



BMS

Building Management System

Heating and ventilation
Fire protection systems
Access control and authentication systems
Intrusion control systems
CCTV systems

Asix is a classic SCADA system software, thus contains all the necessary tools to design any monitoring and control application for intelligent building (BMS systems). Because of their nature, these applications need to integrate diverse types of data coming from different sources: from classic control systems based on programmable logic controllers (for example boiler control systems or ventilation systems), from fire protection systems, from equipment for room access control and authentication, from CCTV systems etc. Information from all these sources can be easily integrated in one Asix application, facilitating control and operation of building installation and giving the administrator the tools for system tuning as well as subsystems parameterization. A wide variety of communication drivers gives the ability to integrate multiple data sources into a single application.

Heating and ventilation (HVAC systems) are of particular importance today because of their potential impact on reducing the operating costs of buildings. The Asix application allows HVAC system visualization, tuning and system parameters setting. Asix enables the automatic setting of HVAC set points accordingly to privately defined schedules aimed at lowering the temperature of rooms being unused. Adequate set points are sent to PLCs in order to execute the schedules.

Fire protections systems are a particularly important part of building security. So far, they have been implemented as the separate installations, typically with the limited possibility for visualization or with its own, dedicated operators stations. However multiplying the number of access points to information makes building managing more complicated, therefore integration of fire protection system in the BMS application makes it easier and more efficient to supervise the building, providing additional opportunities for long term data and alarm logging in BMS system archives.

Control and access authentication system is usually built on the basis of specialized equipment (card readers, occupancy sensors, automatic locks). The system enables precise allocation of the access rights to the building rooms as well as keeping record of entries/exits and state of locks. This is of high importance in hotel, university and office buildings. Information from card readers can be integrated in an Asix application thanks to the interface to any database. The information retrieved in this way is available on the computer screen at one mouse click. Generation of relevant reports and data views is also possible.

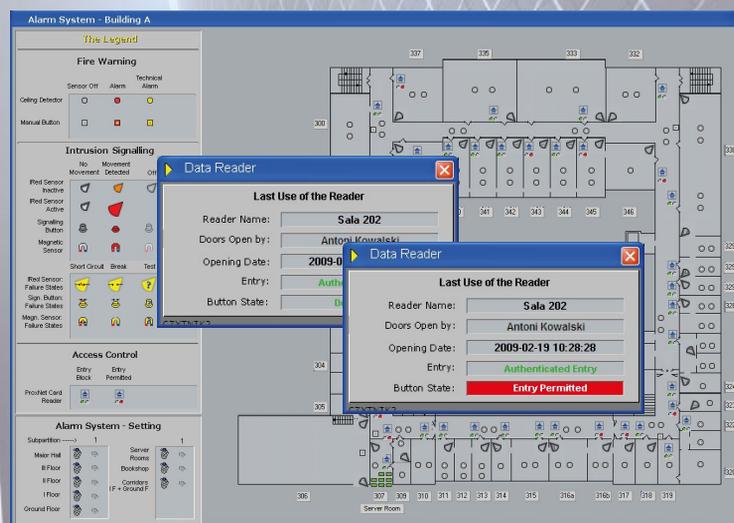
Integration the **Intrusion Prevention System (IPS)** and **Closed Circuit TeleVision (CCTV) system** with an Asix application makes it easier to supervise the object - the alarm activated by the burglary detector is visualized on the BMS screen, so violation of a protected zone is

immediately noticed by the supervising staff. In addition, the alarm is recorded into the Asix application database, which enables further post factum analysis of the situation. It is also possible to make in a fully automatic way the video from CCTV camera monitoring the violated zone immediately available to the BMS operator - that creates a new, higher quality in object supervision and is of particular importance for objects monitored by multiple cameras. Another advantage is the ability to call any video recording, registered in the CCTV system archive for post factum analysis, on the Asix application diagram.

Energy accounting in buildings with multiple users (office buildings, shopping centers) can also be integrated with an Asix system application. As a result, using the powerful archiving, reporting and calculating tools of Asix, one can easily control the flow of energy-transfer medium (central heating, electricity) and do settlement of recipients as well as analyze the structure of receipt. Moreover, the ability to store signals from the system infrastructure makes it possible to analyze the current state of fixtures and counters, making the maintenance work easier.

The additional function of the supervisory Asix application can be **remote notification** of important events recorded in the system. Particularly important alarms from any of the subsystems can be sent to dedicated users via an SMS or e-mail, accordingly to the pre-established time schedule and dynamically adapted list of recipients.

On the basis of the Asix package it is possible to create BMS systems that integrate devices using, inter alia, communication standards: BACnet, EIB, LON, M-BUS as well as a wide variety of devices using specific manufacturer protocols. In the operator layer, the system based on Asix can create multi-station structures in the LAN, and moreover, all or some elements of the system can be accessible by the web server.



BMS Systems Based on WAGO PLCs and Asix

When designing BMS systems, the richness of communication interfaces makes the Asix package ready to be used with multiple PLCs and dedicated systems, but of particular note is the possibility of applying the WAGO PLCs in the building automation area. Asix includes quite a number of components targeted for integration with WAGO PLCs which firmware performs pre-defined BMS installation control algorithms gathered in the procedure libraries available for immediate use by parameterization. In this way, WAGO provides libraries for control of: ventilation, heating, lighting, refrigeration automation and access control facilities and Asix completes it with the set of corresponding visualization objects. The ability to use pre-defined algorithms in the control layer and adequate components in the visualization layer greatly simplifies and speeds up the BMS system creation.

