast analysis and diagnosis of faults

The central module uses the ring bus topology to detect and locate defective fire damper motors and interrupted or short-circuited bus connections. It provides the operator with a detailed fault description including the location of the fault source in case of a fault.

Cost-efficient

Due to the communication of the fire damper via a data bus, fewer electrical cables and a smaller cross-section are required. The simple commissioning also saves time and costs.

Simple, semi-automated and time-saving commissioning

The addressing of the fire damper modules and the optimisation of the data transfer are automated. The commissioning of the ring bus system is supported by diagnostic tools.

Integration in BACnet networks and automation station types with Modbus

The BKOM system enables the secure and trouble-free integration into BACnet networks. The Modbus interface, which is integrated in the central module, enables the BKOM system to be used as an independent unit within all automation systems, which are equipped with a Modbus interface.

In this way, the BKOM system can also be used for applications other than DIGICONTROL systems.



WEBVISION 5

Your building management platform

About 80% of total costs arising within the life cycle of a building account for its operation.

The share of all buildings in the world-wide primary energy consumption is at 40% per year. Thus, there is a huge potential to contribute to the economy and responsible use of resources by effectively operating buildings.

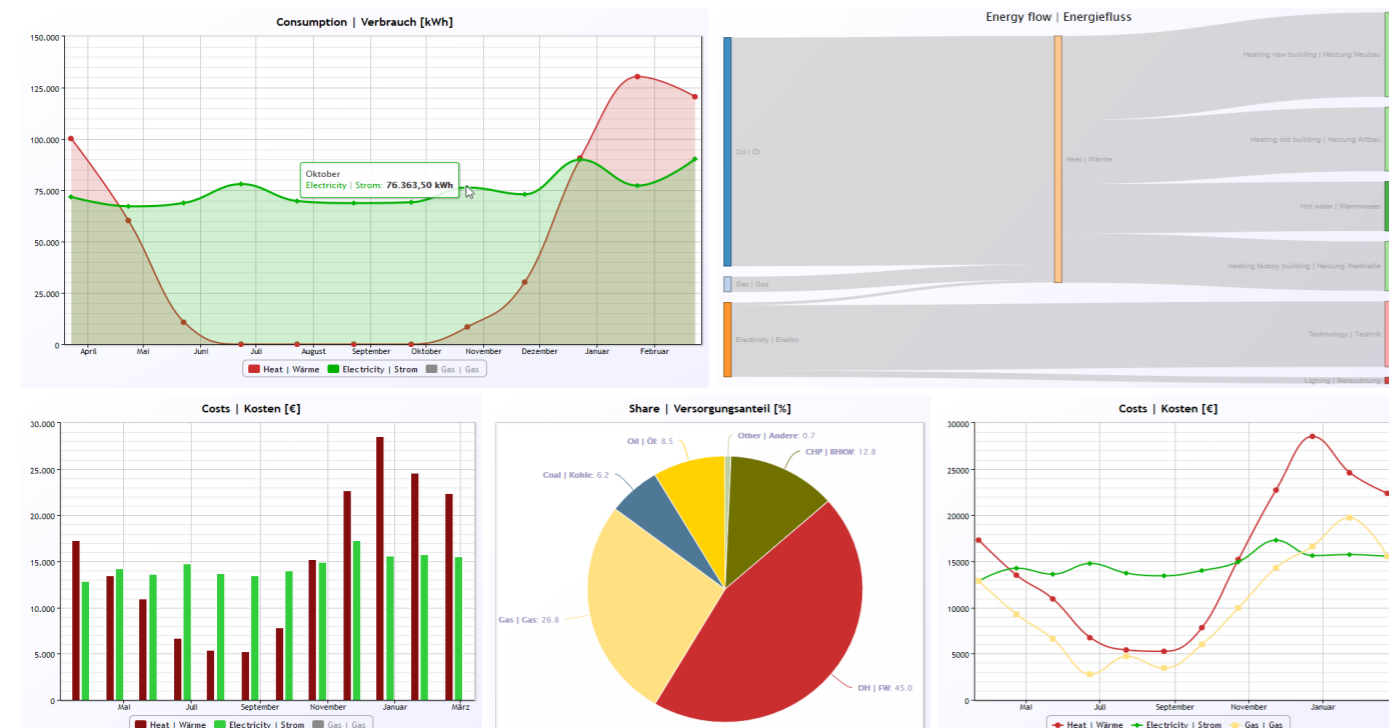
We face these challenges with WEBVISION 5, which ensures the efficient monitoring and operation of buildings and distributed properties.

Open interfaces enable the integration of all building trades like alarm systems, fire detection systems, ERP systems, office systems, facility management, hotel management, entertainment systems and industrial automation.

Intuitive operation

WEBVISION 5 offers state-of-the-art handling by providing optimum comfort and intuitive operation from the system overview down to the data point. This builds trust, operating the system is a pleasure and users are not afraid of utilising the software.

Dashboard



Customised individual solutions

WEBVISION 5 enables personalized user interfaces whose contents and functions are determined by the user's role, responsibility and personal preference.

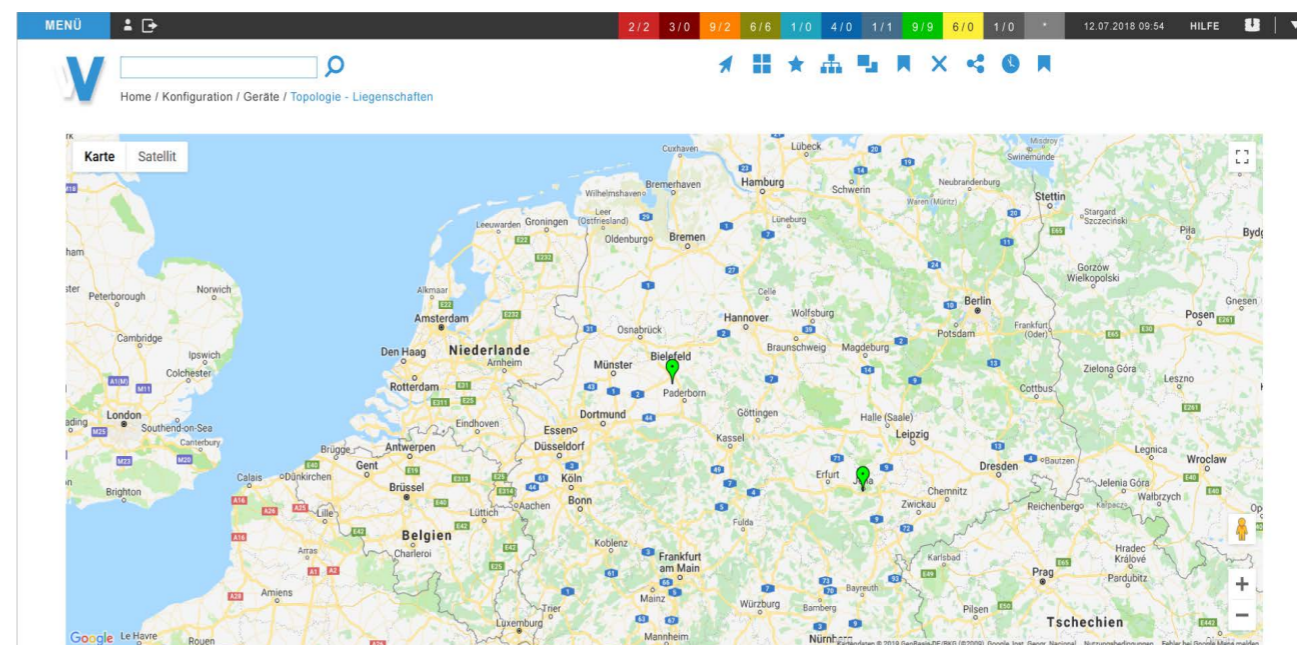


GFR and TeamViewer IoT are collaborating to ensure the secure communication of IT systems.

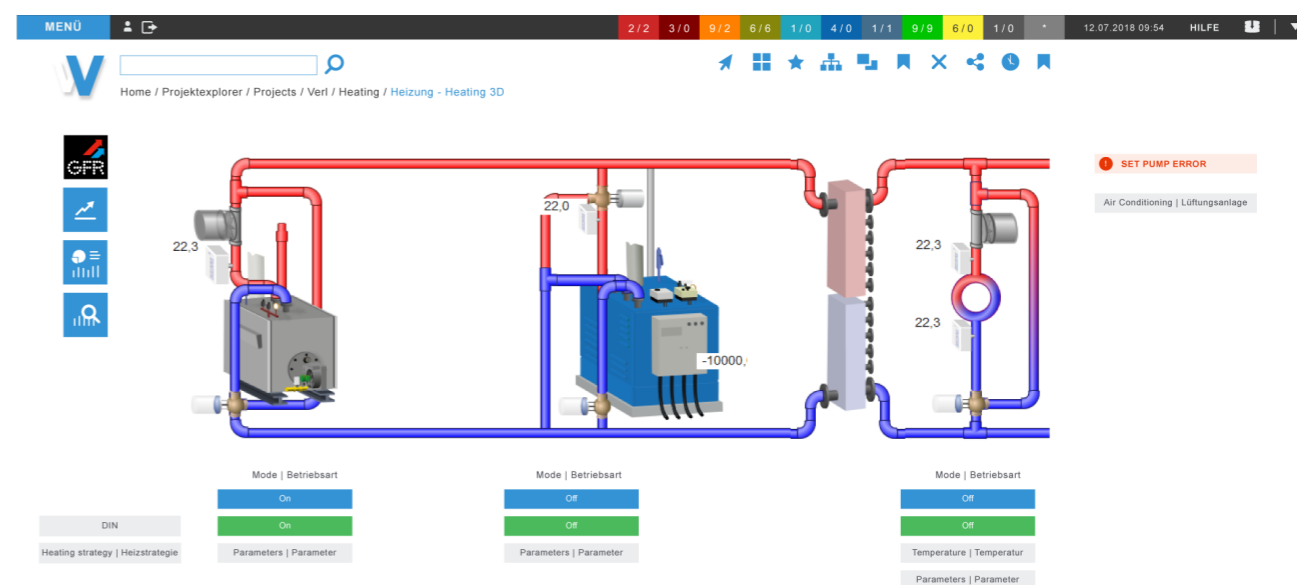
Better safe than sorry

Monitor your buildings reliably via real-time remote control, communicate end-to-end encrypted and with the TSA public/private key procedure.

Property management

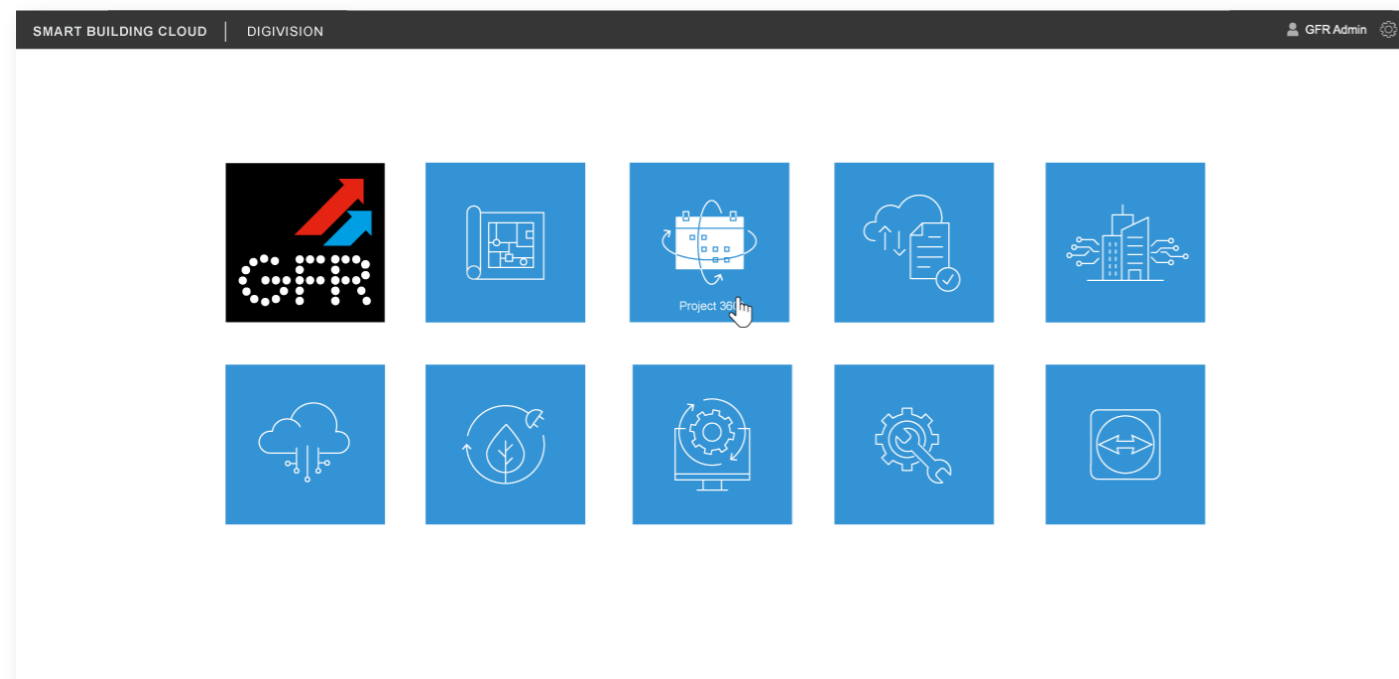


3D - visualized plant schematic



Notification management

Typ	Nachrichtentext	Ereigniszustand	Zeitstempel	Benutzer	Liegenschaft	Anlage	Objektname	Priorität	Häufigkeit	Links
ISP	0	Gestört	28.01.2019 07:30:46					150	206	
RM Zu-DEA2		Gestört (Aktiv)	24.01.2019 16:58:18				A-001-A00117A01A-0009	230	28	
BSK Lautzeit/Schalterfehler-DEA2		Gestört (Aktiv)	24.01.2019 16:58:18				A-001-A00122A01A-0009	70	27	
RM Auf-DEA2		Gestört (Aktiv)	24.01.2019 16:58:18				A-001-A00118A01A-0009	230	28	
BKRM-Ring bereit-BK21E		Gestört	24.01.2019 16:58:03				A-001-A00043A01A-0009	230	42	
ems2 BACnet Controller CP04X Trendlogtest		Gestört	10.01.2019 13:37:16		Arthur		ems2 BACnet project_Trendlogtest	150	181	
Temperatur Kanal 1		Oberer Grenzwert (99.9°C)	09.01.2019 11:07:35		Arthur		GFRJenaB107-20G-00051	70	29810	
Temperatur Kanal 1		Störung (100.4°C)	09.01.2019 11:06:30		Arthur		GFRJenaB107-20G-00051	70	29810	
SO-RA-1H		Gestört	18.09.2018 11:06:04		H7	SO-RA-1H	SO-RA-1H_SO-RA-1H_		1	



There is no doubt that Cloud and IoT-in-the-Cloud technologies will change the world, including the world of building automation. This is beneficial for all stakeholders, as breathtaking products and services are already emerging in the course of digital transformation. We will redefine efficiency, convenience and profitability within the next decade.

The DIGIVISION Smart Building Cloud is our basis for the creation of the new generation of building automation systems and comprises:

- the IoT Cloud, communication of the IoT devices with Edge and IoT controllers (DIGICONTROL ems5)
- Project 360° and WEBPROJECT
- ODS - Online Document Service
- the iBASuite cloud
- SaaS - Software as a Service
- We take advantage of the integration of BIM data into the flexible digital basis of Project 360° to provide an end-to-end digitalised and standardised process. GFR has thus positioned itself at the front line of technology and is prepared for the future. We and our partners and customers as well as owners and investors, architects and project developers, specialist planners, builders, operators and tenants benefit from this.

IT security and data security

Security, encryption and locality constitute the backbone of the DIGIVISION product family as components of the Smart Building Cloud. Client access is secured against unauthorised access by third parties via SSL/TLS certificates. Properties are connected in a certificate-oriented manner via RSA keys. 100% of your data are hosted on servers in Germany.



GFR and TeamViewer IoT are collaborating to ensure the secure communication of IT systems.

Better safe than sorry

Monitor your buildings reliably via real-time remote control, communicate end-to-end encrypted and with the TSA public/private key procedure.



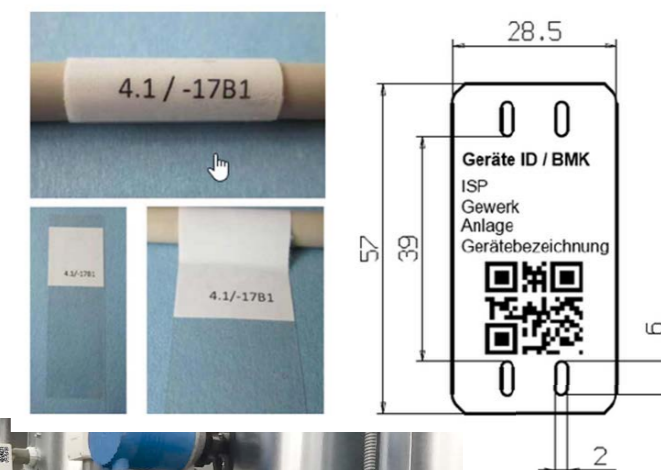
Best comfort for facility managers and operators

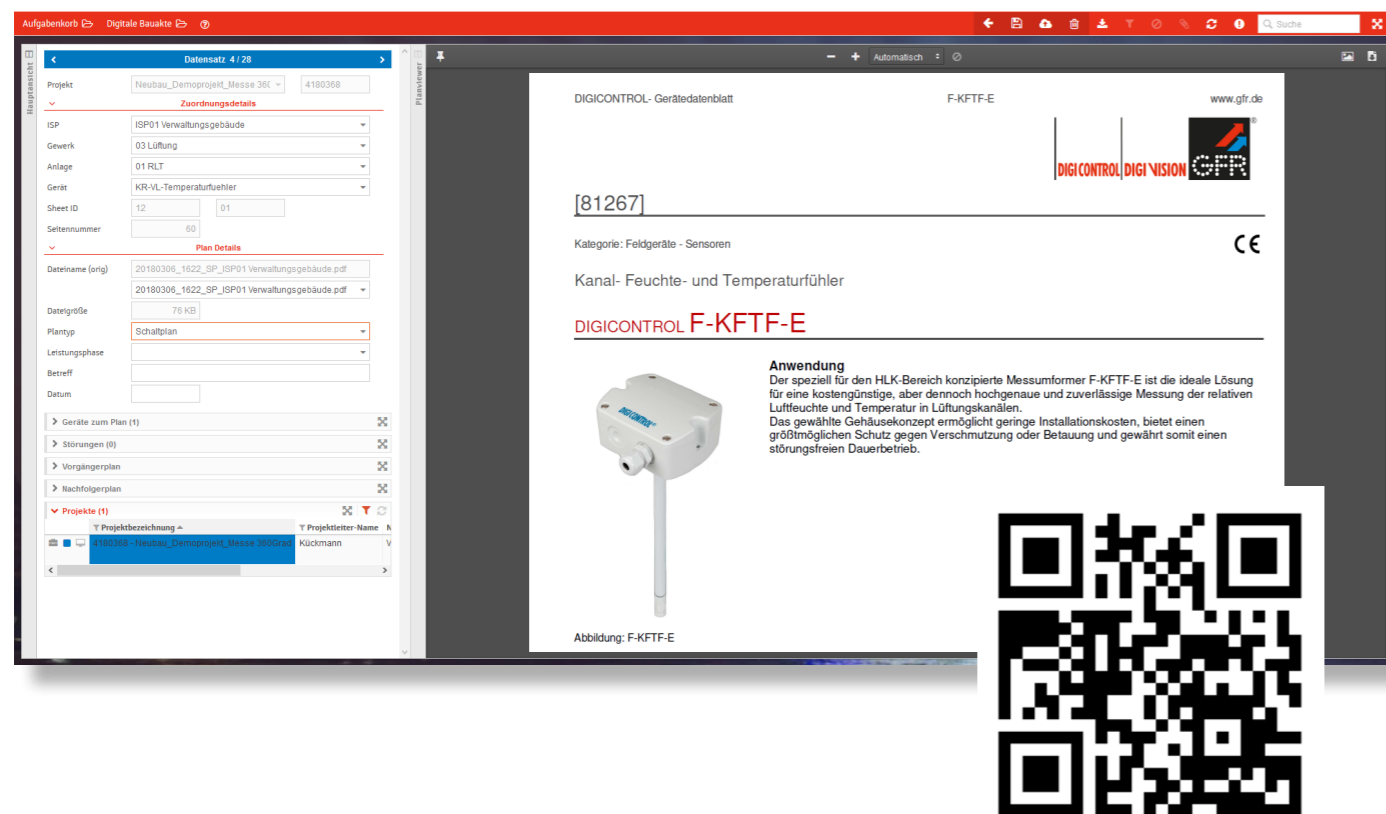
Building automation is known to consist of many hundreds or even thousands of components such as sensors, actuators, fittings, motors, fire dampers, smoke extraction dampers, etc. The search for documents and files and their maintenance is therefore very time-consuming..

The Online Document Service breaks new ground and offers lively, sustainable documentation with effective keyword search, and above all the best convenience for facility managers and operators:

- The device symbols within the user interfaces (WEBVISION 5) link directly to the corresponding documentation. It could not be any easier than that.
- All devices are equipped with QR codes on site, which also link to the relevant documentation.
- Devices for which maintenance intervals or statutory maintenance regulations must be followed are managed accordingly.
- The documentation is multilingual and includes data sheets, manuals, functional descriptions, plans, drawings, circuit diagrams, certificates, special papers, etc.

- The user interface provides device-specific order services, hotlines, addresses, points of contact and telephone numbers.
- The document maintenance is digitalised, menu-driven and can be completed quickly.
- Own notes and documents can be categorised and stored if required. The ODS is furnished with an audit-proof filing system for this purpose.





Enhanced comfort for operators and service providers

The Asset Manager is an optional extension of the Online Document Services (ODS) and serves the implementation of „Predictive Maintenance“ in the Technical Building Services.

The Asset Manager can be smoothly integrated into the ODS interfaces and includes convenient tools for organising and implementing the maintenance.

Advantages and added value of predictive maintenance and the integrated Asset Manager:

- The sustainability of the building is improved significantly as the service life of the systems is prolonged. Thus, the investment costs will be considerably lower in the long run.
- Value retention through care, maintenance and repair
- Improved resource planning
- Reliable compliance with maintenance intervals and

statutory regulations

- Digitalised documents and protocols for maintenance according to AMEV as well as AMEV work cards
- Utilisation of future IoT services in the field of maintenance.

Planned innovations

• The Asset navigator

The integration of indoor navigation systems into the Asset Navigator improves the comfort for service personnel, optimises the service process and reduces maintenance costs.

- The devices are identified on site during maintenance by means of the QR code of the ODS.

Augmented Reality (AR)

The integration of AR into the ODS / Asset Manager would substitute the QR code on the device. Field device designations could be eliminated and the identification of the devices would be 100% digitalised.



AR - Augmented Reality

(augmented reality) means enriching the real world with virtual content, such as texts, graphics, videos. The user perceives virtual elements in his real environment.



VR - Virtual Reality

(virtual reality) means to immerse fully into a world and to experience virtual 360 degrees of it, to look at all sides and to move within it.



Ideas & concepts for enhancing existing processes with AR

The applications of Augmented Reality and Virtual Reality are available in an amazing quantity and variety. They are used in almost all sectors of industry.

The AR and VR applications can also be used in a variety of ways within building automation and technical building services. Our ideas and concepts are ready to be implemented.

We are designers of modern automation systems and thus create and use innovative technologies that contribute to added value.

We have created an AR application for a better understanding of the AR and VR technologies, which we will present at the fair.



GFR at ISH 2019. Augmented Reality projects real values into a fire damper module.

Utilisation of solar radiation



The DIGICONTROL Lumenizer contains the physical data of the solar radiation on the facades of selected buildings. The cloud service communicates the data to the Edge and IoT Controller DIGICONTROL ems5. The detailed information provided by the service enables the implementation of creative ideas for optimising the

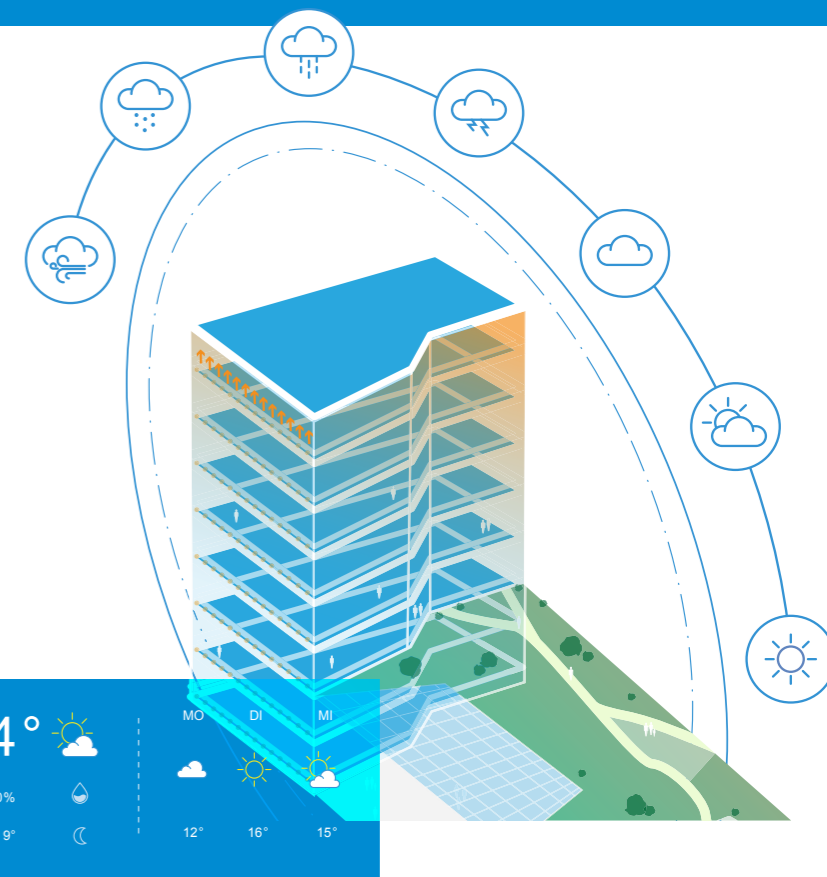
building operation:

- Reduction of operating costs for heating and cooling
- Enhanced comfort by optimising the proportion of daylight and automatic shading

Weather forecast

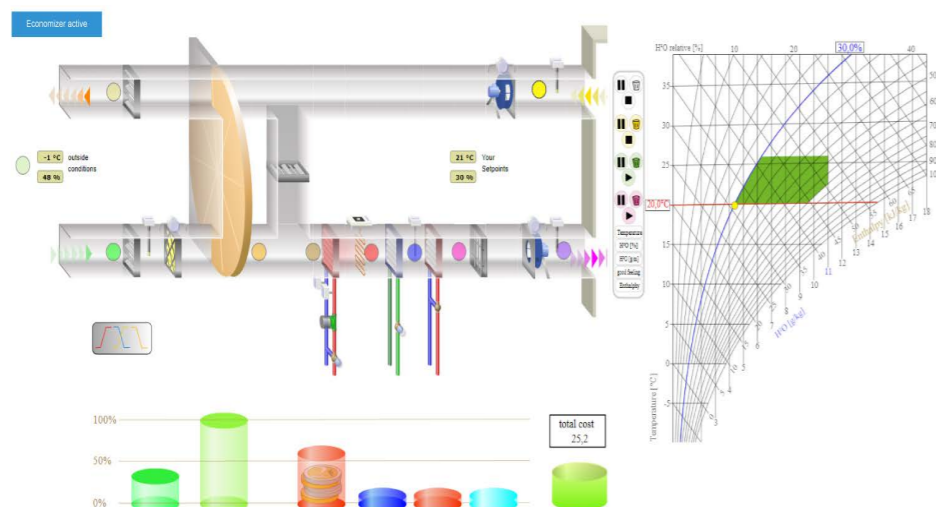
The DIGICONTROL Meteomizer contains current weather data as well as weather forecast data, which are communicated via cloud service to the DIGICONTROL automation systems. The data can be used in many ways:

- Enhancing comfort by maintaining the appropriate indoor temperatures even during weather changes.
- Reduction of energy costs through optimised activation and deactivation of heating circuits.
- Reducing energy costs through optimum control parameters and setpoints within the control circuits and optimised use of energy generators.
- Elimination of sensors and weather stations



Optimisation of energy efficiency in air conditioning systems

Cloud service in progress



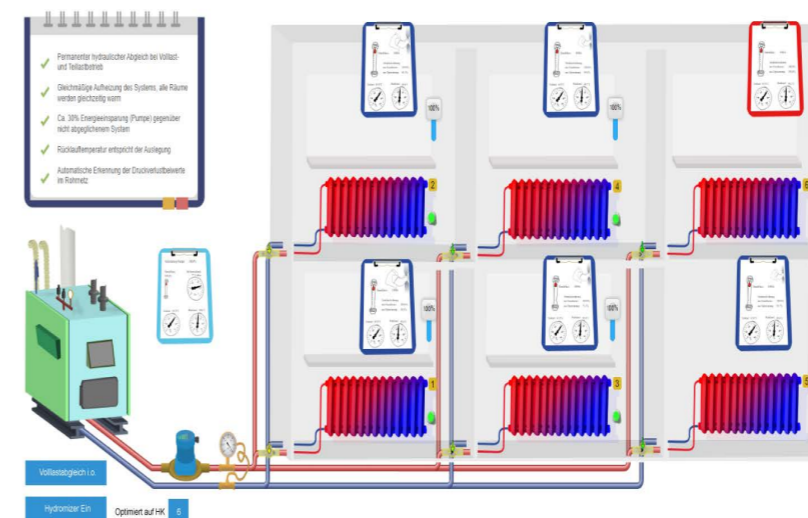
Unbelievable or fantastic?

We logged energy savings of 15 to 69.5% over the year in various full air-conditioning systems equipped with the DIGICONTROL Economizer. The patented DIGICONTROL Economizer optimises air conditioning systems by mathematically perfecting the strategy for utilising the

area of optimum comfort and controlling the air conditioning. The Economizer was developed by GFR in cooperation with Prof. Dr. Sokollik of University of Applied Sciences Merseburg.

Optimisation of hydraulics and compensation

Cloud service in progress



Constant indoor temperature, consistent heating

The DIGICONTROL Hydromizer calculates a dynamically compensated state in hydraulic systems. This also happens if the hydraulics have not been adjusted

properly. This represents a considerable added value for the operator. Furthermore, approximately 30% of the pump's electrical energy is saved.



ROOM4D

Solutions for room automation



ROOM4D is intelligent, flexible, professional, embedded

GFR's room automation concept is called ROOM4D. "4D" stands for the four dimensions of modern room automation: efficiency, intelligence, functionality and design.

ROOM4D contains all the building blocks for realising integrated room automation solutions and offers a variety of integration modules for all areas. As an integral part of the building automation and the GFR system engineering - WEBPROJECT - ROOM4D is continuously from the sensor terminal to the building automation management WEBVISION 5, starting with the planning, over the construction up to the long-term building operation.

www.gfr.de/room4d

More information about the room automation system ROOM4D can be found on our website at www.gfr.de/room4d

iCONTROL

iCONTROL enables the operation of all room automation components via standard browsers within the intra- and internet. iCONTROL additionally allows the organisation and administration of the room layout.



comfort2go

Just scan QR code and operate using a mobile device

comfort2go transfers building and room automation functions to mobile means of communication like smart phones and tablet-PCs by using QR-codes.



DIGICONTROL DEGREEEN

sets standards in integrated room automation

DIGICONTROL DEGREEEN is an intelligent energy-efficiency display. Going beyond technical building automation, DEGREEEN involves the human being in the responsible use of energy.





R4D.RC05 | RC06

ROOM4D - Room operating devices

More elegance for room automation

The room operating devices and multifunctional displays of the product line R4D.RC05 | R4D.RC06 are characterised by their brilliant design with sophisticated glass surface, dimmable multifunctional display and function keys and the touch rotary pulse generator being embedded in the glass front.

It is perfectly suited for all room automation applications like the control of room climate, illumination and blinds in hotels, offices, flats, hospitals, training centres, leisure time facilities, etc.



R4D.RT7

ROOM4D - Room touch panel

A multi-talent for building and room automation

The touch panel R4D.RT7 is not only used in all fields of modern building and room automation for controlling illumination, blinds, heating, ventilation and air-conditioning but also for the operation of extended functions like the control of multimedia systems, time switches and the setup of specific scenarios.

As the R4D.RT7 communicates with the entire automation system, it is the perfect fit for complex applications spanning all trades in building automation. The R4D.RT7 communicates via Ethernet / BACnet / IP interface.



„Office One“ in the heart of Stuttgart

„Success will come to those who face the special challenges of the market.“

The builder Bülow AG has been well positioned with this motto for more than 50 years - since the foundation of the company. The latest example „Office One“ in Stuttgart Vaihingen is an impressive demonstration of this. The building is part of the concept „Green Building Bülow“ due to its sustainable architecture and high energy efficiency. This was also implemented convincingly in the required technical standards of building automation and building management. The quality standard was defined on basis of the BACnet world standard DIN EN ISO 16484. The Gesellschaft für Regelungstechnik und Energieeinsparung mbH (GFR) was able to succeed against all other competitors in the following building automation competition due to its energetically optimised BACnet design. The company was awarded the contract for implementing the overall building automation as well as the building management in September 2017.

Best climate at lowest energy consumption

The holistic integration of all trades of the technical building services stretches from classical trades such as heating, ventilation and refrigeration to security and auxiliary trades.

Special emphasis was given to the best room climate at the lowest possible energy consumption. Room sensors/operating devices based on the EnOcean radio standard of the GFR R4D series were used for this purpose. Demand-driven air changes in the rooms are accomplished by a CO₂-optimised control system. Bus protocols were used in many sectors to reduce investment costs and fire loads. In the rooms, for example, the control of the volume flow controllers and the valves was implemented through the MP-Bus and the fire dampers by means of the CAN Bus using GFR BSK modules of type ems4.DEA11. All meters communicate via the M-BUS protocol. The integration of third-party trades was performed using the open standard: BACnet IP.



Source: Bülow AG



The construction of the century „Elphi“ in Hamburg

Magical, spectacular, breath-taking

These were the first words of the visitors after the inauguration of the Elbphilharmonie on the 11th and 12th January, 2017.

Those statements focused on the extraordinary architecture of the building, which is located in the estuary of the river Elbe, the unique geometry of the „Great hall“ with the „White Skin“, the spectator terraces which are based on the model of a vineyard and the surface structure of the outer building with its 16,000 square meter glass facade which magically mirrors the light and reflections of the water. The building, which is 110 meters high, combines three concert halls, gastronomy, a hotel, luxury apartments, a parking house and a public plaza with a breath-taking view on the entire Hanse city.

The building automation systems are based on DIGICONTROL and BACnet

Two independent management and operation controls, WEBVISION and the energy data management system WEBENCON, which can be operated from six decentral locations, are used in the technical facility management. 384 BACnet Building Controllers (B-BC) „DIGICONTROL ems2.CP04D“ and three automated optical fibre ring bus systems with 660 subscribers and 77 frequency converters, that communicate via BACnet MS/TP, are integrated into the building network. The communication of the energy consumption is performed via the integrated M-Bus and KNX systems. Different kinds of third-party software, e.g. the hotel management system Fidelio, have been embedded.



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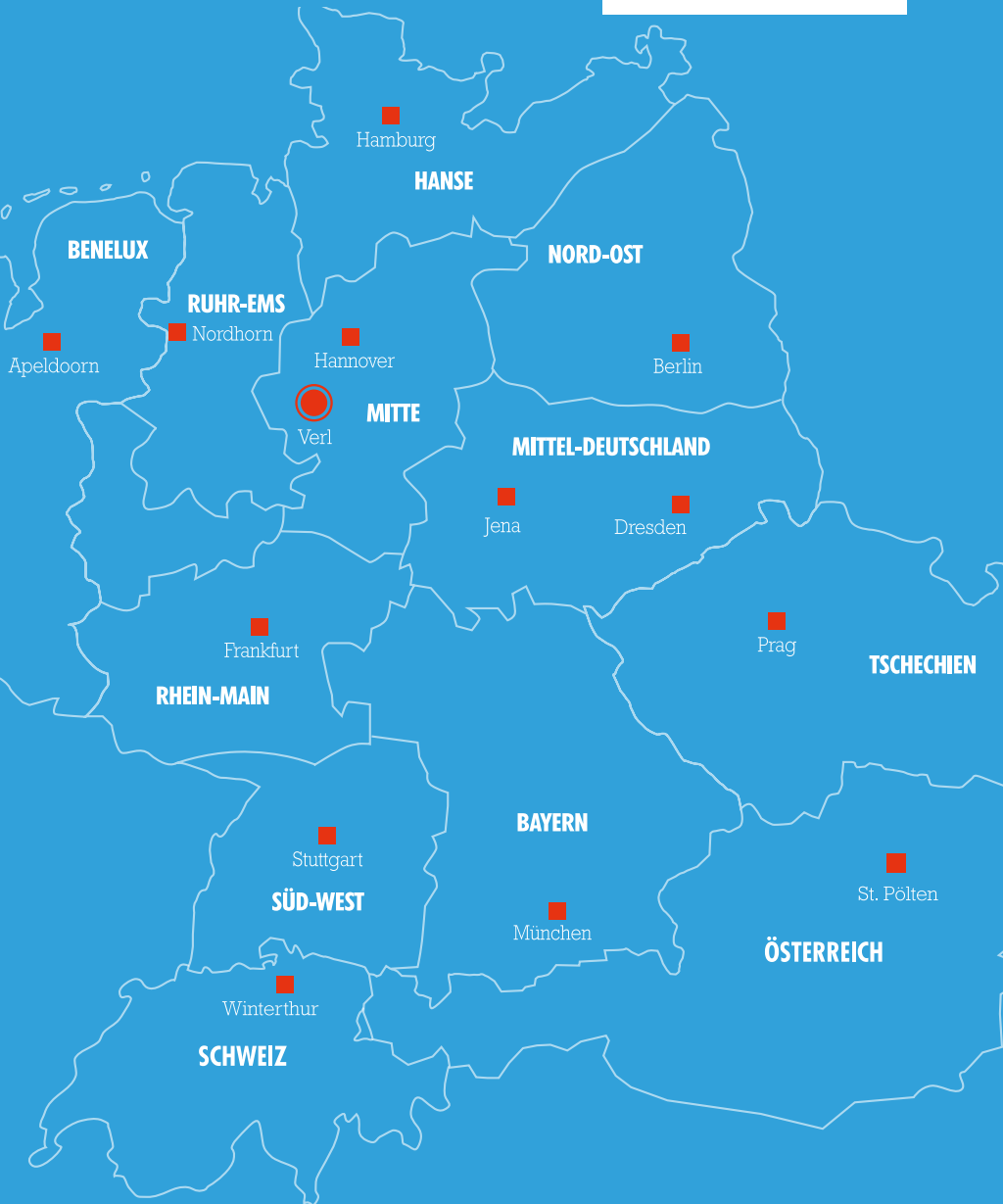
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