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Smart Spaces digitize office space and visualize the utilization

Jooxter: Smart building interoperability for a digital workplace

Microsoft: IoT security in the cloud

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The only way you can save up to 30% on building costs is if you have information on which areas are being used on a regular basis and which areas are unnecessary. Why should you pay 100% of the costs when only 70% of the space is actually being used? Of course, that's just a rough calculation, but I think it shows the huge potential of a smart spaces solution for simultaneously lowering costs, saving energy, and increasing employees' well-being. For example, employees can benefit from flexible hybrid working models thanks to desk sharing and flexible room booking.

If you browse through the latest edition of our customer magazine Perpetuum, you'll find lots of great examples of how smart spaces solutions work – all based on the maintenance-free, wireless energy harvesting technology from EnOcean.

Raoul Wijgergangs,
CEO of EnOcean

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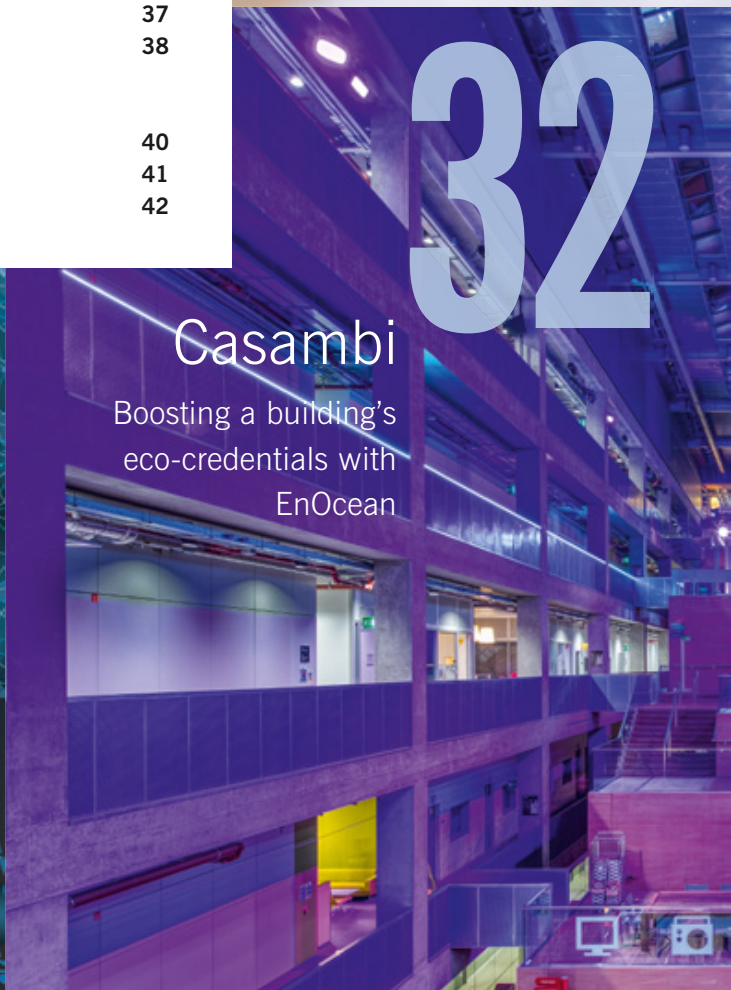

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Enlighted

Beyond the
smart office

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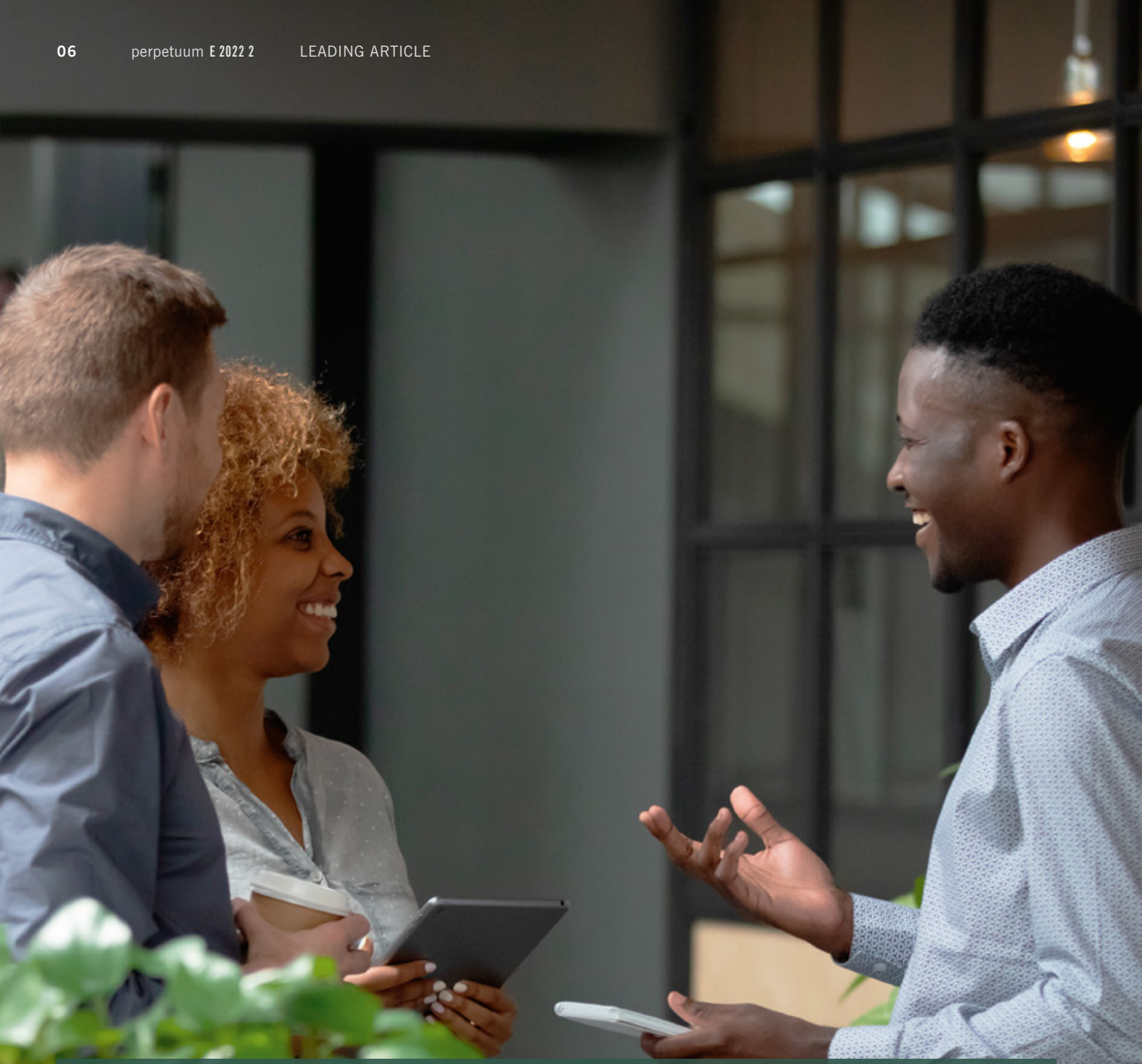


First COVID-19, then the energy crisis caused by the war in Ukraine – in both cases, buildings play a central role and pose unexpected challenges to facility managers, HR managers, and even private property owners. During the pandemic, the initial focus was on reducing the risk of infection in the workplace – for example, by measuring CO2 levels. Now companies are faced with the question of how to implement flexible workplace concepts cost-effectively. Due to the energy crisis, on the other hand, it's of the utmost importance that energy be conserved as quickly as possible. It's a well-known fact that buildings are responsible for 40 percent of global CO2 emissions and the corresponding energy consumption. By Armin Anders, Vice President Business Development, EnOcean

Smart spaces for less energy consumption, cost savings, and healthcare

Energy consumption slashed by 20 percent thanks to digitized office spaces

It's not surprising that the EU is targeting existing buildings as a means of achieving rapid savings. The goal is to reduce energy consumption by at least 15 percent throughout the EU by March 31, 2023. Simply taking colder and shorter showers won't do the trick. Apart from consumer behavior, what are the technical prerequisites for reducing the energy consumption of buildings?

Actually, the solution is obvious. In existing buildings in particular, which are often poorly insulated, the aim is to digitize areas and make them smart in order to identify the biggest energy consumers and take countermeasures. To put it simply, this approach requires sensors that record the current status as well as gateways or suitable WiFi access points that forward the sensor data to an IoT-based HVAC solution (heating, ventilation, air conditioning) that includes a smart radiator valve. With an intelligent, self-learning room control system, this can typically reduce heating energy by 20 percent per year, which translates to about 7,000 tons CO2/year.

The latest comparative calculations of amortization costs are interesting. At the current energy prices, the return on investment (ROI) of an IoT-based HVAC solution is around three years. By comparison, the ROI for energy-efficient window replacement is around 30 years, which is ten times as long. This means that IoT-based HVAC solutions are an ideal way to save energy quickly and cost-effectively. Let's get back to the political requirements. As of September 1, 2022, rooms in public buildings in Germany will be heated to a maximum of 19°C only. By saving historical data, it will be easy to prove whether this requirement has been met.

Cutting costs with desk sharing and flexible room booking

COVID-19 has caused quite a stir in the workplace. Many employees are happy to work from home, while others prefer a hybrid work model that mixes days at the office with days at home, and the remainder prefer to go into the office on a regular basis. As a result, space utilization has also changed significantly, with far fewer on-site employees now occupying the same amount of office space.

For companies, this raises the question of how they should deal with the different interests and how they can implement a flexible and dynamic model in the workplace. The digitization of spaces in the form of smart spaces solutions offers a targeted approach in this regard as well. Self-powered wireless sensors anonymously detect whether a room or workstation is occupied without the use of a camera. Based on this data, an employee app indicates which tables or rooms are currently occupied in real time. Employees are able to make a reservation if desired. For example, if meeting rooms are booked but then not used, the app releases them again based on the feedback received from the sensors.

In addition to this desk-sharing option, an IoT-based smart spaces solution also offers many more insights into the actual use of office space. It's not just the utilization that has changed, but also the demands placed on the space. The focus is increasingly shifting to options that allow for personal interaction and collaboration as needed, as well as to smaller quiet rooms where employees can occasionally work and make phone calls without being disturbed. For many employees, this means that a fixed workstation is

becoming a thing of the past. Using the anonymous occupancy data acquired, the solution can automatically analyze whether there are enough meeting rooms and quiet rooms and which rooms are always booked or aren't being booked at all. This enables office managers to selectively analyze whether the facilities or equipment are inadequate.

ROI calculations also exist for desk-sharing solutions. These calculations show that the ROI is already achieved within just a few weeks of the consistent introduction of a sensor-based smart spaces solution!

Desk sharing offers huge financial and environmental benefits because companies can typically reduce the number of existing workstations by 25 percent. This allows them to downsize their office space, thereby reducing rent and heating costs and cutting maintenance costs.

For employees, desk sharing is about more than just greater flexibility in terms of working hours. Employees are able to choose their workspace based on their current requirements – for instance, if they need to work with specific colleagues or if they prefer to retreat to a quiet area. In addition, companies can easily add comfort and well-being for employees to the modular smart spaces solution and enjoy further savings on heating costs for the remaining spaces.

Savings of 200 million euros/year per 100,000 employees

8,140 euros
Operating costs per workstation per year

Office rent, equipment, usage costs, maintenance [1)]

Total number of workstations reduced by 25% [2)]

1) European average, see "Bürokostenreport 2019" (2019 Office Expense Report) by www.facility-management.de
2) E-Shelter 2021

Well-being in the workplace

At first glance, the term "well-being" might suggest some sort of luxury measures in the workplace or spa-like conditions. In the context of smart spaces, however, it refers primarily to the room climate and addresses the fact that if the air quality in a room is poor due to a high level of CO2, the productivity of those present decreases. Everyone has experienced the feeling of increasing fatigue and an inability to concentrate during a long meeting.

Wireless sensors that monitor indoor climate based on parameters such as CO2 levels, temperature, and humidity ensure good

working conditions and productive employees. A study by researchers from Harvard, SUNY, and Syracuse quantified that participants working in conditions where CO2 levels were at their highest performed 50% worse on cognitive tasks than in a scenario where CO2 levels were low.[3] Particularly during the pandemic, air quality warrants special attention. A higher CO2 level means more stale air in the room, which correlates with a higher potential viral load. If even one less employee gets sick, it automatically means a significant gain for the company. To reduce the risk of contagion in the workplace, companies can use a sensor that regularly measures CO2 levels and provides feedback, for instance, via a display or app. Historical data stored in the cloud also shows working conditions over a longer period of time.

Sustainability requires no batteries

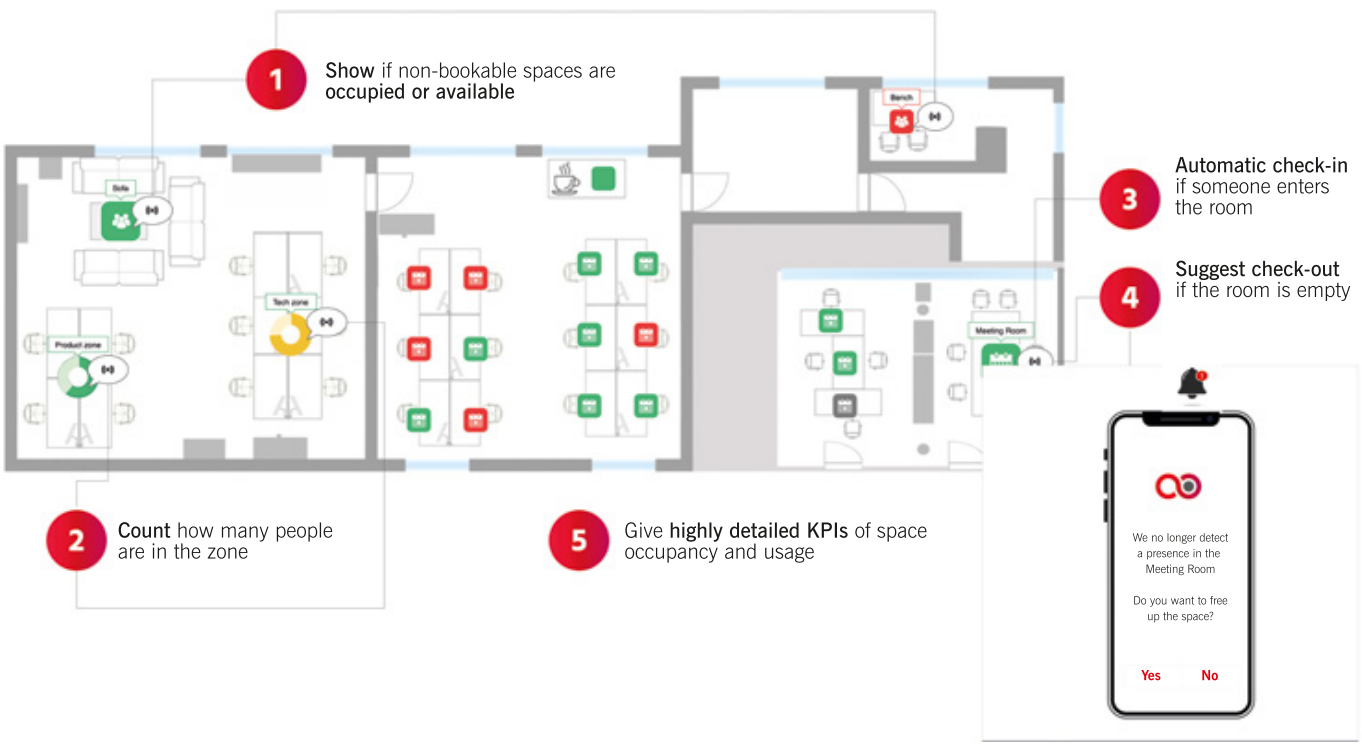
A modular smart spaces solution uses a holistic approach that combines energy conservation, desk sharing, and well-being. Wireless sensors make it easy to retrofit existing buildings because they eliminate the need to run cables. Wireless technology alone, however, doesn't solve all the problems. The sustainability of this kind of solution needs to be factored into the selection process. If a sensor requires a battery, the resulting maintenance service involves a significant amount of time and follow-up costs. Because early failures are particularly annoying and expensive, professional IoT service providers replace all system batteries every year as a precautionary measure, even if they could theoretically last longer. For this reason, sustainable sensors are self-powered, which makes them environmentally friendly, and they ultimately save a great deal of time and money. The sensors obtain the energy they need for data collection and wireless transmission directly from their immediate surroundings by means of energy harvesting – for example, from a small solar cell, temperature differences, or a mechanical press of a button.

www.enocean.com

3) https://www.hsph.harvard.edu/news/press-releases/green-office-environments-linked-with-higher-cognitive-function-scores/

Smart building interoperability for workplace

In this new era, our way of working has undergone a dramatic shift toward the hybrid work model. Contrary to what many companies thought, the world has discovered that much of our work can be done from home and, with the wide variety of tools available, communication between employees can be as easy and effective as it is in the office. This offers employees a great deal of flexibility and autonomy within their work schedule. By Fabien Girerd, CEO, Joooxter



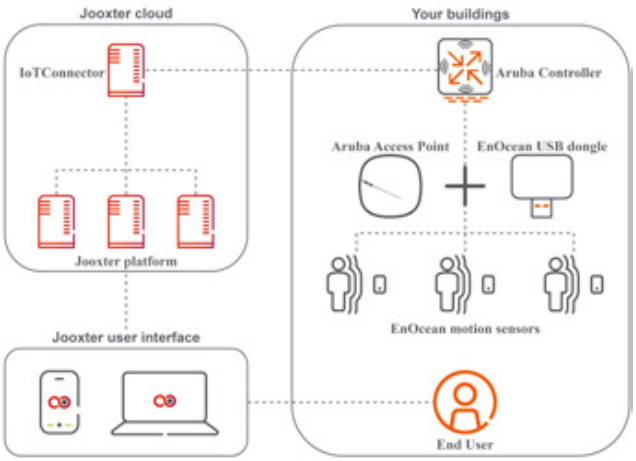
Joooxter is a leader in workspace management and a forerunner in the implementation of hybrid work and flexible offices. It offers a solution that helps employees find the perfect workspace and enhances collaboration between staff.

Via the web or mobile app, employees can easily visualize which resources are available and book a desk in the office, let their colleagues know whether they'll be working in the office or remotely, and locate employees with whom they want to organize a meeting or collaborate at adjacent desks.

When EnOcean sensors are connected to the existing IT infrastructure network, companies and their employees are able to find out which spaces are actually being used and which are available in real time. This allows employees to save time on the job and helps companies to optimize their workspace based on tangible data.

a digital

Here's a sample infrastructure:



Key benefits:

- **Improved user experience:** Employees are autonomous and can find the space they need at any time with just one click. Building managers can make informed decisions based on tangible, real-time occupancy data.
- **Interoperability:** Cost-efficient solution that makes direct use of the existing IT infrastructure to connect IoT sensors to the Jooxter cloud platform.
- **CO2 reduction:** Self-powered sensors. AI algorithms serve to optimize space occupancy in order to achieve maximum space usage while enabling significant energy savings.
- **Scalability:** The same solution can be deployed on a large scale anywhere and in any type of building without the need to install a specific network for IoT sensors or perform a complex setup at each site.

www.jooxter.com

IoT security in

For many companies, saving data in the public cloud is a step that is often coupled with security concerns, especially when it comes to business-critical data from development or production. Many companies choose to operate a private cloud instead. The expectation is that internal hosting will pay off in terms of data security, despite the considerable additional expense.

By Helge Schroda, Business Lead Cybersecurity, Microsoft

As a provider of security solutions, Microsoft has a holistic view. Whether in a company's own data center, with data center operators, or in the public cloud such as in Azure, the goal is to achieve the right level of alerting and an effective response to detected incidents.

Zero Trust security concept

Zero Trust is what Microsoft calls the approach that is seen throughout the industry as the framework for cutting-edge security. Despite the above-mentioned concerns, infrastructures are increasingly shifting to the cloud. Applications that used to be run in in-house data centers now frequently come directly from a provider to the user as a software-as-a-service (SaaS) application via the browser or as an app. If the logins to these applications, the data, the workflows, and the authorization requirements shift to the cloud, then the security requirements must adapt to these changes as well. In addition, many formerly "atypical" devices, such as IoT sensors, require a connection to the cloud.

Security in IoT projects

For IoT projects such as desk-sharing models and the associated digitization of buildings, it is ultimately of secondary importance where the data is processed and stored. What is important is that the entire process is secure, starting with the sensors and the transfer of sensor data via a gateway or Wi-Fi access point to the cloud, and ending with data analysis in apps. Security starts with the encryption of the sensor data. For its wireless sensors, for example, EnOcean relies on data security by means of rolling code and AES-128 encryption.

The weakest link in the chain determines the level of security. Most recently, effective attacks have often come from supply chains, via production facilities (operational technology), and from the Internet of Things (IoT). Microsoft is addressing this aspect with Defender for IoT, which integrates seamlessly into the cybersecurity platform. Ultimately, the signals from administrative IT, from the various data centers, and from IoT and OT are brought together on the Microsoft cybersecurity platform to provide a holistic view of the security of all systems for our customers and partners.

Comprehensive threat analysis

Using large cloud-based systems, artificial intelligence, and machine learning, various Microsoft teams analyze data volumes that add up to nearly 25 trillion signals per day. This serves as the basis for analyses through which cybersecurity incidents are detected and processed across the board. The volume of signals is growing exponentially, especially

the cloud

due to the multitude of IoT devices and other devices connecting to cloud systems.

Although Microsoft's products are designed to work with each other in a highly integrated way, the expectation is that this integration exists not only with all Microsoft products, but also with the products of other manufacturers. The basis of the findings lies in countless logs. The task is to capture them correctly, superimpose them, and draw the right conclusions from the analysis. This is the only way to detect, classify, and attribute attackers and ultimately combat them effectively.

Due to their security features and capabilities, state-of-the-art cloud infrastructures have become a safe haven for data and a secure foundation for the delivery of complex applications and workflows. The monitoring, detection, and handling of security incidents are faster and more precise than ever before. As a result, there are no security concerns standing in the way of IoT projects such as the digitization of spaces and buildings.

www.microsoft.com

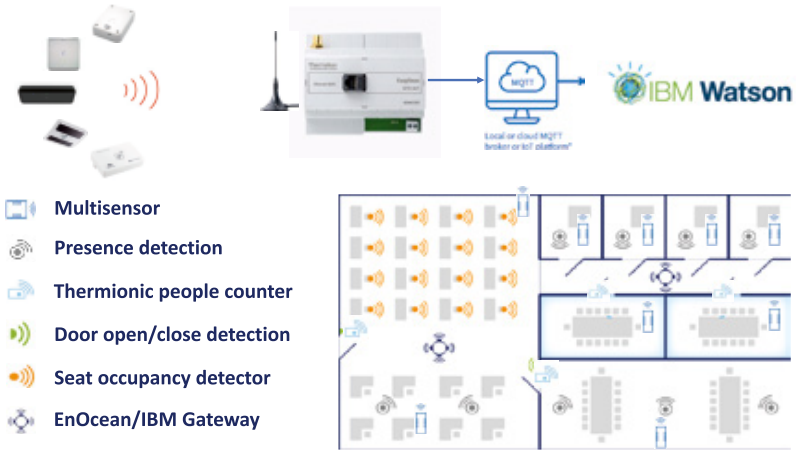
Self-powered IoT solution implemented at

When IBM joined the EnOcean Alliance as a Promoter Member in 2016, it significantly expanded the EnOcean Alliance and strengthened its program in building automation and the Internet of Things. The EnOcean Alliance and IBM are working hand in hand to define and expand the standards for self-powered solutions for the IoT.

Recently Interfühler's EnOcean-based solution was successfully implemented by the IoT retrofit project for IBM's Guangzhou office. The project is located in the core area of Guangzhou CBD - GT Land Plaza, which will be the iconic core of Guangzhou in the future.

By Marketing Department, Interfühler Automation (Shanghai)

IBM Guangzhou



Solution for IBM Guangzhou

Interfühler received a project inquiry from the customer that called for the integration of various sensors in the office area of IBM's Watson IoT Platform, including workstation sensors, indoor temperature and humidity sensors, air quality sensors, people counting sensors, water leakage sensors, UPS alarm sensors, etc. The aim was to create a self-powered, EnOcean-based sensor solution that enables maintenance-free building management, and to improve the operational, financial, and environmental performance of facilities.

Thanks to the blueprint created by EnOcean and IBM for the IBM Watson Center in Munich, Germany, as well as the Interfühler team's extensive experience with implementing the EnOcean solution in China since 2009 – including many large-scale projects such as JP Morgan Chase, BMW Factory, National Exhibition and Convention Center, etc. – Interfühler's proposal was quickly submitted and approved.

The project mainly uses desk occupancy sensors to detect the occupancy status of workstations. This type of sensor is increasingly popular in applications for optimizing building efficiency, such as analyzing workstation utilization and quickly searching for vacant workstations. Multisensors for indoor temperature and humidity, CO2 & VOC, and formaldehyde also serve to ensure a healthy and comfortable office environment in real time. In addition, occupancy sensors and people counting sensors are used to detect the occupancy status of public areas, such as conference rooms, storage rooms, and cafeterias. All this sensor data can be uploaded directly to the cloud via the IoT gateway and can also be linked to the localized lighting and air conditioning system via a KNX gateway in order to improve the comfort level and minimize energy consumption.

Challenges

One of the challenges of this project was to integrate the existing third-party UPS and water leakage alarm information via the main controller so that alarms could be sent to facility managers via e-mail and SMS. A Modbus RTU/EnOcean bidirectional gateway was adopted so that the Modbus alarm information from the old system could easily be forwarded via EnOcean, thus realizing the perfect integration of all the new and old systems.

Self-powered wireless solutions

Thanks to the sub 1 GHz band (ISO/IEC 14543-3-1X), the EnOcean wireless standard is perfectly suited to use in building automation and smart homes worldwide. In contrast to other wireless products that require batteries with their associated maintenance problems, EnOcean-based devices are self-powered and enable a "fit and forget" sensor solution. Energy harvesters gain energy from the surrounding environment, including motion, light, and temperature differences, to power wireless modules. This energy harvesting principle makes the devices maintenance-free.

Connected to the cloud

The IBM Watson IoT Platform is a fully managed, cloud-hosted service that makes it simple to build and deploy apps for IoT devices, sensors, and gateways. When combined with the IBM Bluemix® environment and secure Watson APIs, the platform allows integration and performs predictive, cognitive, and contextual analytics to improve decision making. Organizations are able to connect devices easily and securely, from chips and intelligent appliances to applications and industry solutions. The IBM Watson IoT Platform is scaled by means of cloud-based services and uses rich analytics, thus providing organizations with new insights that support innovation and transformation. IBM TRIRIGA serves as a single system for managing facility lifecycles.

This project in Guangzhou is the first implementation of EnOcean technology and an IBM cloud service integration solution in mainland China. The solution has a variety of use cases such as asset management, ambient assisted living, and insurance, hotel, and campus projects.

www.enocean-alliance.org

Sustainability has many

With the 17 Sustainability Development Goals (SDGs)*, the United Nations has defined goals to facilitate a healthy and sustainable development for people and the environment. In smart cities, there are many starting points for pursuing these goals with technologies that are available today. BSC Computer has been implementing innovative, maintenance-free IoT solutions based on battery-free EnOcean technology since 2004.

By Jörg Hofmann, Managing Director, BSC Computer

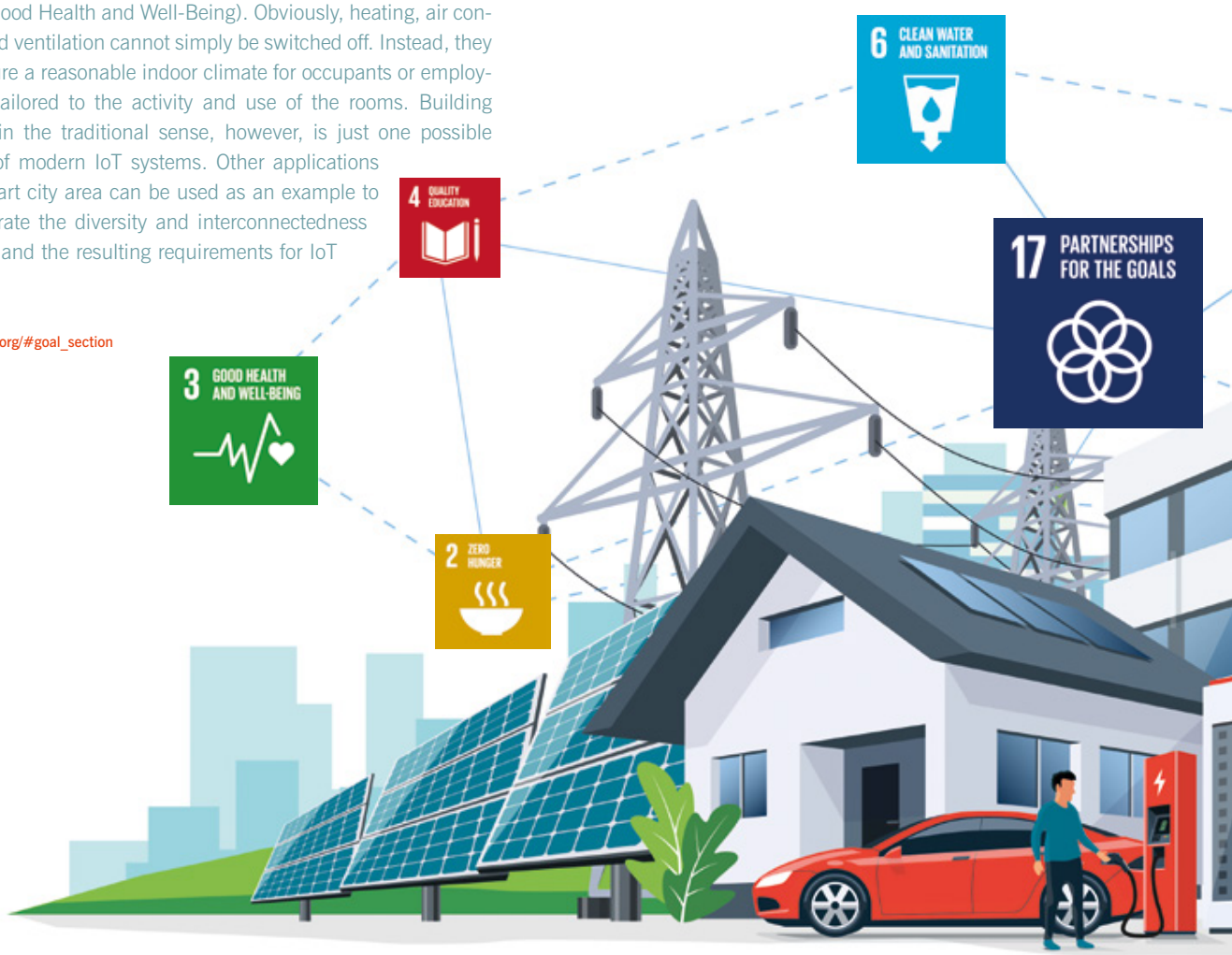
Energy efficiency through automation

Conserving energy in buildings and industrial facilities by digitizing processes is a goal that is easy for everyone to understand and can be found, for example, in SDG number 7 (Affordable and Clean Energy) and SDG number 11 (Sustainable Cities and Communities). However, there are also seemingly competing goals, such as SDG number 3 (Good Health and Well-Being). Obviously, heating, air conditioning, and ventilation cannot simply be switched off. Instead, they need to ensure a reasonable indoor climate for occupants or employees that is tailored to the activity and use of the rooms. Building automation in the traditional sense, however, is just one possible application of modern IoT systems. Other applications from the smart city area can be used as an example to further illustrate the diversity and interconnectedness of the SDGs and the resulting requirements for IoT solutions.

* https://sdgs.un.org/#goal_section

Secure food supply

For example, SDG number 2 (Zero Hunger) addresses the issue of food security. Developed by BSC in 2008 in collaboration with the innovative pest control company Futura, EnOcean-based digital animal traps are used in many food processing projects to help keep pests away. By consistently digitizing the business model, this IoT

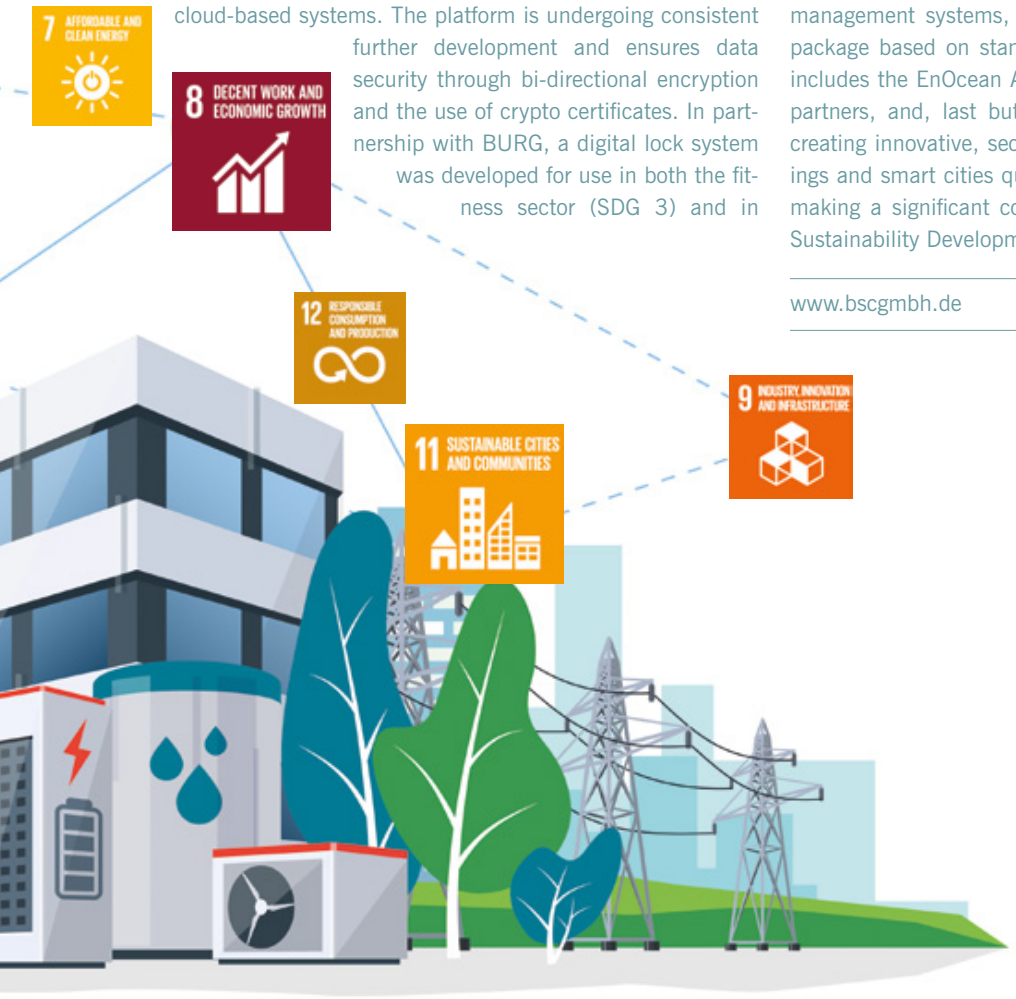


interconnected dimensions

solution reduces the use of resources (fewer rodenticides, fewer inspection visits, maintenance-free systems) as called for in SDG number 12 (Responsible Consumption and Production). In addition, because the systems are used in buildings and prevent the spread of diseases, they automatically contribute to the above-mentioned SDG numbers 11 and 3. Other IoT applications related to this topic include the monitoring of cold chains as well as the use of sensors in food production.

Dare to innovate more

SDG number 9 (Industry, Innovation and Infrastructure) describes goals for the sustainable further development of industry. Motivated by a collaboration with a window handle manufacturer in 2004, BSC was one of the first members of the EnOcean Alliance to recognize the relevance of data generated by sensors in IoT solutions. The BSC Connect solution created a platform for the processing and management of EnOcean-based applications in edge- and cloud-based systems. The platform is undergoing consistent further development and ensures data security through bi-directional encryption and the use of crypto certificates. In partnership with BURG, a digital lock system was developed for use in both the fitness sector (SDG 3) and in schools (SDG 4, Quality Education), as well as in locker systems during the implementation of new workplace models (SDG 8, Decent Work and Economic Growth). Data authenticity and security also play a role in other applications, such as networked leak sensors and valves for water management in support of SDG number 6 (Clean Water and Sanitation).



A strong partner network is required

BSC implements digtalization solutions in a partner network, and for this there is also SDG number 17 (Partnerships for the Goals). Based on EnOcean energy converters and communication components and using the EnOcean wireless standard for communication, BSC Computer digitizes the products and processes of its partners. With the mechatronic integration of the energy converters and wireless circuit boards in sensors and actuators and the extension to cloud integration and integration of the data in customer-specific management systems, the company offers a full-service carefree package based on standard components. A partner network that includes the EnOcean Alliance, Aruba, universities, manufacturing partners, and, last but not least, the solution provider itself, is creating innovative, secure digitalization solutions for smart buildings and smart cities quickly and in a resource-optimized manner, making a significant contribution to the implementation of many Sustainability Development Goals.

www.bscgmbh.de

Onboarding IoT devices on secure IT networks

Building owners and tenants are rapidly transforming workplaces into energy-efficient smart spaces. This has amplified a problem that has long faced the building controls market: How do you onboard IP-based EnOcean controllers, displays, and protocol converters onto a building's secure IT network? A rash of high-profile security breaches that originated in IoT devices has put Chief Information Security Officers on high alert, and restrictions against adding an IoT device to an IT network without first passing a cybersecurity review are intensifying. By Michael R. Tennefoss, Vice President of IoT and Strategic Partnerships, Aruba, a Hewlett Packard Enterprise company

Even if a device passes a cybersecurity review, getting it onto the IT network can be tedious. If a device's user interface wasn't designed with IT networks in mind, then configuration options might be missing. Security certificate management can become a Catch-22: A device has to be on the network to receive a security credential, but it can't be on the network without a credential installed. Some companies solve the latter problem by sending secret credentials over an unprotected open network, but that obviously poses its own risks.

Device Provisioning Protocol for secure onboarding

The Device Provisioning Protocol (DPP), certified under the Wi-Fi Alliance as "Easy Connect," is a standard that allows devices to be easily provisioned onto a secure network using simple, modern techniques such as QR code scanning. This solution replaces Wi-Fi Protected Setup (WPS), a hugely popular onboarding solution that unfortunately had significant security gaps due, in part, to its reliance on inadequate and outdated Wi-Fi encryption services such as Wi-Fi Protected Access (WPA).

DPP addresses this gap by leveraging WPA3 and enhancing certificate handling to provide robust, secure, and scalable provisioning of IoT devices in any commercial, industrial, government, or consumer application. DPP also supports legacy WPA2 connections. Designed to accommodate devices with or without a user interface, each DPP-enabled device is manufactured with an elliptic curve public/private key pair. The device can be brought onto a network via many paths, but the most common is by scanning a QR code on the device using a smartphone. The QR code contains the public key and, optionally, the device's MAC address and serial number.

DPP leverages WPA3 elliptic curve cryptography to achieve better cryptographic strength with smaller keys and less processing power than was previously possible. That, in turn, lowers the device cost.

There are four steps to onboarding an IoT device onto an IT network using DPP, and the entire process can be completed in seconds:

- **Bootstrapping:** The device shares a public key that is bound to a unique private key;
- **Discovery:** Unprovisioned devices are identified by the DPP-enabled network infrastructure;
- **Authentication and configuration:** A request-response process authenticates the device and the configuration service, following which a security role and group are assigned to the device;
- **Network access:** An Aruba Wi-Fi access point or wired controller advertises the availability of a DPP network. The device and the network exchange keys and separately derive an authenticated Pairwise Master Key (PMK). If each side generates the same PMK, the device is allowed on the network.

Problem solved

DPP can run via Wi-Fi and Ethernet, addressing the vast majority of smart building applications. Cellular-enabled devices can also obtain Wi-Fi credentials via DPP, which allows mobile devices to move between cellular and Wi-Fi networks.

DPP QR codes can be scanned individually or batched. Individual scanning is ideal for smaller sites and when a device is being replaced. Batched scanning is perfect for a large upgrade and when commissioning a new site.

Finally, DPP eliminates the need to configure security credentials over an open network, thus closing a significant security gap. Once manual steps are eliminated, installation can proceed more quickly and without IT-skilled labor.

Summary

If you need to deploy IP-based EnOcean controllers, displays, or protocol converters on a secure IT network, DPP is the answer. DPP speeds up installation time, closes the security gaps of earlier provisioning systems, and meets the high standards set by CISOs by using WPA3 and other security mechanisms.

www.arubanetworks.com

EnOcean sensors for smart spaces

Smart spaces equipped with sensors not only make it possible to collect data about the office environment and occupancy status at any time, but also enable automatic indoor climate adjustment, room or workplace booking, and the generation of service work orders. WinShine has developed several new sensors for smart spaces that offer new options for facility and office management.

By Marketing Department, Nanjing WinShine Network Technology

Desk occupancy sensor

The extremely compact desk occupancy sensor – the main body measures only 64 x 31 x 15 mm and weighs 24 g including battery – can be easily installed under the desktop. It covers a maximum of about 2 square meters. Additionally, the angle of detection and the range can be adjusted to reduce possible interference from adjacent spaces.

Occupancy sensor

The sensor unambiguously detects whether a room is occupied, even if the people present hardly move. It does this by measuring the temperature change in certain areas and then sending a signal indicating whether they are occupied or vacant. The sensor automatically adapts the reference temperature to the change in ambient temperature to improve the accuracy of the measurement.

Two-way people flow sensor

WinShine`s two-way people flow sensors, which are installed on the top or side of entrances and passageways, collect data on the movement of people even if they move in different directions. EnOcean data telegrams are sent to the platform via a gateway. The software then delivers statistics and data analyses. The absence of a camera in the design also complies with privacy regulations.

Multifunctional environmental sensor

The new environmental sensor measures eight parameters: temperature, humidity, CO2 concentration, volatile organic compounds (VOC), the particulate matter groups PM1, PM2.5, and PM10, and noise. The sensor is also equipped with a ring indicator light that is green when the environment is normal and turns red when a parameter exceeds specified values.

www.win-shine.com

Beyond the smart office

Enlighted Building IoT Platform is installed in over 410 million square feet of buildings worldwide. It is wireless lighting control that pays for itself through the energy savings it generates. Smart sensors capture information about what is happening in the building and send it to a data platform that drives analytics and intelligent software applications. Applications from Enlighted and partners improve operating efficiencies and occupant experience, enhance productivity, and optimize resource and asset use.

By Carolyn Pensa, Partner Marketing Manager, Enlighted

About five years ago, the company was working on first-generation smart workplaces that were designed primarily to achieve cost reductions. This smart infrastructure now represents a foundation on which more transformative solutions can be deployed for the "new normal" working environment.

Sensors as key to the smart office

The Enlighted Smart Office is an office that's transformed into a space that acts as an assistant to building occupants, facility managers, and workplace experience planners. At its core is intelligence based on data about what's happening in the building in real time.

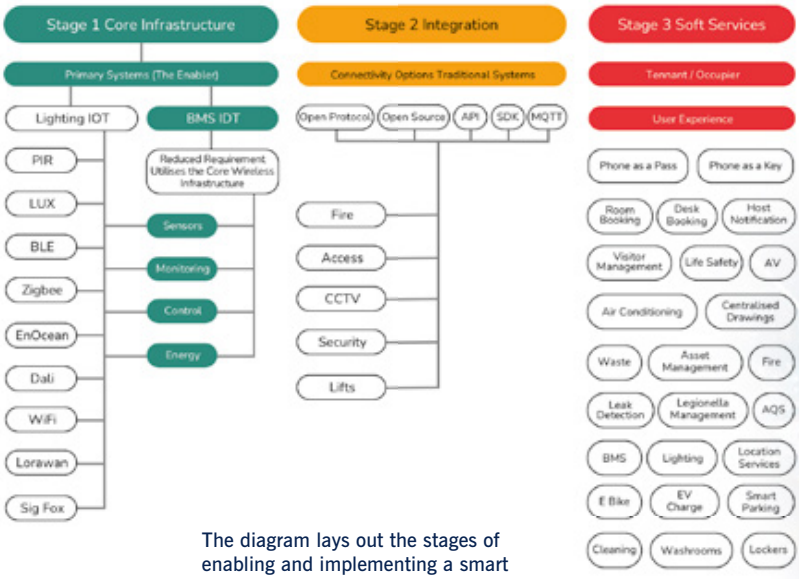
Enlighted's IoT platform is an open system that integrates third-party devices and software. The battery-free, wireless light switches from EnOcean provide all the room control features needed for an Enlighted system installation. The total cost of ownership is reduced because the need to run wires and replace batteries over time is eliminated. These switches interact with the Enlighted system via Bluetooth and work with Enlighted Connected and Enlighted IoT sensors.

For example, Enlighted's lighting-based IoT sensors digitize the office by gathering a rich and continuous stream of data from every inch of the space. This data creates powerful insights and analytics, including space utilization and analytics for real estate optimization, and can provide real numbers when future decisions are made about what space is needed for the office and how the space should be used.

www.enlightedinc.com

EQUANS connects people, places and things

As the world of the Internet of Things evolves, it will increasingly be a matter of how a building is prepared for this level of integration and connectivity. At 12 King St. in Leeds, UK, the building owners decided to enable a smart building, effectively disrupting the way a building is put together. EQUAN's part was to enable the core infrastructure with sensors and switches. This process was managed in sections. By Mark Davenport, Director Smart Buildings, EQUANS UK & Ireland



The diagram lays out the stages of enabling and implementing a smart building

Once EQUANS had enabled the building, it was possible to integrate all the systems so that they could communicate regardless of protocol.

A truly future-proofed building

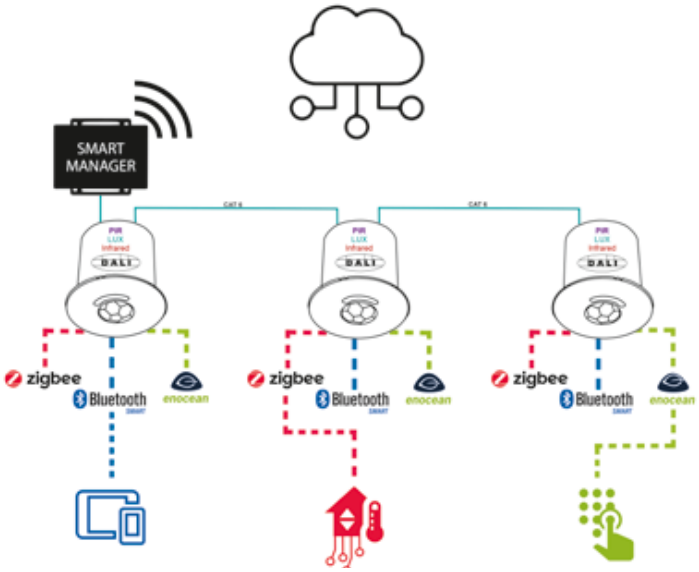
The building is now equipped with a network of Smart Multisense devices that provide the infrastructure as well as cross-functional management of the different systems. The Multisense is a ceiling-mounted PIR sensor made by EQUANS with additional integrated sensors. It can also be integrated in EnOcean networks and allows other remotely mounted EnOcean devices to talk to the Multisense and forward the data to the overall network. The network primarily controls building lighting using the standard lighting functionality. All the connected data is then forwarded to the other systems on the integration platform.

The network at King St. is the largest of its kind in the world today. The platform is built

using all open-source products – both hardware and software – thus ensuring that there is no vendor reliance or tie-in and creating unlimited backward compatibility.

Multisense device

The Smart Multisense is a unique sensor that houses several different technologies, such as PIR, LUX, EnOcean, Zigbee, Bluetooth Low Energy (BLE), Dali, and Modbus, within a single product. The network is managed via a Smart Manager, which provides the system with further connectivity options in order to allow enhanced connectivity to other system protocols like WiFi, BACnet, RS485, USB, and IP.



Cybersecure-ready

The system is permissions-based, meaning that cybersecurity management of the system is prioritized to ensure that only the right people with the right permissions are allowed to access the managed data lake.

User journey

Once the infrastructure is enabled, user journey opportunities are endless and each journey can be customized to the individual. These journeys can be adapted to any building user, whether occupants, visitors, facility managers, or owners.

Intuitive configuration tools

System setup and configuration have been totally deskilled, thanks to the powerful setup tool Z3roConfig. This tool is an intuitive application that guides you through the setup and configuration of the network and connected devices. Just download the app, power up the devices, and you're good to go.

Digital automated intelligence

The system has features that provide powerful operational tools for the building via the integrated network. It can run automated service routines that use the granular sensing data to provide analytical reports on each connected asset. The system is able to access the centralized drawings application and identify a fault, provide detailed asset information, and guide the engineer to the exact coordinates within the building. It can also check stock levels for the failed component.

With this infrastructure, EQUANS is able to seamlessly connect people, places, and things as well as enable highly effective interaction between systems.

www.equans.com

Haneda

HANEDA INNOVATION CITY (HICity) near Tokyo, Japan, has decided to test various IoT solutions using EnOcean sensors developed and implemented in a cooperation project between the three companies NTT East, Marubeni Information Systems, and Nifco. The project serves as a basis for pomoting further synergistic effects for the development of smart cities through collaboration between companies with different areas of expertise.

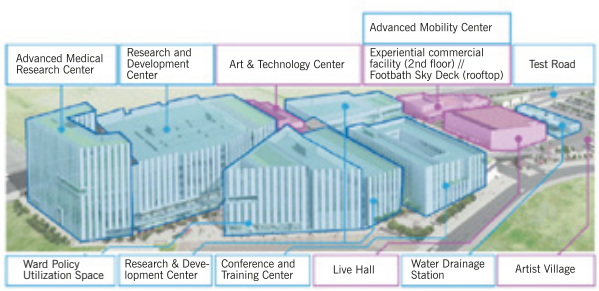
By Takaaki Nakamura, Kounosuke Hirono, Naoya Takeda, Takero Ishii, Shuhei Matsuoka and Hideyoshi Suzuki, Nifco Inc.

What is HICity?

HICity is a large-scale complex of research and commercial facilities being built in Zone 1 of the former Haneda Airport site in accordance with the Ministry of Land, Infrastructure, and Transport's "Haneda Airport Site Urban Development Promotion Plan." The aim is to create a future-oriented and intelligent city.

Research and development facilities, a medical research center, a conference hall and an event hall, facilities for Japanese cultural events, restaurants, accommodation facilities, and hydrogen stations will be built on the approximately 5.9-hectare site.

By cleverly arranging companies from a wide range of industries along an innovation corridor that interconnects the buildings, the city aims to stimulate cross-industry exchange and thus create a framework for new ideas and innovations.



Innovation City with EnOcean

Cooperation project between HICity and NTT East, Marubeni Information Systems and Nifco

Cooperation project for smart cities

HICity serves as a test site for the cooperation project between NTT East, Marubeni Information Systems and Nifco. The goal of the project is to create smart cities that incorporate battery-free devices. Special sensors and services for a variety of areas are being developed for this purpose. This can only succeed if different companies create synergies and work together to offer users real added value through coordinated services. Among other things, the wireless sensors use EnOcean's energy harvesting technology. This means that the sensors are self-powered and require no cables or batteries. For facility management, the following IoT applications are possible in the buildings:

- Visualization of air conditioning status like temperature and humidity
- Visualization of CO2 concentration and ventilation instructions
- Visualization of vacant and occupied workspaces
- Visualization of restroom management for smart cleaning
- Visualization of parking lot availability
- Verification of evacuations
- Energy savings when building spaces are remodeled
- HACCP measures for restaurants (food hygiene management)
- Visualization of shared bicycle spots

Several of the collaborative project's test installations are already running nationwide in Japan. For HICity, the proofs of concept (PoCs) were adapted and several demonstration tests were conducted to show the benefits not only to a Japanese but also to an international audience.

www.nifco.co.jp

Visualization of parking lot availability

Visualization of vacant or occupied spaces

Visualization of shared bicycle spots

A neighborhood for

Since 2016, the smart building system from Zuhause Plattform, which uses self-powered EnOcean sensors, is increasingly becoming part of the basic equipment in new buildings and extensive renovation projects. In June 2022, the solution also moved into the Hospital zum Heiligen Geist in Hamburg's Poppenbüttel district. **By Ina Fischbach, Authorized Representative for Sales and Project Management, Zuhause Plattform**

The ZP-HausAdapter replaces the doorbell and intercom at the front door. Among other things, it can be used to digitally update name plates.

The hospital is building a neighborhood – similar to a small city – specifically to meet the needs of seniors. In June 2022, Zuhause Plattform opened the first building as part of a smart building tour involving property developers and investors from the property management industry. A total of 23 buildings will be built.

In the medium and long term, residents and tenants of the 60,000 m² site can look forward to modern, barrier-free spaces that are energy-efficient and state-of-the-art.

Wide range of functions for residents and administrators

With the system solution based on IP technology, not only is the building itself digitized, but also the processes behind it. Everything about the building that can be digitized can be enabled via the ZP-EcoSystem from Zuhause Plattform.

The administrator can standardize issues and status messages individually (e.g. "defective radiator in the bathroom") and, if necessary, they are captured digitally by the residents. Notices about restrictions (e.g. "restricted power supply: from 8 a.m. to 4 p.m.") can be made digitally accessible to residents within just a few seconds. Service providers are given fast and easy access to the building, and readings from heat and water meters and heat cost allocators are automatically read out wirelessly.

In Hamburg, Zuhause Plattform combines the main functions of video intercom,

senior citizens in Hamburg

remotely readable smoke detectors and metering information, smart heat control, lighting, and shading into one complete system. The goal is to save resources in building construction, management, and use.

Ideal solution for the housing industry

With its self-powered actuators and sensors, EnOcean offers the ideal solution for the housing industry. Energy harvesting technology minimizes maintenance in the building, saving both time and money. The EnOcean standard gives the ZP EcoSystem a high degree of flexibility for retrofits and upgrades.

Open standards such as wireless M-Bus/OMS, remote detection systems, and web-based billing software result in a well-functioning overall system and pave the way for independence from previous meter reading processes.

The deployed system at a glance

The **WohnungsAdapter** acts as a video intercom and an interface between the operator and residents. Residents can use it to intelligently control shading and lighting (via OPUS BRiDGE switches) and heating (Afriso CosiTherm) as well as to view heat and water consumption at any time. At the same time, they can report issues digitally and receive building-related information from the administrator.

Since the WohnungsAdapter receives and transmits EnOcean as well as wireless M-Bus, it can control the individual sensors and switches in the rooms and display their status. The secure ZP-EcoSystem enables the current meter data to be read out from the apartment and makes that information available to the administrator, ready for billing. With a live view, tenants always have an overview of their consumption data.

From leak sensors to window contacts, the system can also be expanded to include a wide range of self-powered EnOcean components.

The **HausAdapter** makes the front door and the traditional doorbell smart. The video function increases security for residents and the building. When there is a change in residents, names are changed automatically and digitally.

The **HausServer** in the service connection room connects HausAdapter and WohnungsAdapter in a building and, in addition to the power and data supply, also ensures an uninterrupted power supply. Furthermore, it is the interface to the backend for maintenance and updates.

Zuhause Plattform building technology brings the Internet of Things into buildings that have many residential and business units and digitizes management processes. The other buildings in the Hamburg neighborhood are already in the planning stages.

www.zuhause-plattform.de

LAE specializes in building planning, electrical planning, and industrial automation. In many of its projects, LAE uses battery-free, wireless technology from EnOcean.

Worth the investment – or not worth the hype?

Energy prices have always been high in Germany, but the effects of the war in Ukraine are now causing prices to sky-rocket, putting businesses under even greater pressure. Cutting-edge building automation solutions, cloud-based applications, and smart spaces claim to deliver enormous energy and cost savings. But can they live up to their promise? Can companies really recoup the initial investment and ongoing operating costs associated with this complex technology? And which efficiency technologies are best suited to which types of business?

By Frank Lettmann, Divisional Head of Electrical Engineering Planning, LAE Engineering GmbH

Energy prices have been high for some time now. A multitude of factors have driven this upward trajectory, and the situation isn't likely to change anytime soon. Boosting energy efficiency is a huge challenge, particularly for industrial companies that consume vast amounts of energy. Rising energy costs, new regulations and political requirements, competitive pressure, and higher CSR standards are just some of the key factors that are turning up the heat on industry.

Why has investment been cautious to date?

As well as being unaware of the potential savings, companies often lack the financial resources required to invest. The cash that is available is poured into the core business rather than into new technologies that save energy and, in turn, free up the capital that was previously allocated to power. Without independent professional advice, it's impossible to determine which solution is right for a company from among the vast array of measures and technologies available. To a large extent, the best option depends on the company and its structures. A service company will have a whole different set of needs and energy costs than a manufacturing company, and its potential savings will also be completely different. The savings potential in manufacturing settings is much higher. Companies often underestimate how much they could save. In the industrial sector in particular, there is still plenty of scope for savings.

Up to now, companies have allowed themselves to be guided primarily by legislation and legal requirements. The German Buildings Energy Act (GEG) and DIN EN 15232-1:2017-12, for example, set out specific requirements for technology functionality and controls. The standard

provides a structured list of functions for building automation and technical management. However, it describes only a minimum standard – the realms of technological possibility extend much further. GEG, on the other hand, actually relaxed the criteria for building shells. Companies that merely set their sights on meeting the minimum standards are turning their backs on a great deal of potential. That's why it's important not only to comply with regulations, but also to take responsibility for future generations.

Digitization and AI have a part to play in the energy transition

If companies want to exploit the full energy-saving potential of technology, digitization must be a key part of their strategy. Digitization enables a wide range of components – such as self-powered wireless sensors – to communicate with one another across buildings or industrial plants, reporting and sharing commands, errors, and status information. If this data is available online, companies can gain an almost complete picture of their energy consumption and transmit and analyze this data in real time. Intelligent systems highlight where there is potential for improvement and offer feedback on user behaviors. An efficient energy management system provides a detailed overview of consumption data and operating statuses. Progressive digitization and the Internet of Things (IoT) reduce workloads and costs while also offering enormous added value in the form of data transparency. Adding artificial intelligence (AI) into the mix opens up an almost limitless range of possibilities.

In the future, AI components will be used at all levels of the value chain. As a vital tool for forecasting and optimizing operations and stock in particular, AI will make an enormous contribution to the energy transition. AI can be used to generate forecasts that predict the production of, and demand for, fluctuating renewable energies earlier and with greater precision. In terms of operational optimization, there is huge potential for deploying AI to plan the use of generating plants. In optimized network operation as well, the technology opens up a number of new opportunities that will continue to increase as sensor data becomes more prevalent in the future.

So in case you haven't already realized it: Investments in energy efficiency pay off, whether it's through their long service life, cutting-edge systems, a cash-neutral balance, or significantly reduced CO2 emissions. The goal for companies should be to sustainably optimize energy consumption over the long term. This requires a holistic approach that takes the specific situation of the company and its production processes into account.

www.LAE.eu

Future-driven innovative office

The new headquarters on the Kiel Fjord is a milestone for the Investitionsbank Schleswig-Holstein (IB.SH): 700 employees, who were previously spread across eight different locations, are now gathered under one roof. The office concept was designed for sustainability with the help of a well thought-out building automation system. Powerful room operating units from Thermokon play an important role in the concept. By Cornelius Berns, Head of Global Sales, THERMOKON Sensortechnik GmbH

In a total area of 22,000 square meters, the attractive building complex that is now home to the development bank of the state of Schleswig-Holstein contains not only innovative offices but also various team areas and flexible rooms for the new way of working. The architectural concept is contemporary and future-oriented, as evidenced by the sustainable construction and the intelligent building automation system. Both contribute noticeably to a reduction of energy costs.

Melf Söth Schaltanlagen GmbH was the contractor and system integrator for the building automation system in buildings 5 and 6 and faced the challenge of networking air-conditioning technology, lighting, shading, and energy meters into a uniform BMS. Melf Söth received project support from DEOS AG, who supplied the controllers and the BMS software.

Above: EasySens® SRW03 wireless window contact

Right: thanos multifunction room operating unit

JOY: elegant appearance – efficient integration

In addition to intuitive operability, the project managers responsible were looking for a

concept for IB.SH

high-quality appearance as well as simple and rapid commissioning – requirements that the “JOY HC 3AO” room operating unit from Thermokon fulfills. The elegant design with the flat housing and large display that provides information on the time, room conditions, and the current status of the HVAC system, and the possibility of controlling the blinds, were just as attractive as the simplicity of integration into the building management system using the integrated Modbus interface.

The offices and meeting rooms in both buildings were equipped with a total of 406 JOY room control units. Window monitoring, which was also a must-have for some of the rooms, was realized with a combination of around 70 EasySens® wireless window contacts and STC65+ EnOcean-Modbus gateways. For representative rooms with high-end design furnishings, Thermokon’s thanos was chosen. The project managers responsible aimed at providing a high-class finish using the premium solution with its high-resolution 4.8” touch display. In addition, control of the lighting, blinds, and ventilation systems was ensured in all rooms by integrating weather forecasts into the building management system.

High demands on the implementation

When integrating the room operating units into the building automation system, Melf Söth focused on efficiency and cost-savings. For this purpose, the room operating units, which were installed over a total of ten floors, had to be commissioned as quickly and seamlessly as possible. This meant that manual commissioning was out of the question. DEOS offered a solution. Using their software, the integrators were able to parameterize each room unit externally and centrally through BMS.

Time- and cost-saving configuration

Melf Söth found an efficient and flexible solution in the DEOS programming tools. Using the Modbus macros from the DEOS automation controller, the first step was to set the Modbus addresses on the Thermokon devices and then connect the devices to the BUS network. EnOcean-to-Modbus linking was carried out using Thermokon’s STC65+ gateways, which supported the central time- and cost-saving configuration. The clear display of all set parameters reduced potential configuration errors to a minimum.

www.thermokon.com

JOY room operating unit, customized version including lighting and shading control

Casambi and EnOcean boosting a building's eco-credentials

Surmounting sustainability challenges is an activity best undertaken as a team. The combination of wireless lighting control and self-powered switches can significantly raise the green bar for buildings.

By Saara Guastella, Product Marketing Manager, Casambi

"When introducing new innovative solutions, we need to consider how to scale sustainably. There are reports of a trillion sensors entering the market in the next few years. That's a lot of batteries and cables!
We must replace batteries with alternative technologies such as energy harvesting – otherwise, we risk trading one problem for another."

Raoul Wijgergangs, Chief Executive Officer of EnOcean

Wireless lighting control plays an increasingly bigger role in the provision of attractive spaces that offer outstanding user experiences while promoting sustainability. Casambi's Bluetooth Low Energy-based technology provides lighting designers and manufacturers with a framework for wirelessly linking devices together to enable the creation of personalized smart lighting networks.

"Wireless tech, digitization, and sustainability are intertwined. A key benefit of software is that you can constantly and remotely update it. Casambi Ready devices, for example, can be dynamically updated in the field. Over-the-air programming allows us to push new security, software features, and additional functionalities out to the entire fleet of installed devices at once. It's this sofware-driven mechanism that allows constant and fast evolution, reacting to realmarket needs and more importantly, extending the lifespan of installed devices."

Timo Pakkala, Founder of Casambi Technologies

Some of the sustainable lighting strategies to which Casambi can contribute include the provision of daylight control. This entails a perpetual balancing act to achieve maximum lighting quality and reduced energy consumption in unison with the intermittency of natural sunlight. Wireless lighting control also confers social benefits by improving visual comfort and personal safety. The combination of sensors and lighting control can measure the lux level and automatically adjust light intensity to cater to highly localized lighting needs.

Enhanced environmental credentials

Beyond the virtues of smart control, it's possible to significantly reduce a building's ecological footprint by going wireless. The potential for reducing embodied and operational carbon by using less wiring, batteries, and equipment is a huge advantage. Masters, controllers, bus power supplies, time modules, control wiring, cabinets – all the essential components of a wired system are rendered obsolete with Casambi.

Copper is becoming more expensive and the harmful components in batteries are also increasingly problematic. EnOcean battery-free, wireless switches address both these environmental aspects. The press of a button on the switch generates enough power to send a radio signal to turn lights on or off, or to control lighting scenes.

System flexibility and expansion

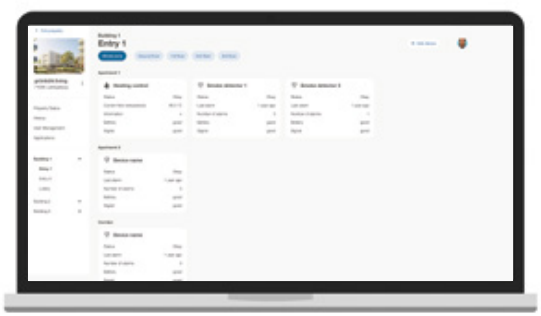
The combination of EnOcean switches and Casambi frees users from all the physical constraints of wiring. Any additions or changes to lighting installations can be easily implemented in the Casambi app. It's possible to add or remove luminaires, move switches around, and add new functionalities and scenes at any time. This means that the latest and most energy-efficient light sources can be adopted as soon as they come onto the market.

EnOcean switches have been deployed in the vast majority of Casambi-controlled projects. When the BBC wanted to install and connect over 15,000 lights across nine UK sites, they chose Casambi control with EnOcean switches. This decision reflected their mission to reduce energy use, improve staff comfort, and introduce smarter, more flexible control.

Certified sustainable buildings have a greater asset value than "traditional" buildings, suggesting that owners benefit from the investments they make in green, smart tech. They are jointly supported by EnOcean and Casambi.

www.casambi.com

Everything from a single source



The Smart Building Cockpit provides an overview of all relevant operational data from the property.

For a long time, the refurbishment backlog has blocked the progress of CO2-neutral building development. Starting in 2023, landlords will have to bear part of the CO2 costs, meaning that it will be in their best interests to consider how they can reduce operating expenses in their buildings quickly and efficiently without the need for extensive structural alterations.

By Christin Siepmann, Trainee Sales Representative for Marketing and Communications, Connectivity Solutions GmbH

The obvious solution is a manufacturer-neutral building system that coordinates and connects specific areas according to their individual needs. wibutler is just such a building operating system that is scalable to different sized buildings in both new construction and refurbishment projects. In cooperation with partners, the wibutler IoT platform closes the gap between simple smart home applications and smart building applications for apartment buildings. The relevant data from connected devices is sent via radio standards like EnOcean to the wibutler cloud where communication takes place between the devices. This results in synergetic effects that increase energy efficiency. For example, the boiler regulates the room or area temperature so that it doesn't exceed the desired or optimum preset temperature, thus allowing full control of energy consumption.

wibutler pro connects EnOcean devices to the wibutler cloud and links the living space to building automation.

The desktop view in the Smart Building Cockpit provides landlords with access to relevant operational data such as alerts, usage indicators, and service intervals for linked devices. This means that building owners can find all important information in one place and take action quickly when a problem arises. Additionally, residents can use the wibutler app to add DIY smart devices to their system in order to make their homes more efficient, secure, and comfortable.

www.wibutler.com

NodOn was asked to modernize the historic town hall in Angers, France. One challenge was to control and centralize the opening and closing of the newly installed electric blinds without affecting the structure of the historic building.

By Amélie Delarbre, Marketing and Communications Manager, NodOn

How to renovate a historic building with NodOn

The city council, which wanted to minimize the work and time needed to implement the devices, had special requirements for the solution. It should allow easy installation (no cables to be laid) and should be maintenance-free. The preferred choice was wireless and battery-free switches based on EnOcean's energy harvesting technology.

The first objective was to improve comfort in the building by shading the rooms against hot weather. The city council also wanted to automate the opening and closing of blinds in order to save energy. To fulfill this commitment to building automation, it was essential to provide a flexible and interoperable installation so that new equipment could be easily integrated.

A wireless and battery-free solution

In order to meet the requirements of the Angers city council, NodOn experts recommended the installation of wireless and battery-free EnOcean roller shutter modules and controllers. The main advantage is that there's no need to run cables to install the switches. EnOcean offers a battery-free wall switch, which means there's no need to change batteries, no maintenance, and maximum flexibility. This solution optimizes comfort thanks to the automated control of blinds throughout the building during business hours. Employees no longer have to enter each room to close or open the blinds at the end of the day. The creation of an interoperable ecosystem also allowed the integration of other radio technologies via the home automation gateway.

www.nodon.fr

Wireless? It works!

The new test device from MACO determines the range of the EnOcean signal for the mTronic and eTronic wireless sensors. It also keeps an eye on their function.

By Christoph Lahnsteiner, Head of Door Product Management, MACO Group

The test device determines the range and quality of the EnOcean signal for the mTronic and eTronic wireless sensors.

The MACO mTronic and MACO eTronic wireless sensors integrate windows, doors, and sliding elements into the smart home system. The new test device makes installation easy – even easier than before, in fact, because it determines the range, i.e. the signal quality. In this way, the device makes it easier to select the gateway location – and indicates where a repeater is needed for a secure connection via EnOcean. Included is a blue test transmitter whose design is based on the eTronic.

Before the sensors are mounted, the test transmitter checks all elements for connectivity.

Datagram analysis

During the test, the helper relies on clear signals: Four light-emitting diodes ensure visual clarity, and the test device uses a variable signal tone to provide acoustic information. The device is a worthwhile investment in other respects as well. It monitors the function of the sensors by analyzing and displaying their EnOcean datagram as a status signal. eTronic detects the “open” and “locked” states. In addition, mTronic captures the tilt position as well as an unusual movement of the locking pin (manipulation / attempted break-in).

Wireless and hardwired

However, the test device is not the only addition to the MACO family of wireless sensors. The flush-mounted wireless actuator is also a new addition to the portfolio – in line with the motto “everything from a single source.” The actuator provides the connection between the wireless and wired worlds and is best hidden elegantly in a flush-mounted box. The wireless sensor monitors the status of the element and reports it to the actuator. The actuator receives the signal, which it passes on to the home control system via a cable to trigger an action.

www.maco.eu

Decentralized blind control for existing buildings

WGE “Im Ettingerhof” is a non-profit housing cooperative with around 120 apartments in the city of Basel, Switzerland. In line with the cooperative concept, WGE focuses on people and not on returns. As collective owners, the members have a say in all fundamental issues.

By Andreas Rüegg, Managing Director, AWAG Elektrotechnik AG

The properties, which date back to 1947, were due for renovation because requirements for apartments have become stricter in recent years. Also, even older buildings can easily be brought up to the state of the art thanks to modern building automation. The building owners jointly decided to rely on AWAG’s Omnio radio-based blind control system.

Retrofitting wireless shutter control

Omnio is based on EnOcean self-powered radio technology and operates wirelessly. The Ettingerhof was thus able to modernize its shading system within a very short time. There were more than 600 roller shutters and awnings throughout the complex that needed to be controlled and monitored. The Omnio blind actuators were distributed decentrally in the respective blind boxes, which simplified the installation work considerably. The blinds move – controlled by a central command from several Omnio weather stations - into a defined safety position in the event of thunderstorms, hail, or strong winds. This significantly extends the life of the blinds and increases the comfort of residents and property owners. Weather stations and hail protection are integrated via the Omnio E-Bridge, reliably securing the outdoor area. With customized labeling on the wall transmitters, even elderly residents can conveniently benefit from the EnOcean wireless technology.

Assuming good planning, this example of a renovation perfectly illustrates how a modern wireless solution for large properties can be easily implemented so that buildings remain attractive for younger residents over the long term.

www.omnio.ch

EnOcean handheld transmitter

Blind actuator

DIN rail-mounted blind actuator

EnOcean wall-mounted transmitter

Assisted smart living on Shore Road

Smart home systems for regaining independence and security within your own four walls – made possible by intelligent technologies from Eltako.

By Anna Borek, Head of Marketing, Eltako

The vision of the family-run company

For decades, Eltako has proven itself as a pioneer in the electrical installation industry. Its aim is to make the lives of its customers easier and more comfortable through the use of intelligent, customizable complete packages. The extensive portfolio is divided into the Professional Standard, Professional Smart Home, and Professional Building categories and includes products for both indoor and outdoor use. Easy control, simple installation, and the creation of automation solutions give users a home where they can unwind and relax after a stressful day.

Assisted smart living

It's no secret that controlling electrical installations via smartphones, tablets, and similar devices provides greater convenience. Yet if you look away from the sheer convenience and search for other benefits, you'll discover features such as Ambient Assisted Living.

For people whose lives are limited by illness, disability, or injury, living in their own homes can be extremely difficult or even impossible. Any help, no matter how small, can make a tremendous difference. The use of Professional Smart Home products simplifies and automates the operation of such things as lighting and shading, eliminating the need to get up to go to the light switch, for example.

On Shore Road in London, Eltako outfitted an apartment that has been tailored to meet precisely these kinds of needs. It was designed to support its owner and ensure that everyday life is safe and secure.

Ready Controls Ltd, Eltako's system partner in the UK, developed a residential concept centered around Eltako's wireless products in close cooperation with the future owner's care team. Because the sensors can be easily installed on almost any surface, they are ideally suited for use in apartments such as these. The devices used included dimmers and actuators for blinds from the 14 series, as well as window contacts, wall switches, and motion detectors. Users can control the smart devices via the GFA5 app and the MiniSafe2. This is Eltako's in-house smart home controller with the associated app, which makes operation and installation as simple as possible.

When these devices interact with higher-level software, the result is a monitoring system that learns the resident's behaviors in a non-invasive way and can thus document deviations. If the person does not get up or go to bed as usual or does not trigger other preset motion detectors, a warning message is sent to the nursing staff. They can then respond according to the circumstances and intervene in dangerous situations in a timely manner. This can be done by means of a home visit or a simple voice message asking the resident to please check in. This type of assisted living minimizes the intervention of caregivers to what is strictly necessary, ensuring that residents can enjoy daily life independently and safely.

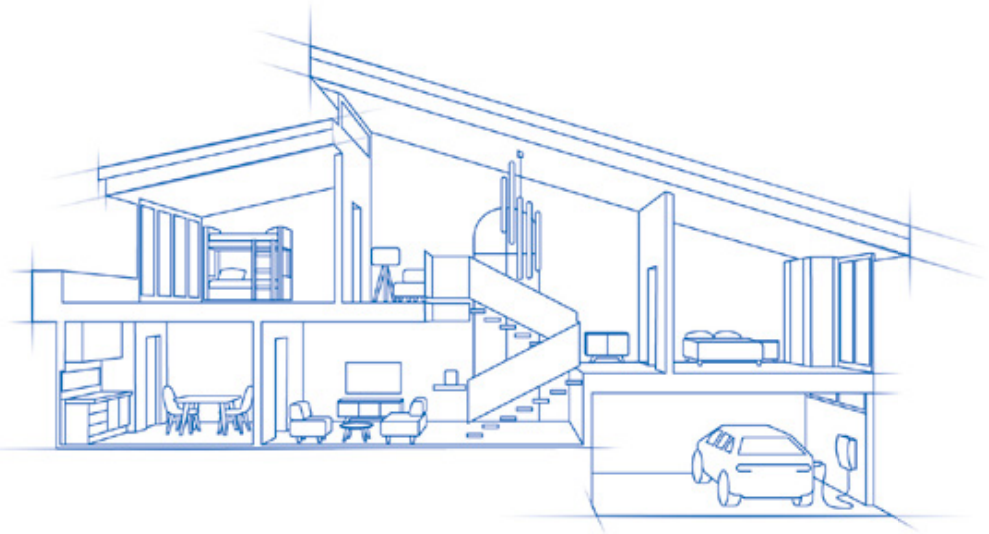
Thomas Alt, electrical engineer at Ready Controls Ltd, says: "I think the most important aspect for the customer was that the smart technology was used in the right way, improving their lives over the long term and making them happier and more independent. Along with all the other benefits to caregivers, that makes all the difference and makes this investment worthwhile."

Professional wireless installation on the support rail using the popular 14 series from Eltako.

Conclusion

Smart home technologies have a reputation for being used exclusively in large and expensive new buildings. The reality is quite different. An intelligent control system and electrical installation are not just a gimmick; on the contrary, they can make many people's lives easier by giving them freedom and security in their own homes. Eltako's products can be used flexibly, are energy-efficient, and conserve resources because they are based on EnOcean's energy harvesting technology. By harvesting its own energy, reducing the need for caregiver intervention, and adding products affordably, Eltako helps customers save time and money. By avoiding wires and batteries for most products, the devices used are very reliable – something that is extremely important, for example, when it comes to Ambient Assisted Living.

www.eltako.com



“Battery-free by EnOcean” – energy at the press of a button

It’s often the simple things that help us the most in everyday life. Like switches, for example, that can communicate wirelessly with lights, blinds, and ventilation systems without the need for cables or batteries. The only source of energy they require is the press of a button. The “Battery-free by EnOcean” seal identifies these types of self-powered wireless switches.

By Markus Florian, Senior Vice President Sales EMEA and Asia, EnOcean

A seal for 100% battery-free

With its battery-free wireless technology, EnOcean has found a sustainable way to generate energy. Thanks to energy harvesting, these wireless switches are indeed able to “harvest” their energy from their immediate surroundings. They use the kinetic energy from the movement created by a button press as their source of energy. Whenever users press the button, they activate an electro-dynamic energy converter inside the switch. Similarly to a bicycle dynamo, a magnetic flux is passed through two magnetically

Many switch manufacturers are already part of the "Battery-free by EnOcean" program and use the seal to show that their products don't require any batteries whatsoever, for a high degree of flexibility, convenience, and sustainability. More at **www.enocean.com/battery-free**

conductive laminations by a small but powerful magnet, and is enclosed in a U-shaped core. An induction coil is wrapped around this core. The core itself is movable and can take up two positions, in each of which it touches the opposite lamination. The transition from one position to the other leads to an abrupt change in the magnetic field, thus generating a voltage pulse in the induction coil. The press of a button is instantly converted into electrical energy for a wireless signal.

This means that the wireless switch is not only always at hand wherever it's needed – on the wall, on the living room table, by the bed – but is also 100% battery-free, so it's ready for use at any time. With the "Battery-free by EnOcean" seal for self-powered switches, this feature is visible at a glance to users, who can then make a conscious decision in favor of a maintenance-free and environmentally friendly product.

Energy for open standards

EnOcean developed this type of energy harvesting more than 20 years ago. Energy-harvesting wireless technology has now become firmly established in building automation and the smart home. With the energy from the press of a button, self-powered switches can utilize the EnOcean wireless standard from the EnOcean Alliance as well as the Zigbee and Bluetooth standards for wireless communication.

Whether it's for just the right light in your own home, for the maintenance-free control of LED lighting systems, or for shading and lighting in an office building, a self-powered wireless switch makes it all possible with a single click, without ever having to replace a single battery.

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EnOcean GmbH, Kolpingring 18a, 82041 Oberhaching, Germany
Phone: +49 89 6734 689 0, Fax: +49 89 6734 689 50,
perpetuum@enocean.com, www.enocean.com

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EnOcean strengthens sales team in Europe and the U.S.

Sales Manager Central Europe

The sales team in Central Europe is constantly growing. Since June 2022, **Volker Schirp** has been responsible for key accounts in the region with a particular focus on building automation and energy management. Before Volker Schirp joined EnOcean, he spent 27 years at Honeywell where he held several international sales leader positions, including Sales Manager for the DACH region in charge of Honeywell's PEHA and Friedland brands. With his expertise and extensive background in the building sector, he's a great addition to the team and will help EnOcean to grow and manage business in the Central Europe region.

West Coast Sales Director U.S.

Chris Lynch joined the EnOcean family in June 2022 as West Coast Sales Director in the U.S., based in Los Angeles, CA. He came to EnOcean with over 20 years of sales and management experience in consumer electronics, custom installation, security, and technology. In his recent role at Nice/Nortek Control, for example, he started a builder services program with no revenue that became a $20M+ pipeline of existing and future revenue. At EnOcean, he will be responsible for ramping up the emerging Smart Spaces market and further developing business in the smart building sector.

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