



Digitalization

Industrie 4.0

Smart Production

E-Mobility

Smart Energy

Energy Efficiency

Smart Infrastructure

Smart Buildings

Renewables

Making Industry 4.0 real: Smart buildings

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PHOENIX CONTACT UAB / 2020.10.27

Phoenix Contact GmbH & Co. KG



> 2.48 Billion €

 Turnover

> 17.600

 Employees

> 65.000

 Products

4

 Vertical Markets



„Medium sized family business“



> 50 International Locations



Phoenix Contact, HQ Bad Pyrmont

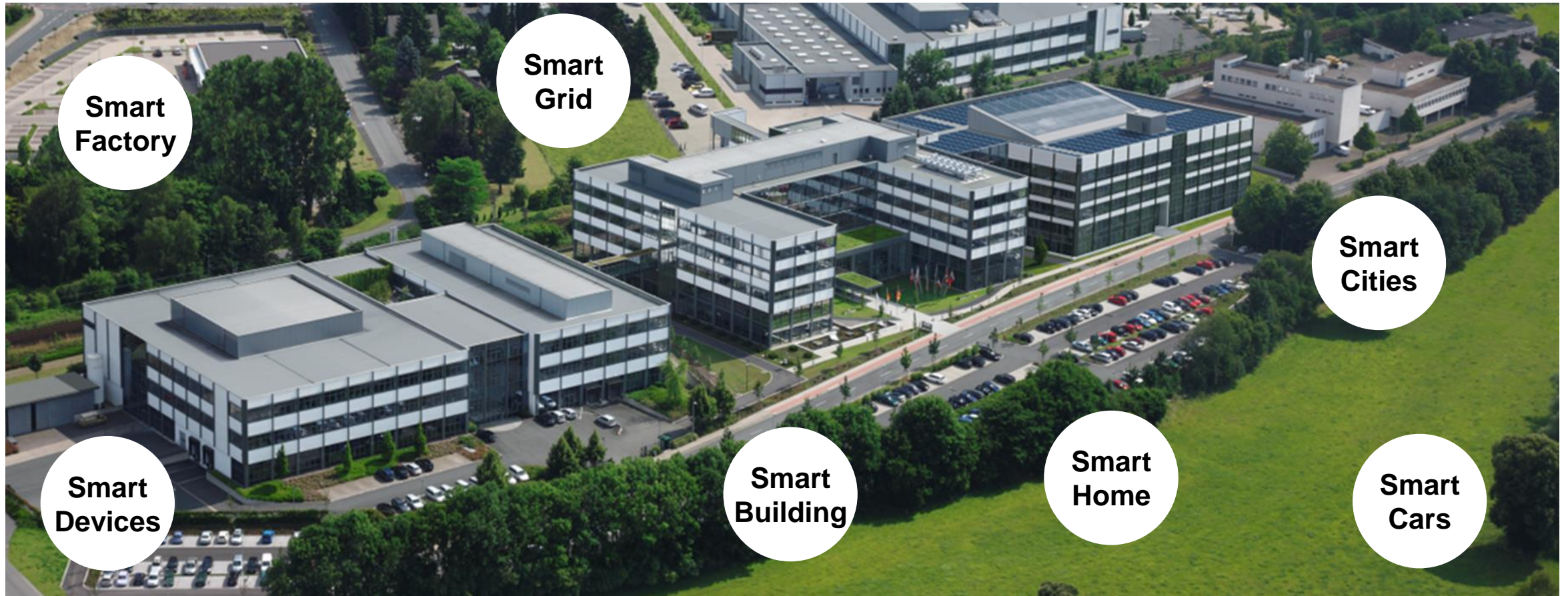
With > 65,000 products, we will find your solution together

Innovative and broad product and solution portfolio



Making Industry 4.0 real: Smart buildings

Our world is becoming “smart”. We are surrounded by smart technology and services



Making Industry 4.0 real: Smart buildings

Digitization in facility management

Networked trades - Building IoT in practice



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„ The building market uses the structures of "YESTERDAY" with the methods of "TODAY" to solve the challenges of "TOMORROW" “

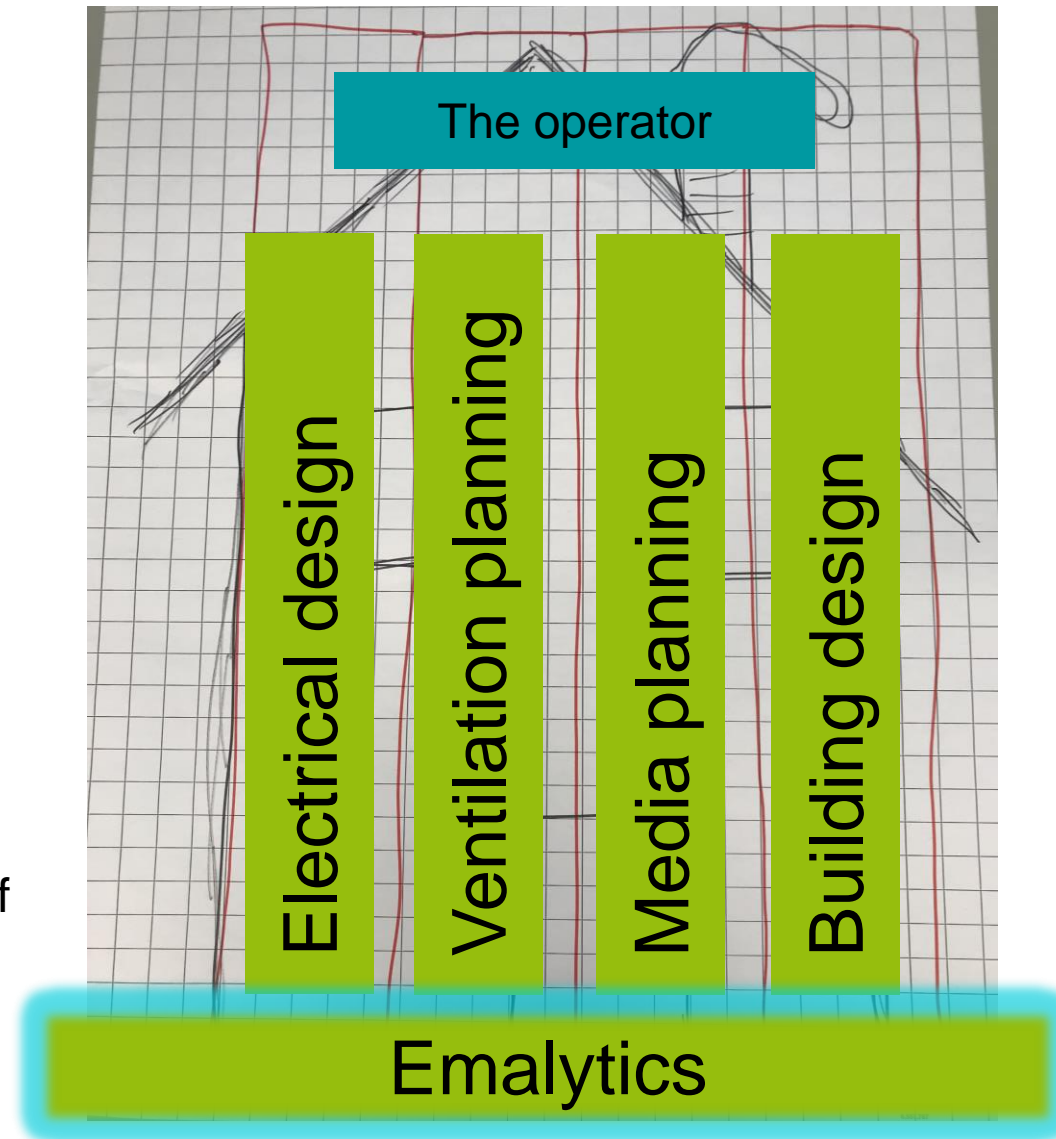
How are (still) buildings built and where is the opportunity

The organization:

Some specialist planners only see your work in the building and only optimize it!

The operation:

Many contacts. Little communication of people and little communication of technology.



The technology:

Each building in the building often speaks a different language.

The future:

Technologies such as AR glasses or indoor navigation offer the operator new opportunities. Basic requirement: a networked building.

State of the art technologies move into the building

New IoT technologies offer great potential

Indoor navigation

Co-Working-Areas

Robot cleaning service

Pay per Use-Services

Voice-Control

5G

Predictive optimization

AR technologies

AI systems

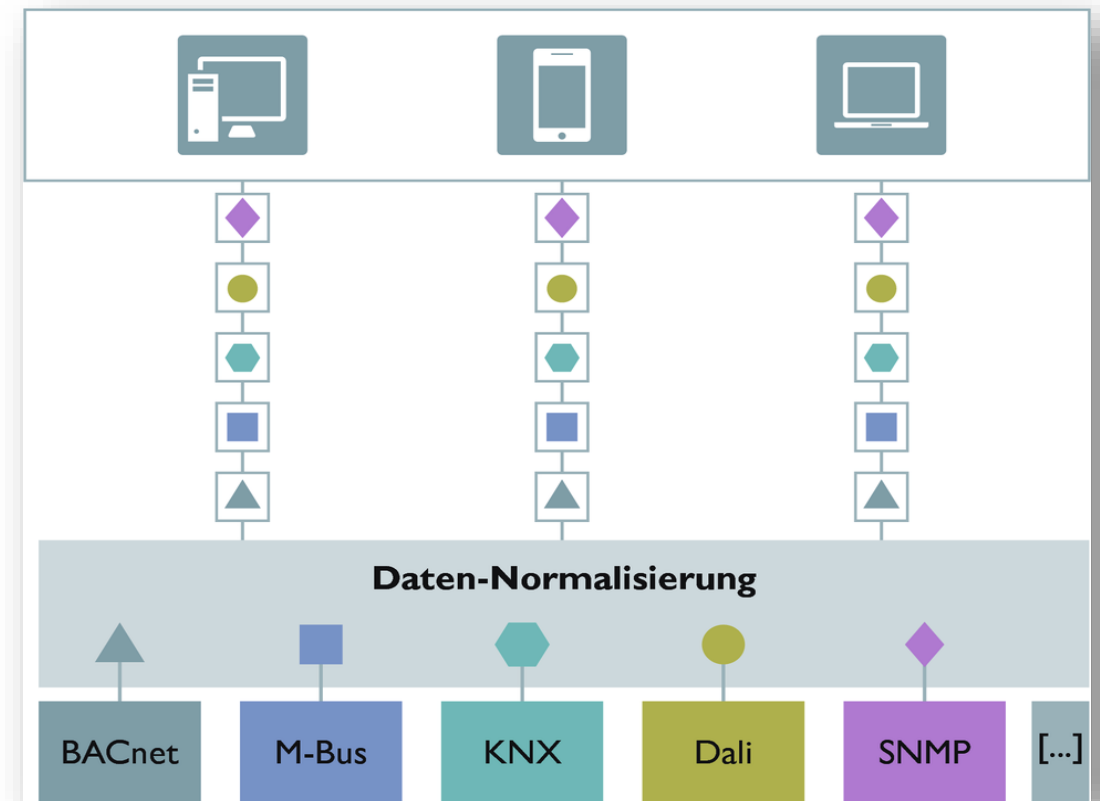
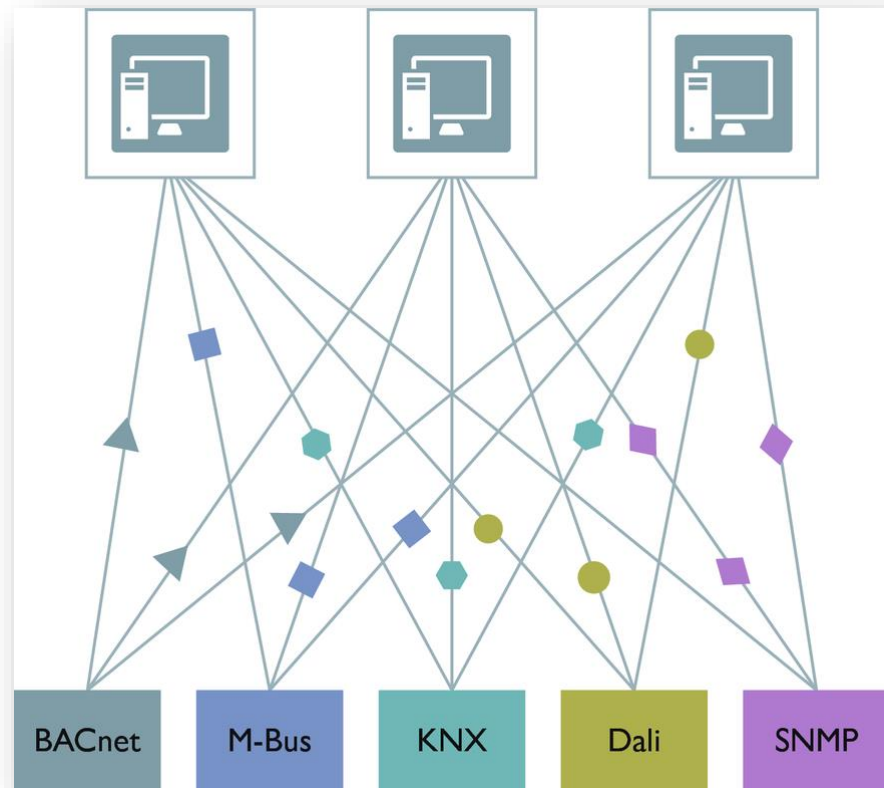
Cloud-Services

Smart-Cities-Integration

Cyber-Security

Digitization in building management

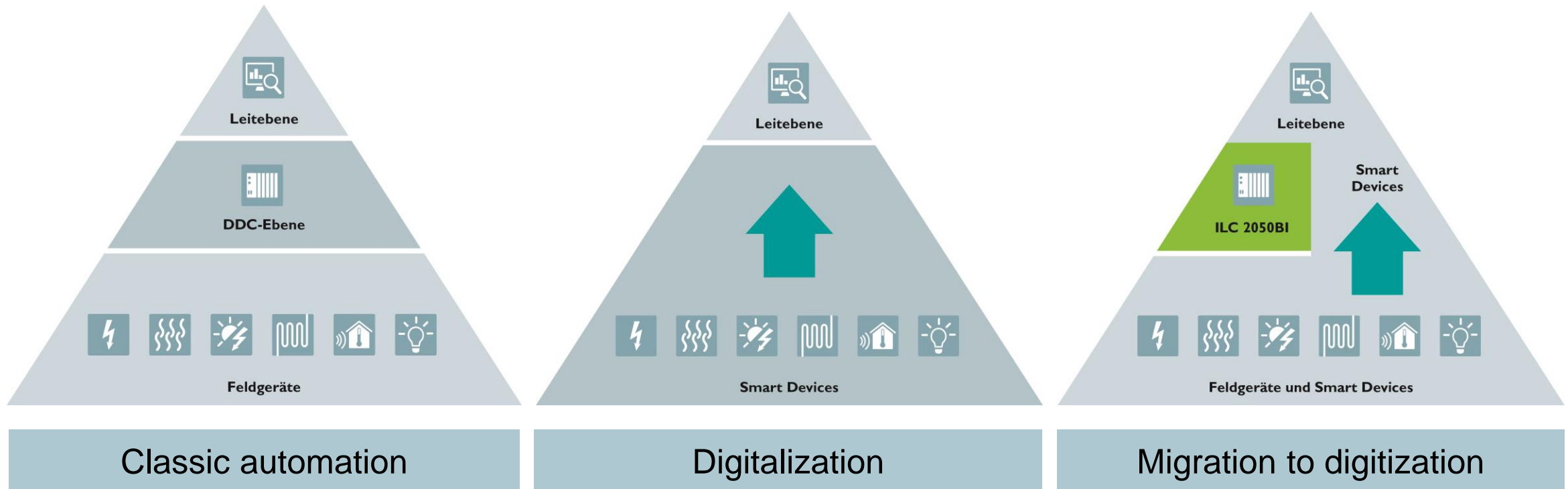
Standardization of communication via software



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Building automation

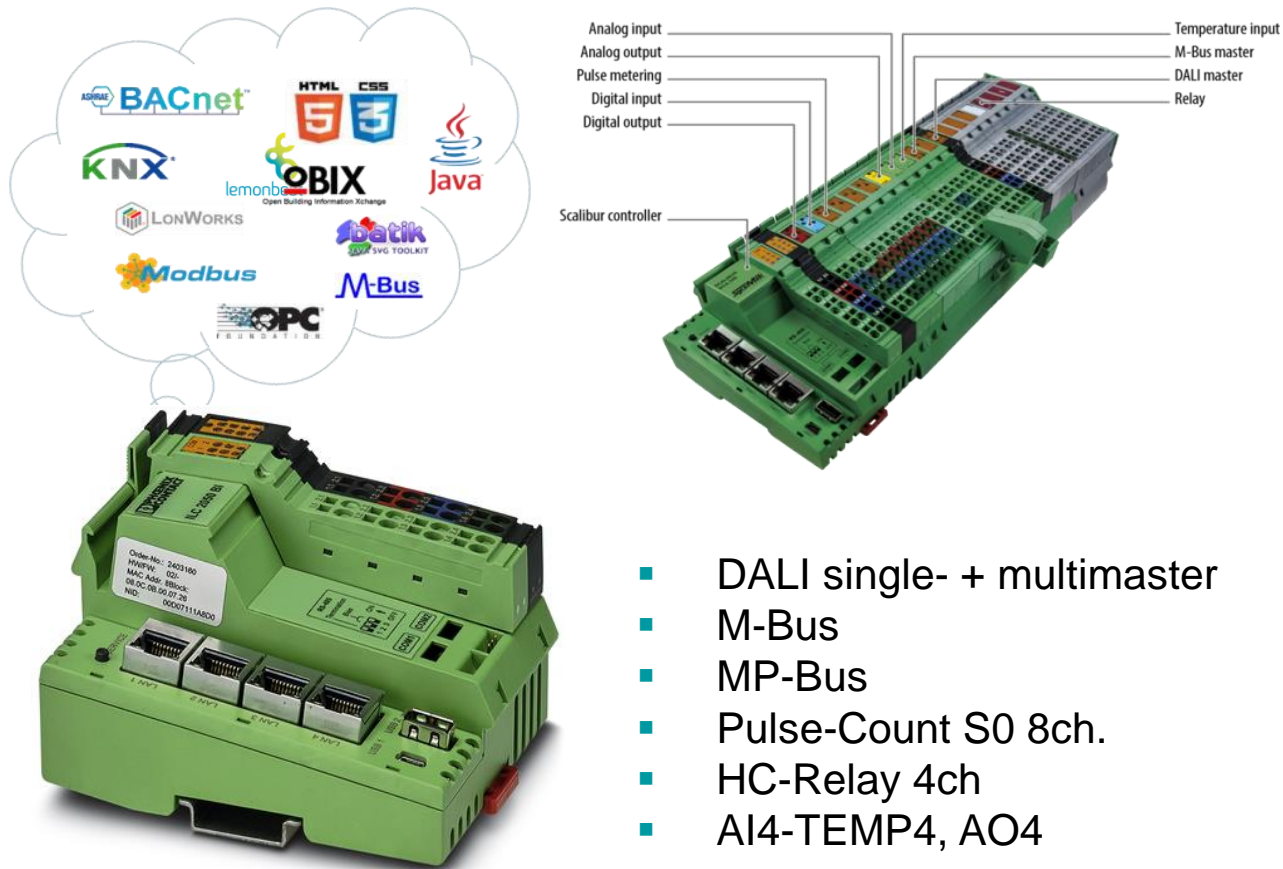
Break through the communication levels



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Control technology

Building IoT-Controller



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The Phoenix Contact Industry Solution Center in Bad Pyrmont. One of the most digital buildings in Europe ...



Example – Advantages in building automation

Start to use your data today



Phoenix Contact, Bad Pyrmont, Germany

Example – Advantages in building automation

Facility as a cyber-physical system

Building types

Production, development
and office building

Maintenance management

Predictive operation via
learning algorithms

Plant monitoring

Heating, ventilation, air
conditioning, space



Domestic production

CHPs, heat pumps,
photovoltaics

Energy optimization

Load and storage
management
heat-cooling ring

E-Mobility

Charging infrastructure incl.
interface to billing systems

Safety
Security
access controls
video surveillance

One building management system for all applications

Example – Advantages in building automation

New building with building IoT

- office building
- 18,000 m² usable space
- 5 floors & atrium
- approx. 600 employees
- 160 KWp photovoltaic plant
- 2 CHP units
- E-Mobility charging stations



Example – Advantages in building automation

Advantages in building operation

- Optimization of operating costs, one system for all applications
- Active workplace co-design creates creative, motivating working environment
- Optimized energy purchasing thanks to combined production planning and energy supply for buildings
- Sustainable know-how development in facility management thanks to integrated system landscape



Example – Advantages in building automation

Automation technology

- 39 Controls
- approx. 200 I/O modules
- approx. 30,000 data points
- Standardized Protocols

BACnet, Modbus TCP/RTU, LonMark, Mbus, ZigBee, EIB, EnOcean,, MP-Bus, Profibus, DALI, Z-Wave, KNX



Embracing the Megatrends of the Fourth Industrial Revolution

Augmented reality

Augmented reality guides external building maintenance technicians, supports quality inspection of tools, configuration of tools and troubleshooting.

Reduce time and errors related to tool configuration and quality inspection

Information about real-time data

Avoid need to accompany and instruct external person



The intelligent production of tomorrow and today's benefit

Using data for AR and navigation



Example – Advantages in building automation

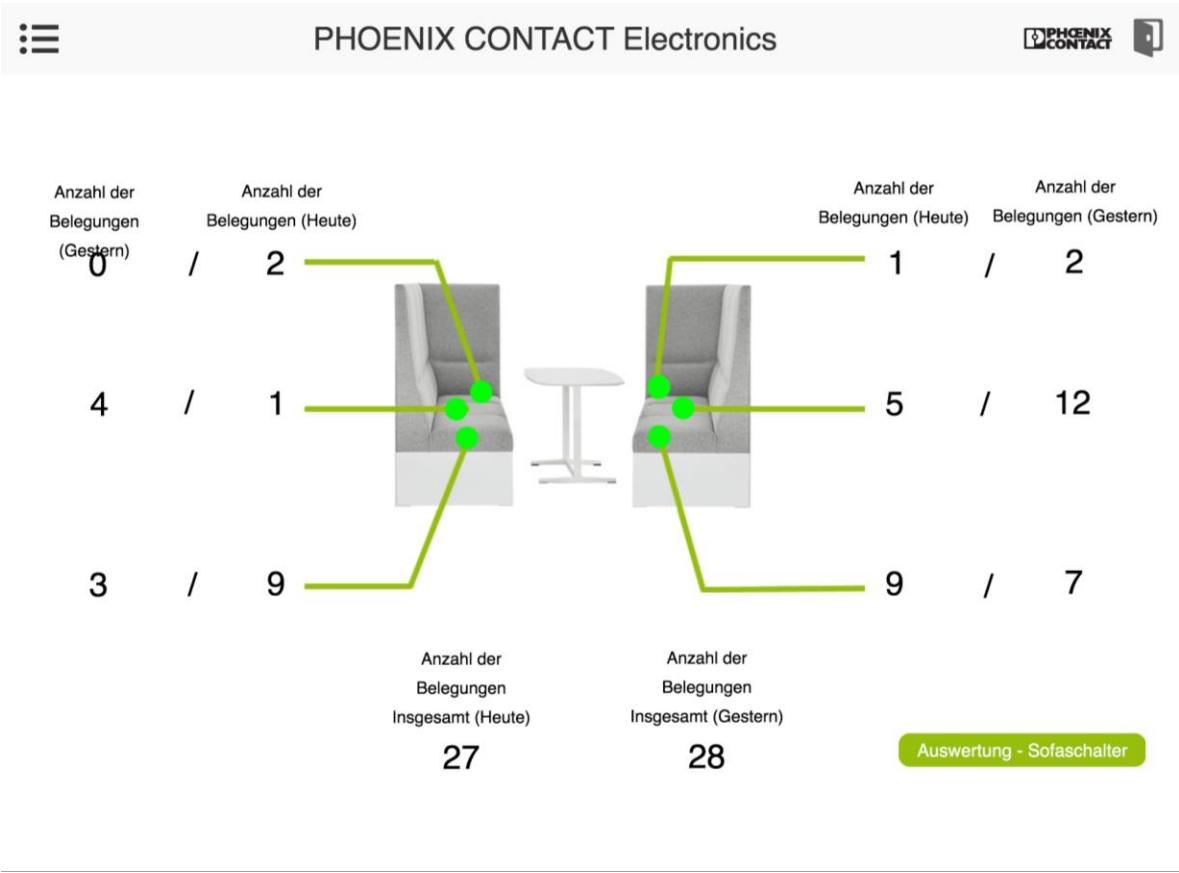
Technical advantages

- Efficient commissioning by creating the data points once as an information object
- Minimized engineering effort through integration of IP communication and classic systems
- Simple connection of existing systems through standardization of classic protocols
- Demand-driven personnel deployment thanks to bidirectional communication
- Preventive maintenance due to high information content and data transparency



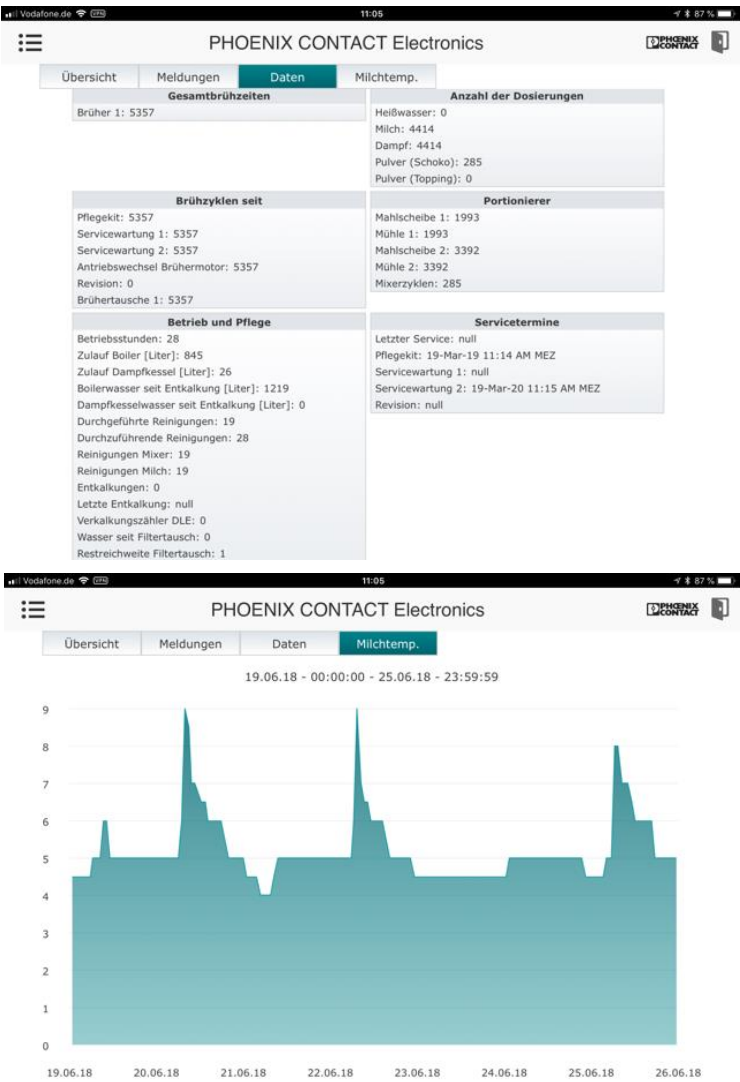
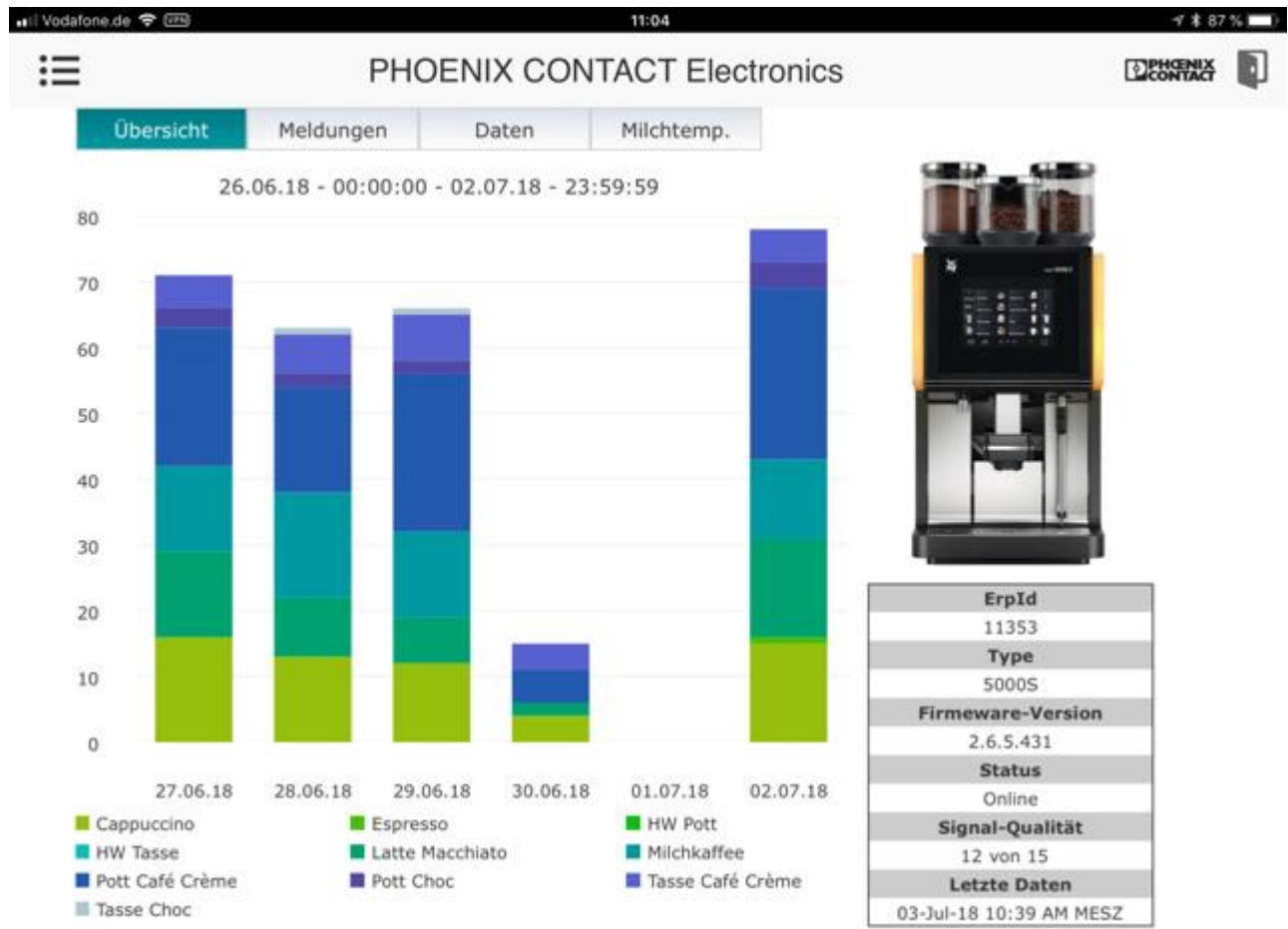
Smart sofa

Benefit from data



The networked coffee machine

Use from data



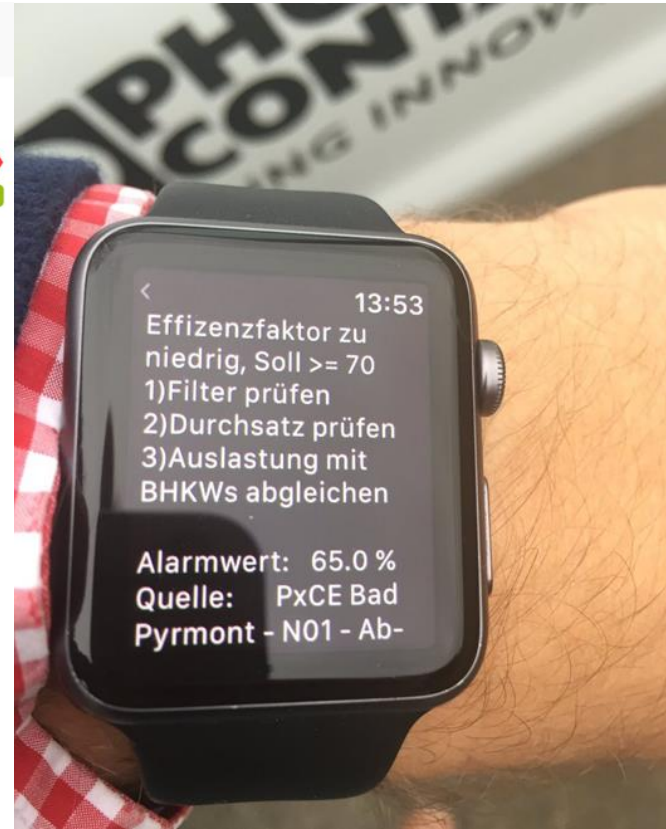
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Passenger and freight elevator management

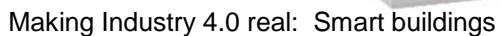
Maintenance cycle after use



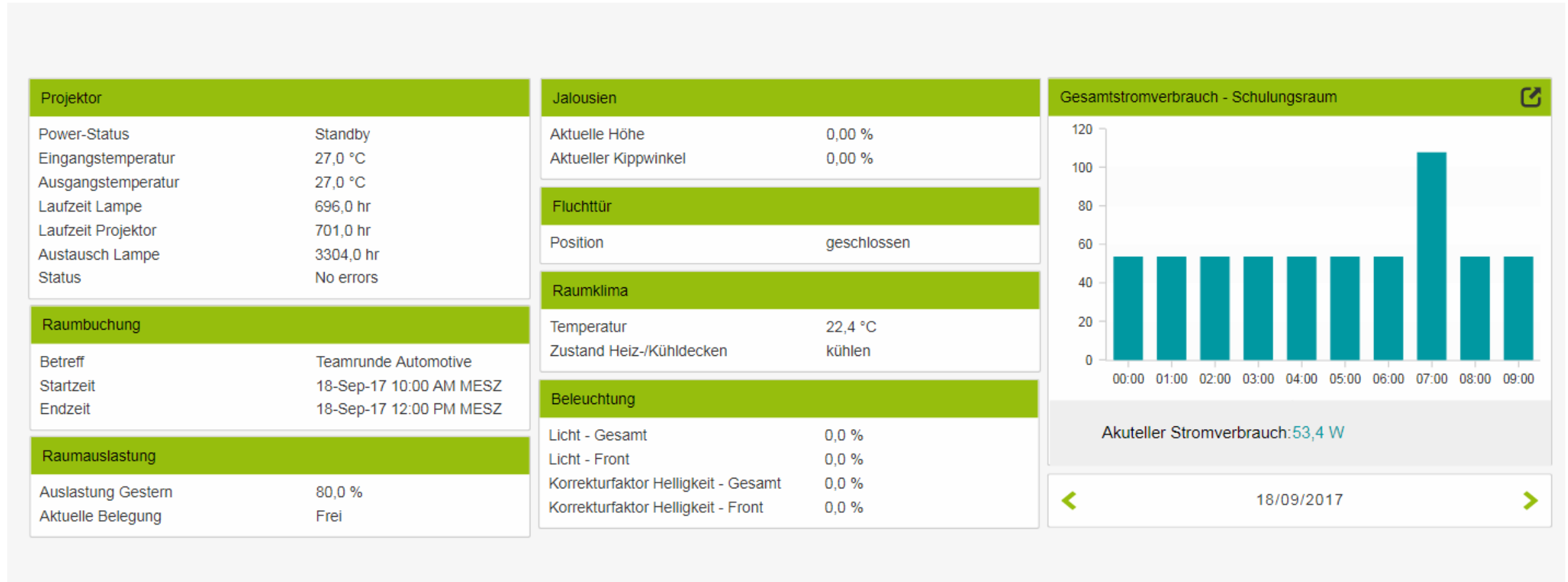
Maintenance tailored to your needs



E-mobility and storage

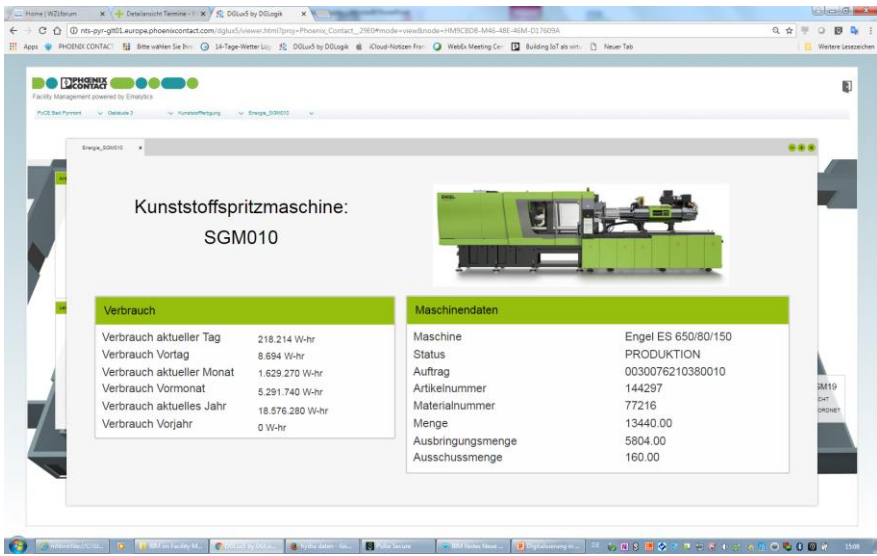


Individual room control based on demand



The networking of the building with the production

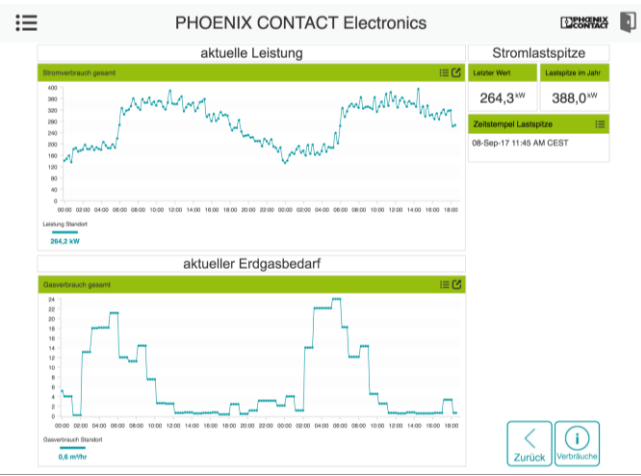
Use from data



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Bad Pyrmont location

Overview of energy consumption

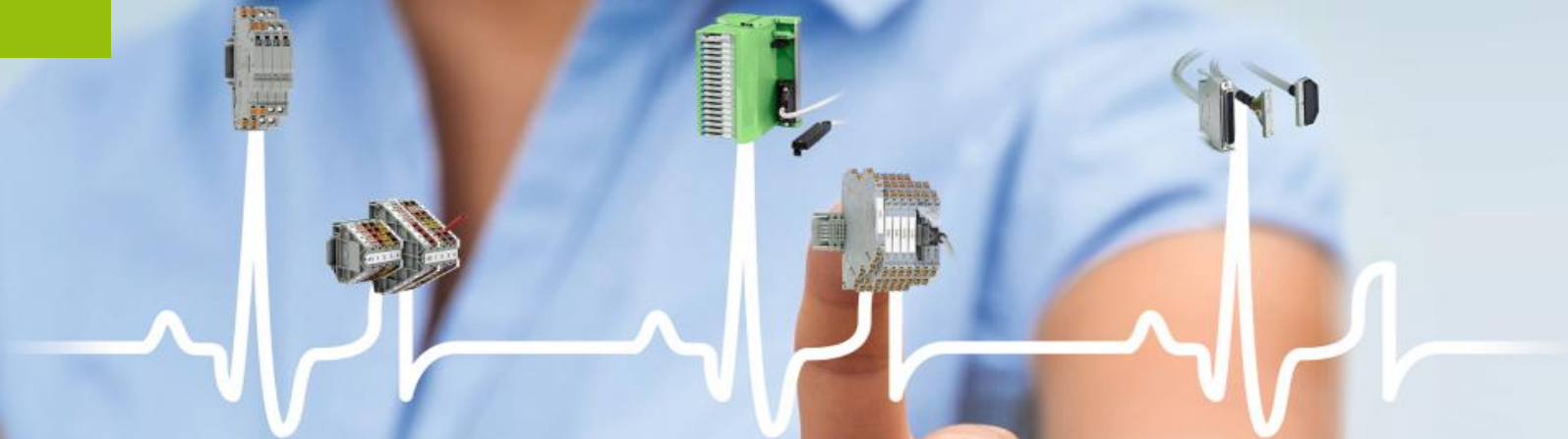


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Benchmark building management Phoenix Contact Bad Pyrmont

Annual savings in operation thanks to Building IoT

50 €/m²



Savings per year >1.000.000 € / 50.000 m²

28 €/m²

Welcome to the future of smart building technology

Building IoT Solution Center in Bad Pyrmont...



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Thank you for your attention and....

...let us seize the opportunities!



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Let's shape the future together!

