



Feel comfortable in your building

Communication between DALI, KNX & BacNet



Implementation

Office building – Communication between DALI, KNX and BacNet

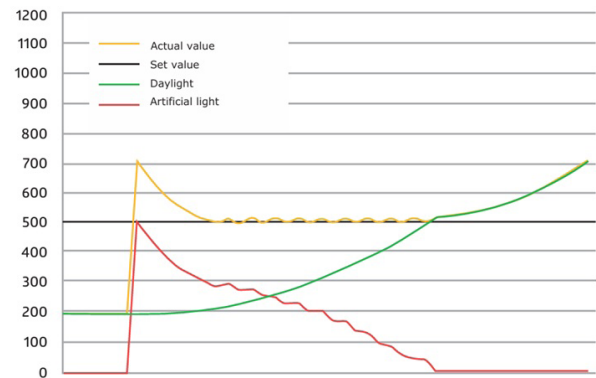
The client of a 34,500 m² office building approached us with the following requirements for their 8-storey building: The lighting is to be controlled via DALI, with remote access and visualisation also possible. The HVAC control system from a well-known manufacturer is to be controlled on an occupancy-based basis. This is to communicate with the DALI system via BacNet. In addition, the investor wishes to implement a general control and monitoring system that communicates via MQTT, thereby enabling, amongst other things, room booking.

A room control tablet is to be integrated into the conference and training rooms, allowing scenes to be selected, lighting groups to be controlled and an ECO mode to be activated.

Customised lighting for every need

Up to 16 scenes are to be implemented in the conference rooms (e.g. cinema, presentation, video conference, relaxation), which automatically control the light intensity and the position of the blinds. This ensures that the user always has lighting conditions tailored to their needs; for example, during a presentation, there is no glare on the screen, but the audience has enough light to take notes. Regardless of this, each lighting group should also be controllable manually in case the preset scene does not quite meet the user's requirements or no scene was intended for that purpose. Furthermore, energy is saved when the rooms are not in use, as the lights switch off when the presence detector no longer detects any movement. In Eco mode, daylight-dependent control is activated to ensure optimal lighting conditions.

This means that only as much artificial light is switched on as is needed to maintain the desired brightness level. If the amount of natural light changes, the amount of artificial light also changes automatically. This allows energy to be saved in addition to the presence-dependent control.



Daylight-Dependent Control

Variability and flexibility guaranteed

There will also be a day mode and a night mode (calendar function). In night mode, for example, certain areas can be illuminated for aesthetic or security reasons. It is popular to provide permanently dimmed lighting in the entrance area or stairwell at night. An RGB control system can also be used to create visually interesting accents. In addition to a large building visualisation, a slightly smaller visualisation is also required, allowing the technical building services team, for example, to check the status of lights or see whether a room is currently occupied, for instance to carry out maintenance.

Systems used: KNX

Products used*:

1000 x PD11-DALI-LINK

371 x PD4N-DALI-LINK

200 x DA64-230/KNX REG DALI-2

350 x PBM-KNX-DX-4W

15 x USB-IF/KNX REG

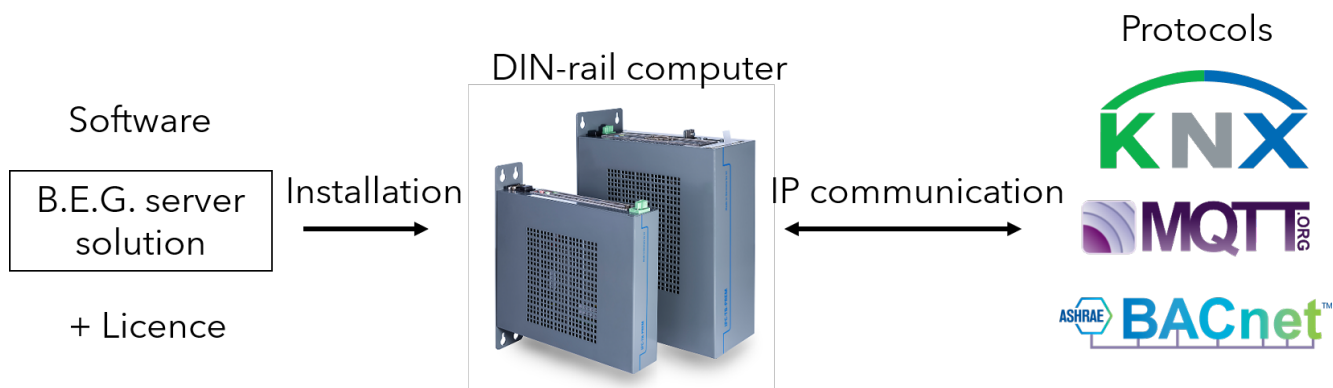
22 x PSN-230 / 640 / 30 / KNX REG

22 x LK-IP/KNXs REG

20 x UAD1-230/KNXs REG

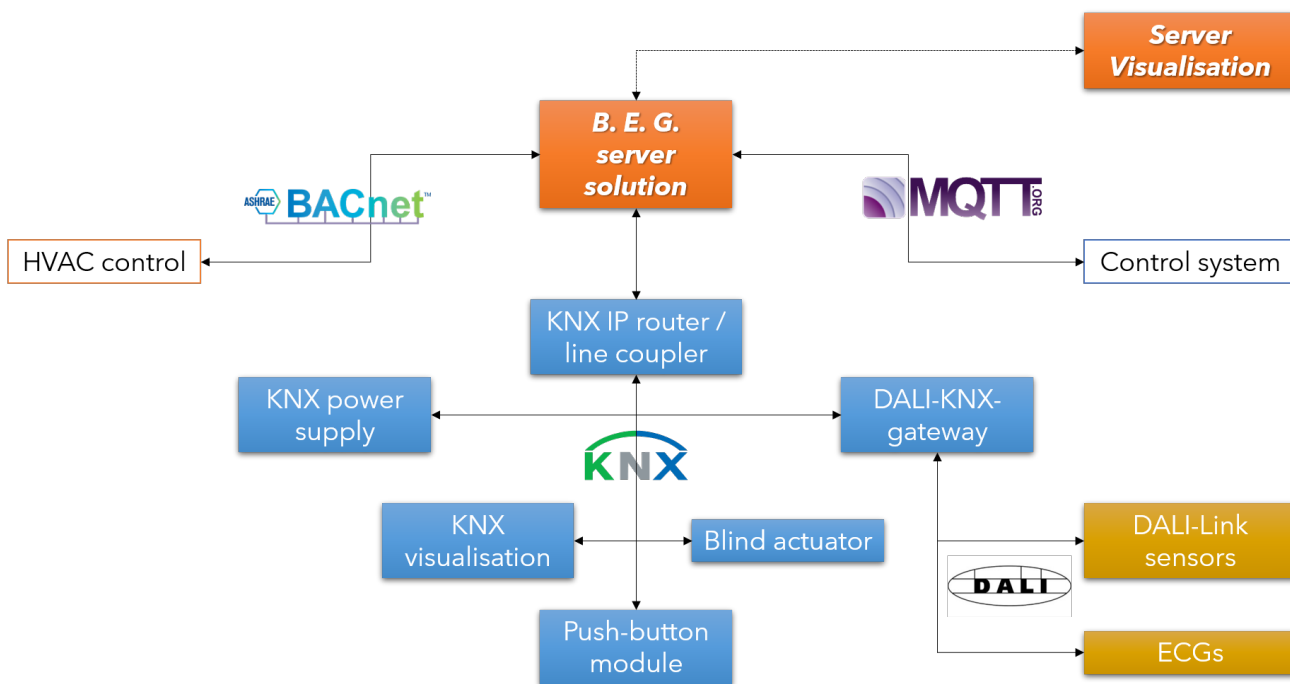
Furthermore, the room control tablet should also include additional functions, such as a booking assistant, air quality readings (indoor and outdoor), weather forecast, temperature, fan speed, lighting and shading. Where room control tablets are not used, push-buttons should be integrated to switch the lighting on and off and to dim it up or down.

This building requires the integration of multiple brands and protocols. As experts in presence detection and building automation, we have found a solution to achieve this using a server application designed and implemented by B.E.G., in conjunction with our KNX and DALI-Link devices.



The server solution features a multi-protocol gateway, which enables the combination of multiple protocol types. This means the server provides not only a complete

overview of individual buildings, but also of multiple properties. The server licences are flexible and can be tailored precisely to the customer's requirements.

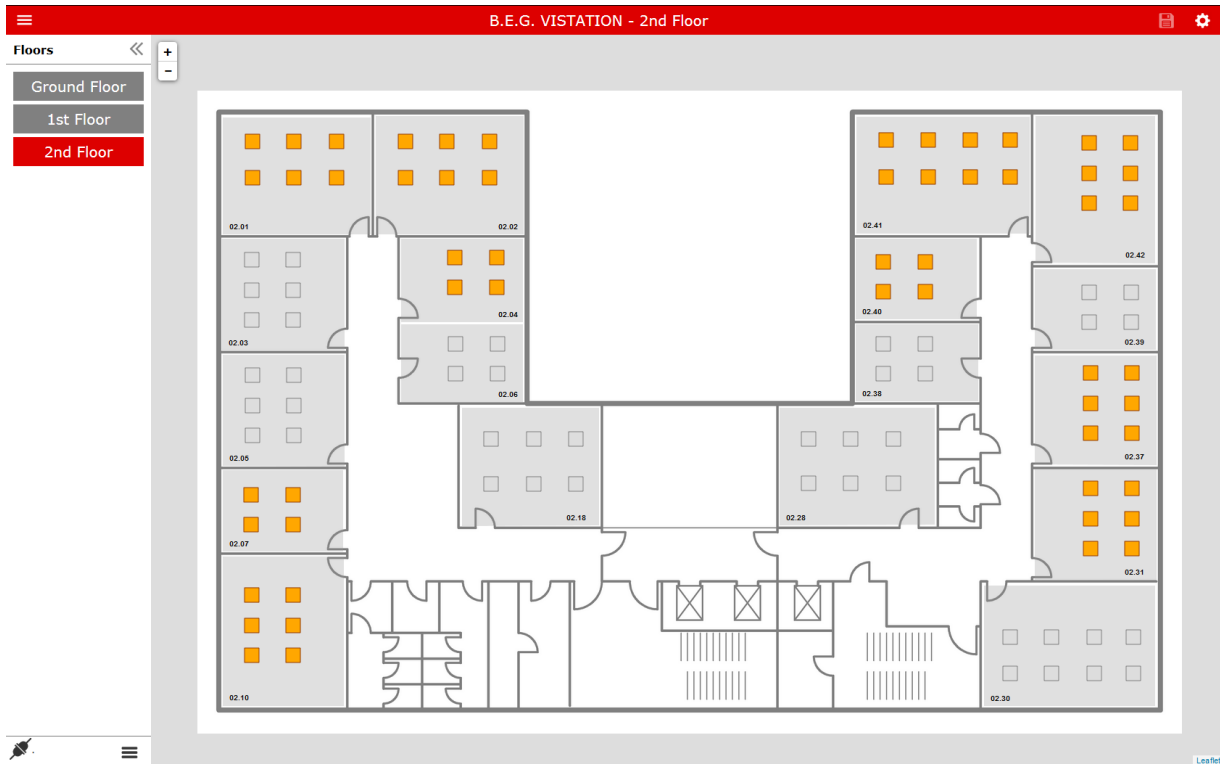


Implementation

More than 1,500 B.E.G. components installed

Our DA64/230/KNX-REG DALI gateways are used to establish communication via KNX with our DALI-Link sensors (light level and motion signals). The push-button interfaces for rooms without room control tablets and the blind actuators are supplied as KNX devices. To operate the KNX system, additional system devices such as power supplies, USB interfaces and KNX IP routers/line couplers, which are also manufactured by B.E.G., are installed. Specifically, this involves more than 1,000 PD11-DALI-Link presence detectors,

371 PD4N-DALI-Link presence detectors, 200 DA64/230/KNX-REG DALI gateways, 350 PBM-KNX-DX-4W push-button interfaces, 15 USB-IF/KNX-REG USB interfaces, 22 PSN-230/640/30/KNX-REG power supplies, 22 KNX IP routers and 20 SBA4/230/10/KNX blind actuators. In addition to the server visualisation, a 'small' KNX visualisation system is being integrated for the operating staff, enabling them, for example, to monitor the status of the lights via a computer or tablet.



Comprehensive service from B.E.G.

In addition to its products, B.E.G. Brück Electronic GmbH also offers system integration services upon customer request. This includes the planning and design of the topology, group addressing, as well as the programming and commissioning of the KNX system and the server solution. For us at B.E.G., excellent project support does not end with the construction of your property and the supply of products; we value long-term customer relationships and therefore

wish to offer more. We not only provide expert advice to support you during planning and implementation, but have also developed a comprehensive range of services for you. Our reliable support team answers technical queries of all kinds quickly and efficiently over the phone (+49 2266 90121 0). You can also contact the support team at any time via the contact form.

The following B.E.G. products were installed:

1000x



93068 PD11-DALI-LINK

371x



93377 PD4N-DALI-LINK

200x



93338 DA64-230/KNX REG DALI-2

350x



93365 PBM-KNX-DX-4W*

15x



90224 USB-IF/KNX REG*

22x



90214 PSN-230 / 640 / 30 / KNX REG

22x



90403 LK-IP/KNXs REG

20x





90225 UAD1-230/KNXs REG




Personal advice

Our team is always on hand to offer advice and assistance. If you have any questions about your order or our products, please give us a call or send us an email.

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