Smart Building Manager

The tool for efficient building management

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Building automation has undergone a fundamental transformation in recent years. Autarkic systems became networked systems that the user can control quickly and easily via an intuitive, graphical representation of the building. Building-wide changes at the click of a mouse and the creation of individual rules are easier than ever before. Clear diagrams show current as well as past operating states and consumption values, thus creating the base for optimized, efficient building operation.

The MICROSENS Smart Building Manager controls the building technology, monitors and updates device configurations, visualizes all relevant operating parameters and consumption values This provides the user with the informations and functions he needs in a neatly and easy to understand manner.
Existing analog and digital components and devices can be integrated into the system via Smart I/O controllers.
In short: The Smart Building Manager is the key to efficient building management.

Evolution of powerful building automation

Classic building automation was characterized by isolated solutions, by autarkic systems that operated completely independently of each other via their own, often system-specific cabling. Linking them together was difficult and often impossible. After commissioning, the systems usually proved to be quite inflexible; changes and expansions were complex and therefore time-consuming and cost-intensive. Important data was not displayed or was only displayed at the system control, users had no way of obtaining a comprehensive overview quickly and easily; information about the condition of the building and the consumption values as a basis for better, more efficient building operation had to be gathered with great effort compiled and evaluated by the users themselves.

IP-based solutions made it possible for the first time to interconnect systems. The foundationfor this are the universal IP protocol and standardized application-neutral cabling in accordance with EN 50173-6 and ISO/IEC 11801-6. Despite interconnection and partial interconnectivity, the individual systems continue to operate independently, and users still have no possibility of obtaining a comprehensive overview quickly and easily. Where and when can electricity be saved, where can energy efficiency be increased, and thus costs reduced? IP-based building automation also often leaves these questions unanswered.

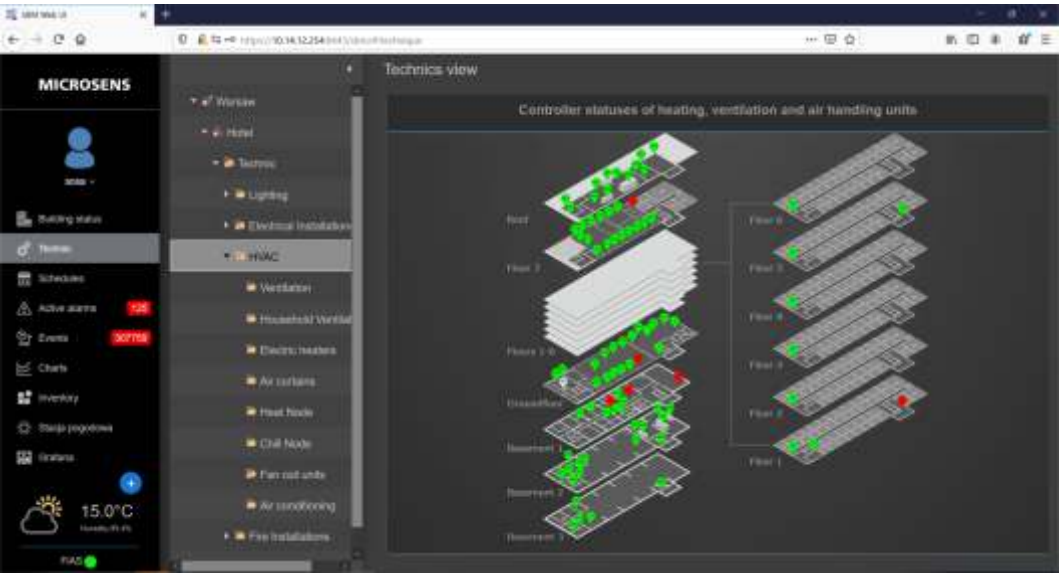
Modern smart building solutions also use the IP protocol and standardized, application-neutral cabling, but they go a big step further. They integrate the individual systems into a holistic solution. As software-based solutions, they can be easily and flexibly adapted to individual requirements, and changes and extensions can be made with minimal effort. Additionally they offer another enormous advantage: As a superordinate system, they manage and visualize all processes, system statuses and consumption data, establishing the prerequisites for flexible, optimized and thus efficient building operation.

Added value of modern building automation

The Smart Building Manager not only handles the tasks of classic building automation by setting the respective setpoints. With the Smart Building Manager, the complete management of all substations building-wide is possible with just one tool. Substations and controllers only have to be configured once, because the Smart Building Manager scans the entire system, determines the configuration of the components and makes the data available to all the processes it manages and controls. Everything only needs to be touched once.
Data and its visualization are associated to the respective data points and all instances access them, resulting in a much lower effort for set-up, operation and modifications.

Visualization

Data is only useful if it can be analyzed easily and understandably. Smart Building Manager's dashboard provides an "at a glance" overview with charts and graphical representation of data as diagrams. In addition to the standard charts, users can create their own charts very easily. Whether on the PC, tablet or smartphone, whether mobile or wall-mounted - relevant data is always easily accessible.



The visualization of the data makes their monitoring quick and easy. Deviations from the target state are detected immediately, enabling rapid intervention if necessary and serving as a basis for targeted optimization.
For example, it is possible to check which consumers require how much power and when, and how often this occurs. Load peaks are reliably detected and can be avoided. The optimum electricity tariff can be selected on the basis of reliably checked consumption instead of just estimated consumption, which can save a lot of money in view of rising energy costs.

Efficient building utilization

Central management of the devices and systems distributed throughout the building creates the basis for the most efficient building use possible. For example, presence detectors record the number of people in a meeting or training room or in an open-plan office. The Smart Building Manager compares them with the maximum occupancy rate, which enables statements to be made about the actual utilization of the rooms.
If, for example, two large meeting rooms for up to fifteen people each are constantly booked out, but usually only occupied by three to five people, the room layout can be optimized: Three meeting rooms for up to five people, one for up to twelve. As a result, more rooms are available, more meetings are possible at the same time, and a room is more often available for meetings scheduled at short notice. Now the rooms are used much more efficiently.

Optimal resource and HR management

Hotels benefit from the coupling of the Smart Building Manager with the hotel management software. If a room is not occupied, the Smart Building Manager automatically switches off the lights, heating and air conditioning operate in the lowered range, and in summer the blinds are automatically closed to prevent the room from heating up due to solar radiation. When the guest checks in, the heating or air-conditioning system goes to set mode, the light comes on when the door is opened, and a personal greeting appears on the TV. If the guest has stored his personal profile with the hotel, the room technology is preset according to his preferences. Cleaning and maintenance staff are directed to rooms that have become vacant so that they are available again as quickly as possible. In this way, resources and personnel are used optimally, which is not possible to the same extent with conventional hotel automation solutions.

Integration of existing devices

Existing digital as well as analog devices and components can still be used with the Smart Building Manager. The analog and digital Smart I/O Controllers from MICROSENS create the interface to the IP network and control the connected devices, sensors and actuators. ModBus devices can be integrated directly into the Smart Building Manager. This creates particularly economical solutions with a high level of investment protection, because existing, tried and tested equipment can simply continue to be used.

Central control of schedule-based processes

With the scheduler of the Smart Building Manager, scheduled processes can be centrally configured building-wide and across all systems. Regularly recurring events such as Mondays at 08:00, weekdays from 08:00 to 19:00 or weekends, and also one-off events such as Christmas holidays or New Year's Eve - the Scheduler schedules the tasks and ensures that they are executed on time. The associated rules can be assigned to individual data points as well as entire groups.
For example, the Smart Building Manager can ensure that the lights in offices and meeting rooms are switched off at night, on weekends and on public holidays, and that the heating and air conditioning systems operate in the lowered range. At the same time, it arms the alarm system during this time and switches it off again in good time before work starts. In this way, operating costs are reduced and security is increased at the same time.

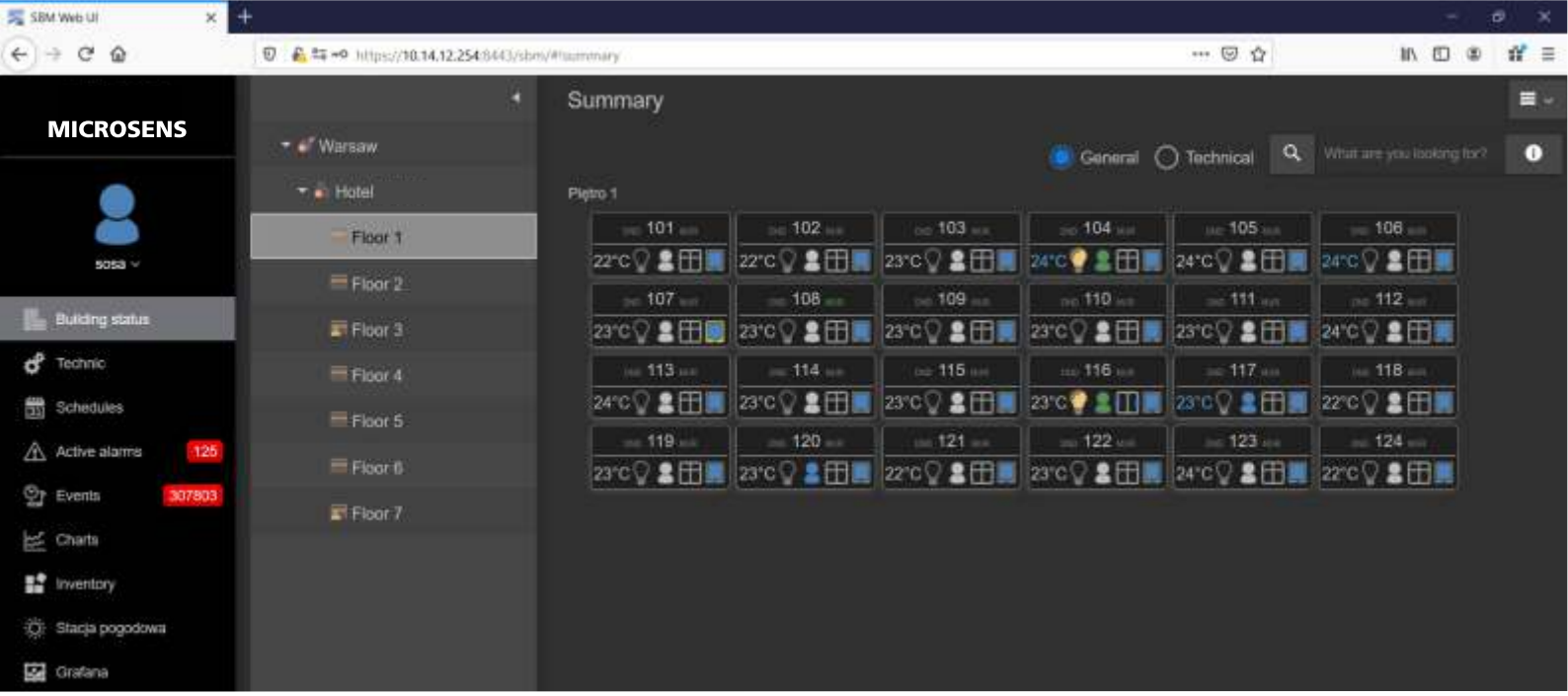
Clustering

Devices, sensors and actuators can be quickly and easily bundled into logical groups, for example individual lights into lighting groups, radiators in a training room, presence detectors in freely definable areas and many more. Just as quickly as they are created, clusters can be changed, divided and redefined. Data can be collected individually and simultaneously in groups. Group-wise control and evaluation provides a much better overview, simplifies operation and saves a lot of time.

Orchestration

The Smart Building Manger operates as a superordinate system and can thus orchestrate the interconnected systems. Just as a conductor directs the individual musicians of an orchestra for the optimal overall result, the Smart Building Manager conducts the individual systems and installations for optimal, efficient building operation. In the process, dependencies between the systems can also be defined.
For example, the heating or air conditioning in the meeting room moves from the lowered mode to the work mode in time before the meeting. For the meeting, the power outlets and IT connections that were previously deactivated for security reasons are activated.

When the last participant leaves the room at the end of the meeting, the heating and air-conditioning systems are moved to the lowered mode, sockets and IT connections are disabled, and the lighting and media technology are switched off. The lower energy consumption reduces operating costs, and the blocking of IT connections in unoccupied rooms increases security.



Roll out configurations building-wide at the click of a mouse

In office buildings and hotels, many rooms are similar, and some are designed identically. This is where smart building solutions can fully exploit their advantages. The configurations of the devices and components of the building technology are created for one room and automatically distributed via Smart Building Manager to the devices and components of all similar rooms after approval. In a large hotel, for example, it is sufficient to configure the smart building automation devices of one room. With the Smart Building Manager, they are simply distributed to the devices of all other similar rooms at the click of a mouse. Changes also only need to be entered for one room and can be automatically distributed to all others. Hoteliers benefit from much less effort and enormous time and cost savings. Of course, these benefits are also applicable to offices in system buildings.

Event log

Events, whether significant or small, are recorded with date and time in a logbook. In this way, every event can be traced without gaps. Events can be sorted and filtered. This allows the facility manager to search for events and dependencies in a targeted manner, which serves as a valuable basis for optimization and improvement.

Intelligent, effective alarms

The visualization of events and alarms provides a clear overview. With the "first things first" approach, users and technicians can grasp the essentials at first glance and respond quickly and appropriately. The Smart Building Manager can also be used to set up rules for alarms and their display.
In conventional systems, for example, subsequent faults that inevitably occur after a main fault lead to long, confusing error messages. Users and service technicians are literally overwhelmed by a long list. If desired, the Smart Building Manager can hide the inevitable subsequent errors and the service technician can concentrate on the main error. Once the main fault has been eliminated, the subsequent faults disappear automatically. What remains in the error list must be investigated further. This enables targeted, effective troubleshooting, which saves a lot of time and therefore money.

Only a few software components

The Smart Building Manager consists of only two components: The server component with the database runs on a server in the protected technical room. The client component with the visualization dashboard runs on PCs, tablets and smartphones.. Users only pay for what they really need and can expand as required at any time. Pay-as-you-grow in the best sense.

Portlets for individual functions

Portlets are small software modules that provide individual adjustments and additional functions in the Smart Building Manager. This can be the graphical representation of a room or precise specifications for the building technology. The Smart Building Manager thus offers almost unlimited possibilities. Since no two buildings are the same and every user has their own requirements and preferences, portlets are used to implement customer-specific solutions quickly and easily. Existing configurations and settings that are not affected by the new portlet remain unchanged.

Simple practical concept

With the Smart Building Manager, MICROSENS provides a platform with all important core functionalities and thus creates the basis for comprehensive, efficient building management. The system integrator discusses the individual requirements and desired functions with the user, adapts the Smart Building Manager accordingly and writes the portlets with which the individual requirements and special requests are implemented. They can also be used to modify the Smart Building Manager at a later date and during ongoing operation with minimal effort. In this way, functionalities can be easily retrofitted. An example of retrofittable room control functions in a hotel: If the guest leaves the room, the room control now saves the current settings. If the room attendants enter the room, the building automation system switches on all the lighting at full level to facilitate cleaning; the heating and air conditioning remain in lowered mode: When the guest returns and opens the door, the Smart Building Manager switches on the lighting, heating and air conditioning as the guest had set them before leaving the room.

Software Made in Germany

The Smart Building Manger is an in-house development of MICROSENS. As a German company, MICROSENS is accessible and tangible, with experts instead of call centers and with direct contacts instead of endless waiting loops and chatbots. And as a local company, MICROSENS can react quickly and flexibly and respond to customer requests in detail.

Prospects

The demand for intelligent, software-based solutions for efficient building management, which visualizes the entire building and all associated relevant data and technical functions, will continue to increase. Only the visualization of current and past data of the building technology and the interdependencies of the systems enable the optimal use of resources and the associated energy and cost efficiency.

Summary

The Smart Building Manager is the central component of the Smart Building Solutions from MICROSENS. The superordinate, central management of all networked equipment, systems and components, including their configuration and the visualization of all relevant building data at a glance, enables efficient building operation that is not possible with conventional solutions. Existing digital and analog devices and components can be integrated via Smart I/O controllers. With portlets - small software modules - customer-specific solutions can be implemented easily, quickly and efficiently and can also be retrofitted during operation. The licensing model is based on the number of data points which are to be managed with the Smart Building Manager. To keep it simple there are only two components. The basic licence includes the installation file and a basic amount of data points. If more data points are to be managed, there is an expansion pack to increase the number. In this way, the user only pays for what he really needs and can expand as required at any time.
The Smart Building Manager from MICROSENS is the key to efficient building management.

MICROSENS

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MICROSENS GmbH & Co. KG
Küferstr. 16
59067 Hamm

Tel.: +49 2381 9452 242
Fax: +49 2381 9452 100
info@microsens.de

www.microsens.com/smart-building-manager