BBC BIRCHER

Smart Access

3D object-recognition in automatic access-systems

Workshop Smart Surveillance Sensors

Christoph Schlott

24.05.2022

Agenda

- Short introduction of Bircher Smart Access
- Trends in modern buildings and access systems
- Requirements for smart sensors

Introduction Bircher Smart Access

The Behr Bircher Cellpack BBC Group

6 Business units

BBC Group

BBC Cellpack				BBC Bircher	
Electrical Products	**Power Systems Smart Energy**	**Packaging**	**Technology**	**Smart Access**	**Automation**
Switzerland Germany Malaysia India	Switzerland	Switzerland Germany France	Switzerland Czech Republic	Switzerland Czech Republic China	Switzerland Czech Republic

BBC BIRCHER Smart Access

Company name

BBC Bircher Smart Access

Founded

1957 by Max Bircher

2003 BBC Group

Headquarters

Beringen, Switzerland

70
countries

that we reach directly with our own distribution companies, with our own experts in the market and in close cooperation with local partners.

60
years

and more experience in all applications ensures that Bircher Smart Access stands out. Your partner - all in one.

180
employees

with the common aim of always finding the right solutions and delivering the highest quality

22
sites

around the world with their own distribution companies close to our customers and working in close cooperation with long-standing local partners.

3
strategic market segments

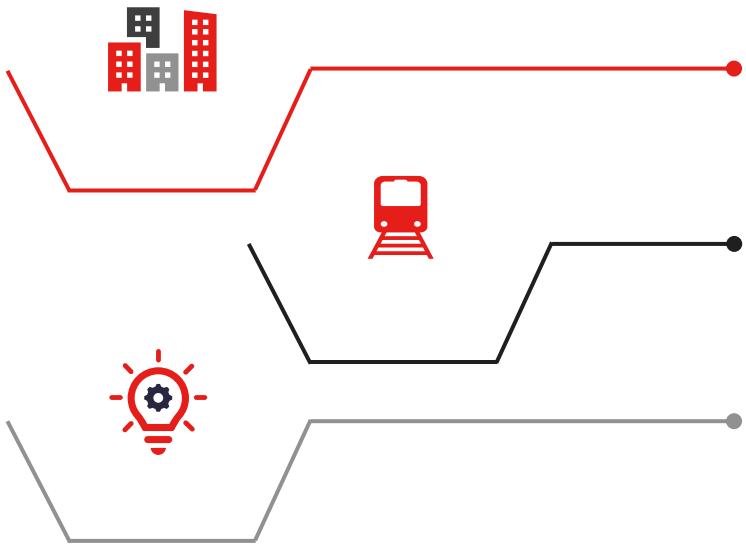
in which we can put pooled competencies to targeted use exactly where the customer needs them.

10%
trainees

bring a breath of fresh air to our company, day in day out.

BBC Bircher Smart Access

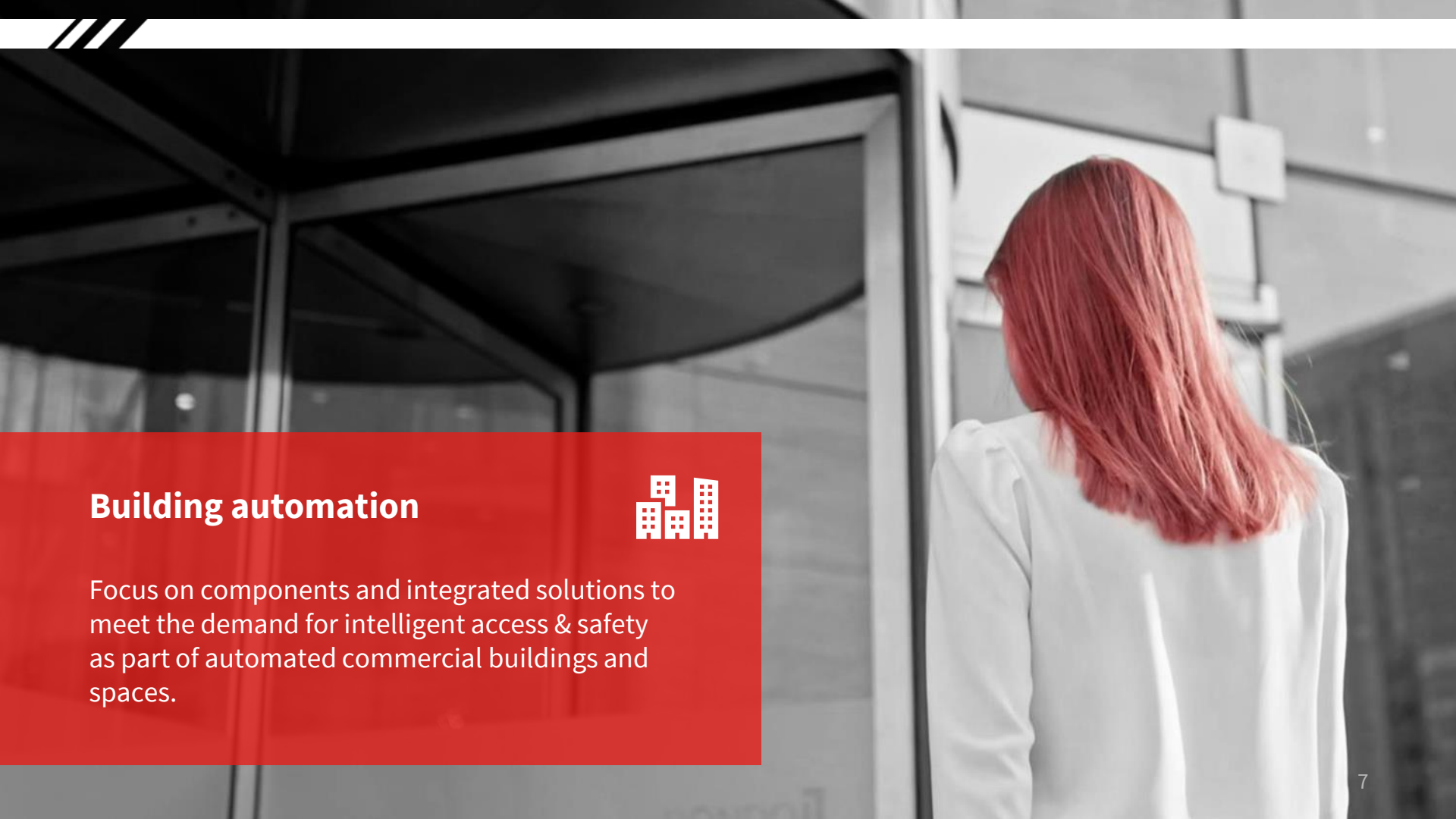
Strategic market segments



Building automation

Transportation

Access products & services



Building automation

Focus on components and integrated solutions to meet the demand for intelligent access & safety as part of automated commercial buildings and spaces.

Building Automation

Overview

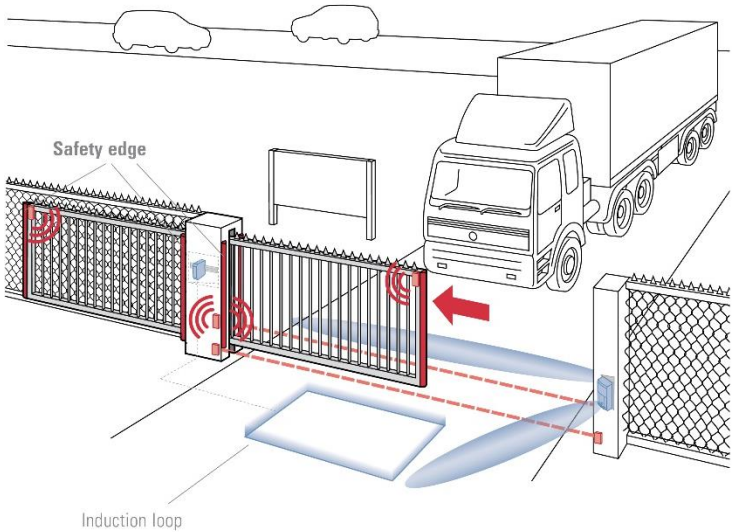
Access to buildings

- Activation & safety for door systems
- Access control
- Access and flow monitoring

Access systems for areas

- Tactile safety
- Inductive safety and activation
- Wireless Safety
- Signal Transmission

Example Access System for Areas



Activation

Radar and ultrasound technology
ProAccess

Loop detectors
ProLoop2
ProLoop Lite

Safety

Pressure-sensitive edge systems
ExpertSystem XL
ClickLine, CoverLine
Pressure-sensitive edges

Wireless signal transmission system
ExpertSystem XRF

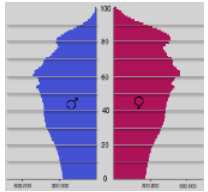
Signal evaluation
Switching devices

Light barriers
LBGate

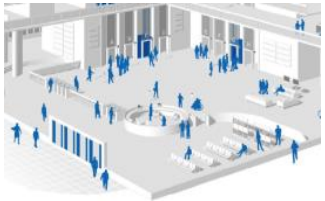
Trends & Modern Buildings

Trends & Drivers

Urbanization
- Smart Buildings
- Sustainability
- Hygienic Access



Demographic Change
- Comfort & Safety
- Access to infrastructure
- Barrier-free



Flow control
- Access control
- People/Vehicle flow
- Connectivity

Age of Assistance
- Automation
- Productivity
- Outsourcing of tasks

Technology Change
- 3D
- Digitization
- IoT

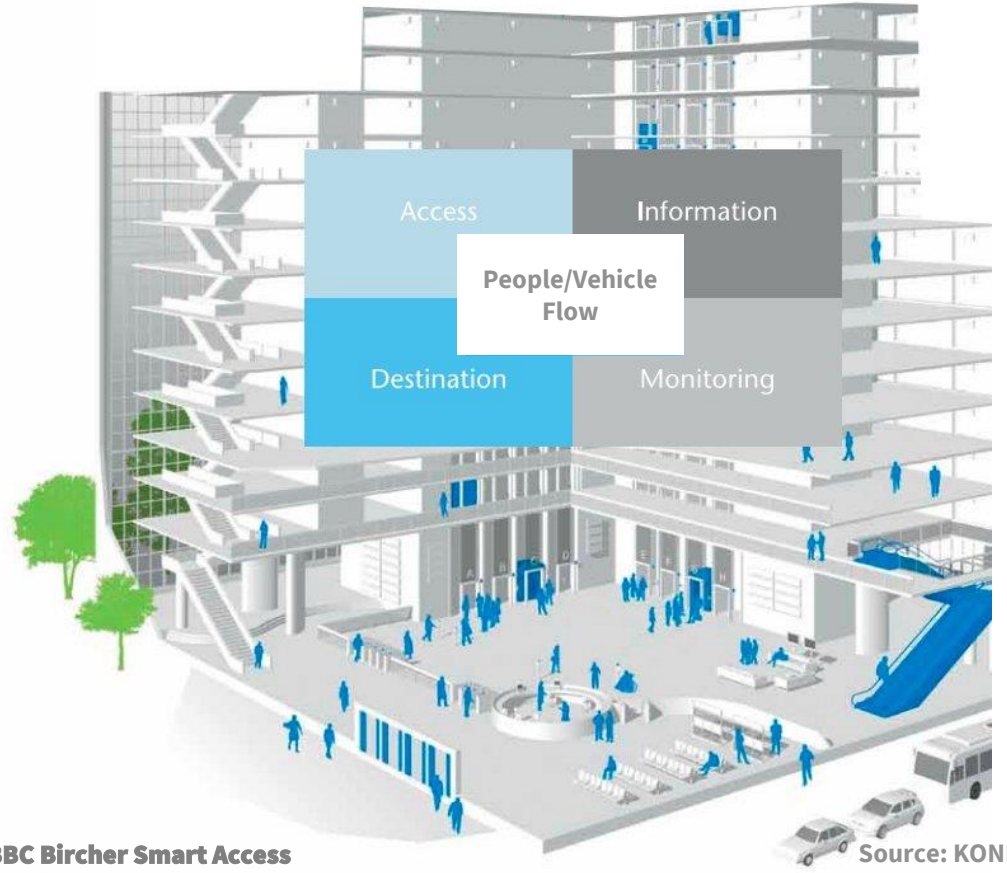
Lack of skilled workers
- Effort to build and service access systems

Smart Building Automation

Benefits of Smart Building Automation

- Optimized energy and operational efficiency
- Automated monitoring and control
- Quick and better decision making
- Smart control of facilities and reduced risk of system failures
- Lower life cycle cost
- Increased safety and security measures

Flow Control in Smart Building Automation

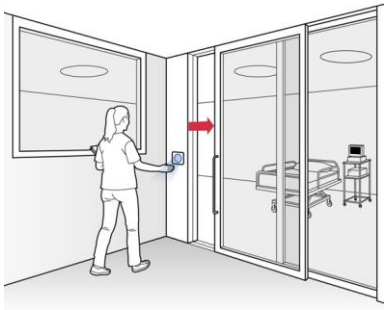


Source: KONE

Components of flow control & access systems

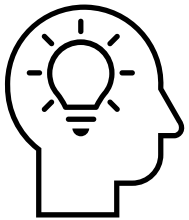
- Outside of building
- Automatic gates & barriers
- Parking hall
- Entrance
- Automatic Pedestrian Doors
- Lobby
- Main landing
- Security Gates
- Elevator
- Escalator
- Stairs
- Corridors
- Offices
- Shops
- Room Automation
- Escape Routes

Tasks of Access Systems



Basic tasks of access systems

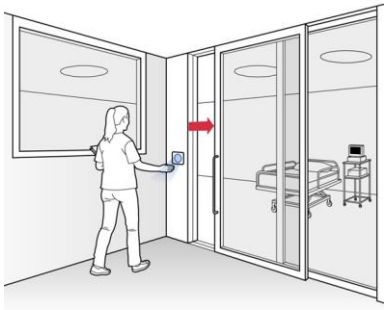
- Open, close and move comfortable, hygienic, barrier-free and safe
- Thermic separation between warm / cold
- Allow or deny access to restricted areas
- Adjust to usage behaviour

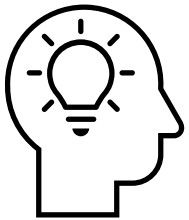


A dilemma of access systems

• Comfort, barrier-free	= always open
• Safety	= move slow
• Energy efficiency	= always closed or move fast
• Access control	= open only when allowed
• Flow control	= work in a system, connectivity
• Changes in the environment	= adjustment needed

Tasks of Access Systems





Advanced tasks of access systems

Utilize the strategic position of Access Systems in buildings to gather data for Smart Building Automation

- Demand-driven functions
- Commercial information for retail applications
- Occupancy management
- Room automation
- DCV (demand-controlled ventilation)

Further integration of Building Management Systems by using the advantages of 3D object recognition with smart sensors

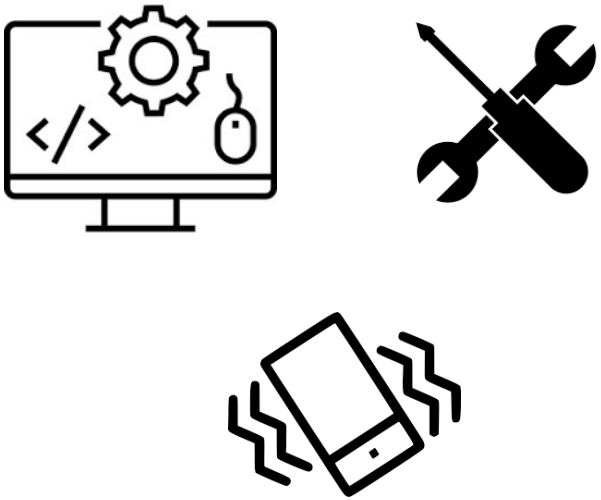
Requirements for smart sensors

Requirements for smart sensors

Object detection

- Characterization of objects and people
- Position in detection area
- Direction of movement
- Speed of movement
- Safe testable detection
- Counting of objects
- Separation of objects
- Staff / Visitor
- Gender
- Age
- Mood
- GDPR

Requirements for smart sensors



Usability

- Teach in of environment and of its changes
- Robustness against environmental influences
- Teach in of the application e.g. door leaves, typical move patterns
- Provide exact information about the geometry of the surveillance area
- Masking
- Plug & play set-up
- Remote parametrization

Requirements for smart sensors

Building System Scheme

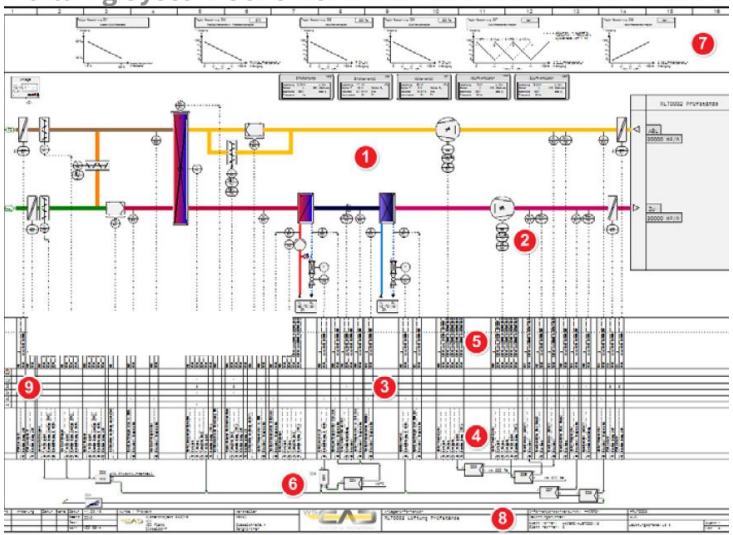


Abbildung – Anlagenschema VDI 3814 für die Gebäudeautomati

Integration, interfaces & data

- KNX, BACnet, CAN, DALI, EtherCAT, Ethernet, EIA-485Interbus, Modbus, Profibus, Profinet, PLC-BUS, eBus, OpenTherm, X10
- Amount of data (> 10.000 Datapoints/Sensors in modern buildings)
- BIM ready
- Accuracy

Thank you very much.

BBC Group

BBC Bircher Smart Access
Wiesengasse 20
8222 Beringen
Switzerland