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SPECIAL RATES APPLY FOR ISH 2019

Dear reader,

An acronym that was previously unknown to me has recently been cropping up more and more in market studies: CREM. It stands for corporate real estate management.

In a nutshell, it refers to the way that companies whose core business lies in areas other than real estate – in developing products or services, for instance – manage their business properties to create more value. The enormous benefit and short payback periods involved in digitalizing buildings make it clear why the aforementioned market studies are now predicting significant market growth for wireless sensors and IoT solutions in this context.

One such management benefit is derived from energy savings. Switzerland, for example, has the Minergie standard, and the amended EPBD building directive is being rolled out Europe-wide. Sensors positioned in the right locations generate the raw data for systems that control temperature or room occupancy more intelligently.

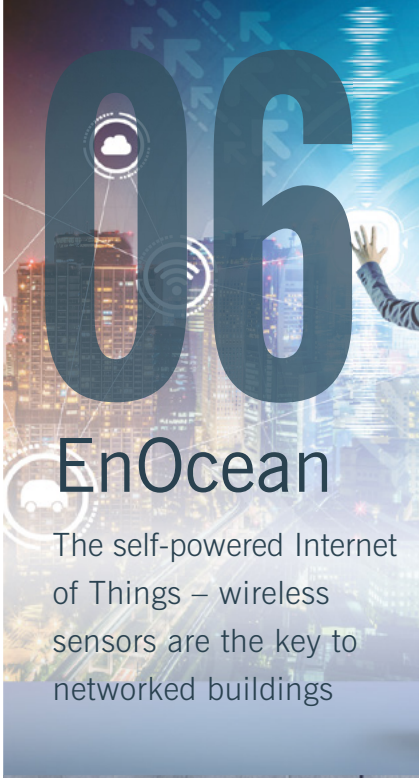
Or take Title 24, the California law stipulating that newly installed lamps must turn off automatically when no one is in the room. A broad analysis of the occupancy data obtained allows the building's use to be optimized even further. For example, you could make these spaces available for use by startups and other business enterprises and thereby generate added value for your own company.

The way in which skillfully managed buildings have a positive influence on the efficiency of employees is more difficult to calculate. Human-centric lighting was a major theme at light&building 2018. Facility management companies are already testing solutions intended to optimize their workflows with the aid of artificial intelligence. The goal is to further lower costs and make the buildings attractive to employees so that working in them will be both more enjoyable and more effective in the future.

A lot of sensor information for controlling lights and heating is already being generated in building automation systems. However, these systems need much more detailed raw data in order to offer innovative solutions. This is where the IoT studies mentioned come full circle: Wireless sensors will supply this data. Easy to install, they can be positioned flexibly and generate raw data, which can then be analyzed by Watson, Azure and Alexa. Our "self-powered IoT" technology allows this data to be generated very reliably and without any maintenance, making them cost-effective.

The current issue and this year's ISH give you an overview of how the EnOcean technology helps more than 400 members of the EnOcean Alliance and its IoT partners successfully implement CREM.

Andreas Schneider
CEO, EnOcean GmbH



The self-powered Internet of Things – wireless sensors are the key to networked buildings

Leading article
Data Power for Smart Buildings

The average time between breaking ground and tearing down a building is up to 100 years, which is the typical lifespan of a building. Of course, to keep earning a profit – especially in the case of commercial buildings – money must be regularly invested in maintenance and modernization.

Thanks to digitalization, facility management companies are currently facing a radical technological transformation. Tenants in office and other commercial buildings now often expect completely new services and flexibility. While classic technical building automation systems with automated control of blinds and temperature remain important, modern work environments demand more. And this is where the opportunity for new business models can be found.

By Armin Anders, Vice President Business Development, EnOcean GmbH

The goal is to link building automation systems with the Internet of Things (IoT) and thereby collect data that permits completely different services. New facility management roles already reflect this very development. Corporate real estate management (CREM), for example, deals with in-house real estate resources and how they can contribute to company profits. The point is no longer simply to manage the property but to actively establish a separate business field. IoT can make a valuable contribution to achieving this goal.

Upgrading to the IoT – but how is this done?

When it comes to IoT retrofits, you don't need a crystal ball to back the right horse. The technology needed to upgrade existing buildings and plan new ones with a view to the future already exists today. Wireless sensors that communicate with gateways over radio links form the basis for building digitalization. They collect the raw data and deliver it to IoT platforms for storage, processing and evaluation. The major suppliers of cloud-based platforms include IBM Watson, Microsoft Azure, Amazon Cloud, Google Cloud and Apple iCloud®.

Suitable applications and dashboards give facility managers a real-time, 360-degree view of their building and its use as well as its history. The wireless sensors from EnOcean can be flexibly placed all over the building, on furniture or objects such as printers, coffee makers, etc. Because they are self-powered, they also require no maintenance. Thanks to this combination, the self-powered solutions are ideal for upgrading existing buildings, which make up the lion's share of the market. Flexibility and the ability to add a radio-based system are important considerations for new buildings. So far, so good. But what exactly can building operators do with this knowledge?

A practical checklist of application examples

The following application areas have emerged, in which the IoT contributes added value to building management:

- Space and room utilization
- Restroom management
- Predictive maintenance
- Energy optimization
- Asset management

These areas are unified by the business goal of maximizing building utilization while minimizing costs, especially in expensive metropolitan areas. The use of rooms and equipment according to new work environment concepts is a good example of this.

New ways of working

Modernizing office work environments has long been driven primarily by IT. However, designing these spaces requires collaboration across the board. Not only the HR

Sanitary facilities at a glance
Clean toilets, filled soap dispensers, sufficient fabric towels and toilet paper – this is the ideal state of sanitary facilities. In fact, use and consumption can be difficult to predict. If the sanitary facilities are equipped with sensors, the building operator receives transparent, detailed information about the quality of the cleaning service.

department but also facility managers are therefore increasingly involved in implementing new work environments. Such concepts focus on flexible and attractive workplace design and the productivity improvements associated with this. The success of these projects depends on how well they are accepted by employees. Easy-to-install wireless sensors supply the appropriate data to enable the measurement and optimization of the use profile of workspace and devices.

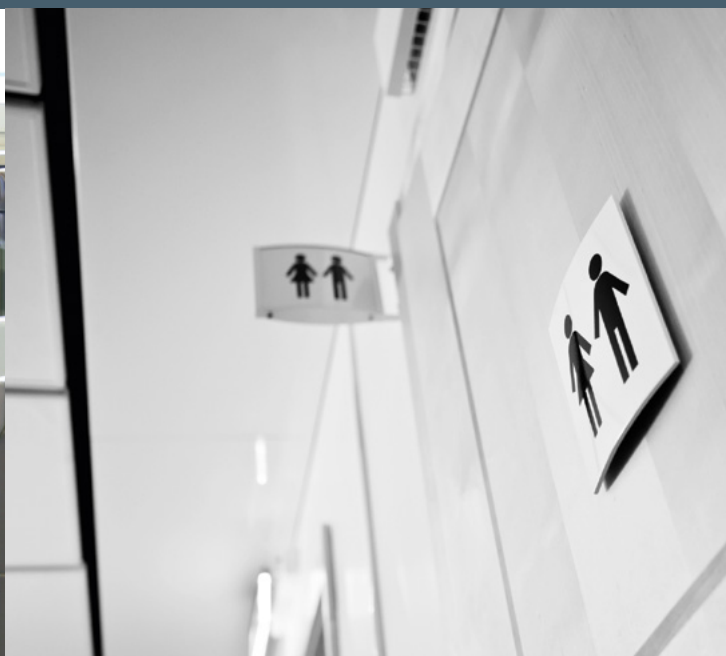
Wireless sensors form the basis for room use

Motion sensors (passive infrared or vibration) detect the necessary raw data. Cameras for the alternative counting of people are associated with a great many disadvantages, such as data privacy concerns and the high cost of installing the necessary power cables.

The benefits of a radio-based sensor solution for counting people, such as the one offered by EnOcean partner Thing-it, are obvious: Wireless sensors operate without cables and are thus extremely economical to install. In particular, the EnOcean sensors use energy harvesting technology, which means that they operate without batteries and obtain their energy from the ambient light. As a result, they require no maintenance.

Systematic readjustments

Thing-it has developed an algorithm that determines how many people are present as well as their locations based on the use and activity profiles of the EnOcean sensor. The algorithm calculates the room capacity utilization on this basis. Locations that are not well utilized, such as an out-of-the-way conference room, can be upgraded, adjusted in size, or a completely new use for the room may be considered. Or it might also make sense to introduce a hot desking concept. If it turns out that many desks remain unoccupied a great deal of the time, a sensor-based



management system can help improve the room's use.

Wireless asset management

Radio-based solutions with vibration sensors offer high added value with little effort in the area of asset management. The collected data can be used to check the utilization of many pieces of equipment, such as printers and projectors. As a result, the printer can be placed in another, more accessible location. A projector that has hitherto not been used is moved to a different conference room.

Paradigm shift in building automation

Future building use concepts require vast quantities of sensor data in order to continuously analyze and optimize use and operation. This data forms the basis for new service models that complement the existing building automation paradigms with lasting effect. Considering the many subsystems, international standards and market requirements, in particular, interoperable sensor concepts as well as modular overall IoT systems are urgently needed.

The EnOcean ecosystem of more than 400 globally active companies in the building sector, which have come together to form the EnOcean Alliance, is particularly well positioned here. Interfaces, among other things, are defined within the Alliance. For companies, the interoperability gained means that future-oriented investments can be made in IoT projects, since the systems and solutions can be added to at any time and networked with products from different manufacturers.

www.enocean.com

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Head in the clouds toward new products and innovations

Digitalization presents new challenges. A large software developer from the Rhine Neckar metropolitan area is approaching these challenges on several levels at the same time and is moving forward toward the cloud, not only when it comes to people and technology, but also architecture.

By Frank Lettman, Head of Planning Electrical Engineering,
LAE Engineering GmbH

The client approached architects, planners and integrators with a challenging-sounding task in 2016: they wanted to create a transparent, light-flooded building with its own character, offering a great deal of scope for communication, with an extremely flexible space utilisation concept . At the same time, the increasing need to preserve resources, promote energy efficiency, optimize life cycle costs and safeguard value had to be taken into account.

Overall, the construction project offers jobs for more than 700 employees. As well as work stations in a mixed spatial structure, the premises also include project rooms, communication zones and meeting options, thus also creating alternative sites for ongoing modernisation at the site.

LAE Engineering GmbH of Wiesloch proved to be the ideal partner for implementing the demanding detailed planning and building automation involved in the project, thanks to both its 25 years of experience and its spatial proximity.

Integral planning is the key

Based on the integral planning process, LAE brought all the responsible parties to the table from the architects and operators through to the technical planners for process technology, electrical systems and outdoor facilities – this had the advantage of allowing all required functions across all trades to be defined at an early stage. The result was a list of all financial, environmental and sociological goals as well as customer requirements which needed to be taken into account.

Efficient and flexible

In order to use the previously optimized resources of the concept efficiently, LAE and the client opted to use demand-based controls for the air-conditioning system pursuant to DIN EN 15232 during the planning process. LAE also fulfilled the requirements for the greatest possible degree of flexibility in order to make future changes to utilization easily and cost-effectively.

Therefore, EnOcean technology was implemented across the board for complete room automation. Components with integrated EnOcean wireless receivers ensure the requisite freedom of design when positioning wireless temperature sensors and operating elements – due to the large amount of glass in the building, this is an advantage which is not to be underestimated in the operational phase!

The consistent use of EnOcean technology throughout the building meant that it was possible to think about certain areas and their utilization only at the end for furnishing purposes. At the same time, the single-room controls ensure a positive indoor environment and therefore directly contribute to a pleasant working environment and good productivity.

Benefits across the board

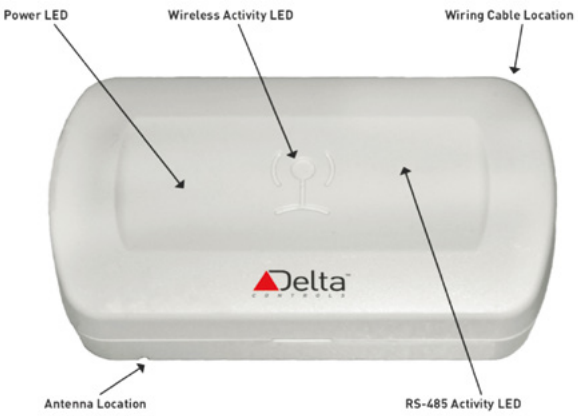
In addition to the spatial proximity, there were great benefits to be had, particularly as a result of the integral planning. The interface optimization, as well as the direct alignment of specifications through planning and execution, significantly shortens the planning and development process, reduces the number of changes made to the plan, reduces costs and increases the quality of the building and its energy performance as a whole.

www.LAE.eu

Building retrofit – smart sensors are the key

A wireless way to go green

By Mike Schell, VP Marketing & Business Development, AirTest Technologies Inc.



The CON-ENOC wireless gateway is an important component of the Delta Controls system.

The retrofit included the installation of 117 AirTest TR9277-EO wireless, zero energy, CO_2, temperature and humidity transmitters that are powered solely by an onboard photovoltaic panel that harvests indoor ambient light. If desired, a button battery can also be used to provide 5 years of power.

These devices were installed in all meeting rooms in the building and are used to provide energy efficient Demand Controlled Ventilation (DCV) that allows the modulation of delivery of fresh outside air to the space based on the number of people in the space exhaling CO_2. Wireless technology is often preferred in retrofit applications like this to avoid the cost of running wires.

The J G O'Donoghue Building in Edmonton is an enormous, three story, 262,500 square foot office building operated by the Province of Alberta. A $32 m retrofit project of the building was completed in 2018 to meet the Alberta Go-Green program that incentivizes buildings to rely on renewable energy. The project was a full renovation that included the addition of solar power, tenant improvements and installation of new HVAC, electrical and plumbing systems to meet sustainability objectives.

Installation Details

The building control system selected for the project is made by Delta Controls and installed by ESC Automation in Edmonton. A key component offered as part of the Delta system is an inexpensive, add-on wireless gateway called the CON-ENOC which supports a wide range of devices that communicates using the low-energy, EnOcean wireless protocol, including the AirTest TR9277-EO.

The gateway can receive signals from up to 32 actual EnOcean communicating devices which then translates the information via an RS485 connection to the widely used BACnet wired communication protocol. Many other HVAC manufactures offer similar EnOcean gateways.

One important feature of the TR9277-EO is a test mode that allows for measurement of radio signal strength between the gateway and transmitter. In this installation, there were a number of metal interior walls in the building that potentially can be a barrier for radio communication. To meet this challenge, the CON-ENOC gateways were strategically placed within 15 meters (50 feet) of the EnOcean devices in such a way that the radio signal did not have to go through more than two walls.

At a glance

The TR9277-EO offered a simple, fast and reliable way to integrate CO_2, temperature and humidity measurement into the Delta Controls system using their CON-ENOC, EnOcean-to-BACnet gateway. This approach reduces the total cost of installation in new and retrofit applications by drastically lowering wiring and labor costs. In spaces with high or variable occupancy, CO_2 DCV can start saving energy immediately.

www.AirTest.com

In the test mode of the TR9277-EO, you can measure the radio signal strength between gateway and transmitter.

Edmonton is the capital of the Canadian province Alberta and is located near the North Saskatchewan River.

One system for everything

Replacing the room automation and blind control functions

Because the proprietary blind control system in the main building of Electrosuisse, the Association for Electrical Engineering, Power and Information Technologies in Fehraltorf, Switzerland, was aging and therefore no longer operational, Zurich-based EBP Schweiz AG was hired to plan its replacement.

By Markus Gimplinger, CEO of simconex, Text: Matthias Natterer, FORTYtwoN AG

Since the installations were closely intermeshed with the lighting control, the plans involved migrating the entire electrical room automation functions to a new system.

The requirements? Economical and fast implementation

To find the most economical solution, and also the one that could be put into place the fastest, different system variants were evaluated. As part of his master's thesis, Simon Frei (who is employed at EBP Schweiz AG) compared the "Digitalstrom" system, the KNX bus system, EnOcean with PLC, which was then implemented, and a conventional installation.

After careful consideration, in particular based on the fact that the building would remain in operation and occupied during the renovation work on the approximately 660 blinds and as many as 700 sensors, an overall system from simconex consisting of Beckhoff PC-based PLC controllers, combined with EnOcean as the sensor field bus, was selected after being offered in a manufacturer-independent call for bids.

New actuators

The existing blind control cabinets containing the old actuators were also replaced with PLC stations having suitable output modules. The entire lighting control system was also upgraded as part of the project, so that all lamps are controlled with the PLC controller via EnOcean tactile sensors and, in turn, from the controller via EnOcean actuators or other field buses, such as DALI.

A high-speed data network had to be set up for automation, along with a central building control system with alarm and visualization functions.

Well equipped for the future

In conclusion, it is clear that the highly flexible solution designed by simconex together with Beckhoff and the EnOcean field bus system has led to the creation of a successful overall project, one that was also able to be implemented within the shortest possible amount of time.

The operator is now able to control and monitor all important functions in his building. At the same time, he has made it possible to gradually migrate the equally aging HVAS automation installation into the new system. An open-interface automation system that can be expanded at any time is thus available.

Innovative and sustainable

The EnOcean sensors and actuators can be addressed via the visualization function and reassigned as needed. A reserve slot is also provided in each case, so that an additional sensor can be integrated and also assigned by the customer.

www.simconex.com

Time for a more efficient classroom

As schools across the US discuss their budgets for the coming years they face a tough reality, school systems are getting older, energy costs are rising and districts typically have very little budget increase. So how can a school district help alleviate some of the challenges associated with these realities? Lighting and HVAC automation bring some of the fastest paybacks with multiple long term benefits and installing a battery free solution can drive down those maintenance requirements even further.

By Troy Davis, Sales Director, EnOcean Inc.

EnOcean, and our partners, create lighting and HVAC solutions that work to reduce the energy consumed by the school, create a more productive and positive environment for the students and teachers as well as reducing ongoing maintenance costs.

Benefits

There are a variety of short and long term benefits to adding LED lights and automating existing HVAC systems within aging infrastructure. Aside from the budget benefits we also see the following:

Simplicity

The installation of the controllers can be completed in the light fixture factory, meaning the installer will only need to connect power to the fixture and then install a switch and sensor in the space. The linking of the switches and sensors to the fixtures is simple and fast with most classrooms being linked and configured in less than 10 minutes.

Energy

Simply put, the school will consume less energy, which translates into reduced expenditures against a budget line item.

Maintenance

In addition to the low maintenance and extra-long lifespan of LED lights themselves, the EnOcean switches and sensors can also offer maintenance free operation. Because it is a battery-free solution, the technicians will never be chasing dead batteries.

HVAC

Installing lighting sensors and switches in classrooms means you now have data your HVAC system can use to become more efficient. Using the new motion detector in the room you can send a message to the HVAC to reduce the airflow or energy requirements

for that room during unoccupied times. Using a schedule based HVAC strategy, the rooms will be heated and cooled on a weekday holiday while no one is attending classes, and the occupancy sensor can communicate with the system to let it know that specific areas are vacant.

Performance

Students perform better under LED lights than they do under fluorescent lights. Multiple studies show students attention is improved.

Asbestos

Easyfit controls can be installed in both new and retrofit lighting solutions. When used in combination with a retrofit kit, the possibility of asbestos disruption is significantly minimized. In majority of installations access is never required above the ceiling plane, leaving the possible asbestos untouched and eliminating the need for abatement and the massive costs associated with this effort.

The districts which have chosen to install EnOcean based systems have reported these benefits and more, while they continue to expand the scope in which they use the Easyfit system.

www.enocean.com

Living rental homes?

Everyone is talking about the smart home, not least because of Apple's HomeKit® and Amazon's Alexa. But when it comes to rental homes, who benefits from the smart technology?

By Oliver Fischer, CEO, Digital Concepts

Fifty-seven percent of Germans are convinced that smart home applications will be found in nearly every household a few years from now (source: Bitkom Research 2018). Residential property company Deutsche Wohnen shares this expectation, and in a first phase has been installing its MIA smart home heating controller in approximately 3,000 homes since the fall of 2018.

When discussing modern heating controllers, automatic blinds, a video intercom or voice control for older or handicapped tenants, the technology's benefits quickly become clear. But many of the devices to be controlled belong to the landlord or a real estate company. Of course, this limits the ability of tenants to take action on their own, since they have to restore everything to its original condition before moving out. Unlike some competitors, who usually mount tablet computers on the wall,

smarter in

Deutsche Wohnen installs MIA in Berlin

Deutsche Wohnen has developed a central heating console that can be installed without any new cables, similar to a light switch, and therefore functions as a retrofit for the rental property.

The display makes the system easy to operate but also permits direct control and turns off when not in use. The residential property company's objective is to maintain the property's value, improve its ecobalance and thereby provide attractive living spaces with the lowest possible subsidiary costs. The main beneficiary of this approach is the tenant.

Property management – an attractive market?

The top ten property management companies handle between them approximately one million apartments. Considering that the total number of homes is around 35 million, this figure seems small at first glance. Unlike in classic sales channels, however, the operator model lacks an intermediate stage, which means that the economies of scale and efficiency are enormous. But even here, a number of important requirements must be taken into account.

The sensors and actuators have to meet the latest version of the EnOcean specifications. The key considerations are security, remote maintenance capability and configuration for operator use. For example, it is important to be able to set the intervals at which the information of a heating controller is transmitted.

The age of the "smart rental home" has thus already begun, and the manufacturers within the EnOcean Alliance are playing a key role here.

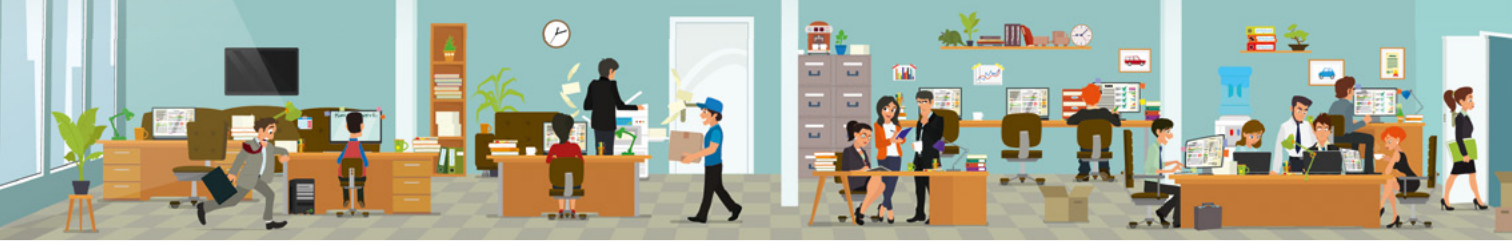
www.enocean-gateway.eu/en

HomeKit® is a trademark of Apple Inc.

Hotdesking
for creatures of habit

There could be any number of reasons why a person might be five minutes late to work, such as public transportation delays, and this could mean they can't sit at their usual desk, which is now occupied by someone else. To some people this may seem trivial, but it can cause differing levels of anxiety for employees who are used to a specific routine.

By Peter Smith, Head of Business Development, IAconnects Technology Ltd



IoT helps out

So, how can IoT help with a flexi-desk policy? A simple iaconnects and EnOcean-based solution would be to install self-powered wireless seat and/or desk occupancy sensors, and door contact sensors alongside presence detection sensors for meeting rooms.

By processing live data through the MobiusFlow gateway into an employee accessed application, you will be able to immediately see where desks or rooms are free, instead of walking aimlessly trying to find a free space.

Saving thousands of hours

But what if the desk is already taken by the time you reach it? Adding one simple feature to the employee application will allow the reservation of a desk. The employee would then have a set number of minutes to get to the desk e.g. ten minutes from entering the building. Once the employee is seated at the desk, the sensors would pick up on this, and update the application.

A gateway provides the valuable sensor information to intelligent IoT platforms, such as IBM Watson or Microsoft Azure, for smart data usage. Large organizations could save thousands of working hours by implementing these solutions and systems with the two keys being increased employee productivity and energy/cost savings.

www.iaconnects.co.uk

The IoT gateway MobiusFlow enables actuators, sensors and controllers to connect, control and communicate with each other and to the cloud.

By Claude Goetz, Smart Home Solutions, RMS.lu s.a.
Varisano Laura, Communication & Marketing, CLK.lu

Green Solutions Award 2018

SMART BUILDING INTERNATIONAL Award

The Green Solutions Awards are an international competition organized by the Construction21 network to promote innovative construction projects in the fight against global warming. For this 6th edition, 143 projects from 16 different countries participated in the competition. The nine winners were awareded their prizes at COP24, which was attended by 200 specialists from all over the world.

After qualifying at a national level, CLK was one of the international prizewinners and received the SMART BUILDING Award for its passive show house.

During the design phase, CLK focused on creating a well-conceived, sustainable and didactic building. The passive house was therefore built from a wide range of ecological materials and includes a fully wireless EnOcean home automation system. This wireless technology was selected for its operability and doesn't require the need of batteries or cables. It also gives the inhabitants an additional level of comfort and optimizes the house's energy consumption, for example by providing an automatic shading system to prevent the house from overheating.

CLK expanded the passive house concept even further and completed it together with RMS.lu s.a. by adding an automation system. In order for this to be implemented, the companies relied on Series 14 actuators from Eltako and sensors from Thermokon, Afriso, NodOn, BootUp, Hoppe and AlphaEos. The concept and programming of the house was optimally adapted by RMS.lu. s.a., thanks to the flexible myHomeControl software solution.

www.clk.lu
www.rms.lu
www.construction21.org
www.myhomecontrol.ch

The demand for smart building management systems is growing steadily, since work areas within the company that are not well organized or seldom used are becoming more and more difficult to justify financially.

By Carsten Roepke, Senior Consultant, T-Systems Multimedia Solutions,
Thomas Frahler, Business Lead IoT, Microsoft Deutschland GmbH,
Lisa Glassner, VP Regional Sales GCC, Steelcase Inc.

Digitalizing building spaces

From left to right: Carsten Roepke, T-Systems Multimedia Solutions GmbH, and Armin Anders, EnOcean GmbH, present Smart Spaces at SPS-IPC Drives 2018.

Learning and Innovation Center at Steelcase in Munich

Smart (office) spaces

The Internet of Things (IoT) makes it possible to create a digital twin, which represents building spaces and work areas in the virtual world. Companies are currently investing heavily in modern, attractive work environments for their staff and in flexible concepts for new ways of working. They want to hold onto their employees for many years to come and, at the same time, ensure high productivity and improve efficiency in their management practices.

Objective and reality

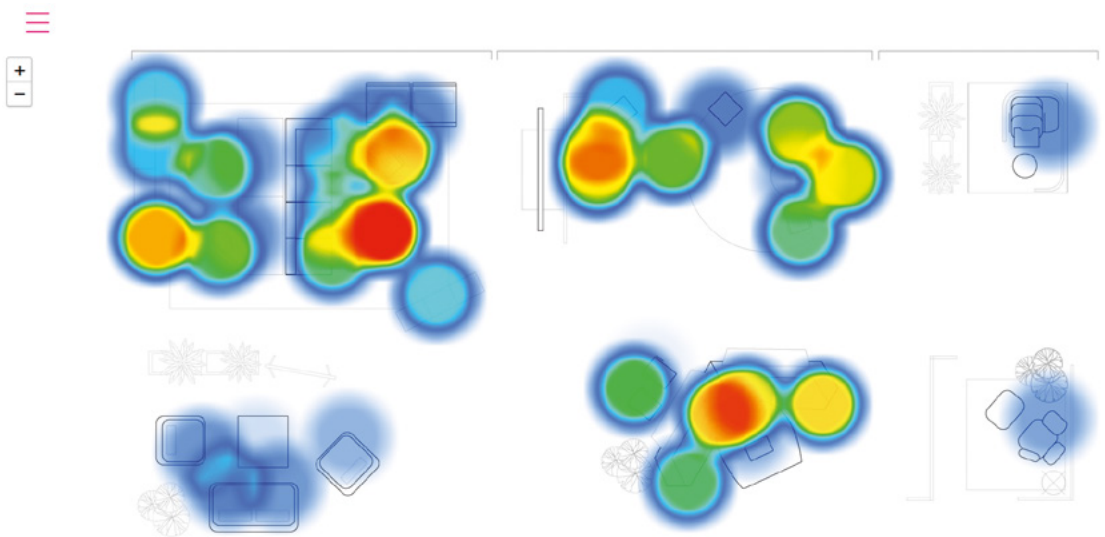
The goal is to optimize the use of space with suitable furnishings that cover ergonomic, social and intellectual aspects. Ideally, employees can make flexible use of the right work environment on a daily basis. Using room booking devices and portals further increases efficiency, and they can also be integrated into indoor navigation systems.

These requirements can also be applied to industrial environments, where the goal is to create the best possible configuration of manual workstations on the shop floor or in cyber-physical systems (human/robot interaction).

On close examination, many decision-makers (HR, production and facility managers) discover that employees often do not use modern work environments as intended, so that the high investment costs do not optimally take effect.

Steelcase, the well-known office furniture supplier, has learned from its customers

Heat map of motion data detected with sensors



that on average only 54 percent of the available office space is used. It has been shown that a correlation exists between space organization (actual demand) and the creativity and work motivation promoted by such space.

Identify, analyze, optimize

How does one recognize potential and the need for modification? How does one identify unused space, determine availability in real time, arrange devices and furniture in keeping with their function or collect parameters such as temperature, humidity and CO_2 in sensitive work areas?

Using sensors, a “Smart Spaces ecosystem” supplies status data in real time via an IoT gateway to an IoT cloud platform, where the data is analyzed, while a dashboard visualizes the results for decision-makers.

Expectation and benefit

Companies create new forms of added value when they can identify space potential and control it intelligently. This added value can be used as internal services offered within the company itself as well as for visitors or external partners of associated building management services:

- Efficient space utilization
- Higher employee productivity
- Cost control and sustainability

Strong solution partners

Steelcase produces ergonomic office furniture and develops smart office concepts.

T-Systems configures, integrates and operates customized Smart Spaces solutions.

Microsoft offers the Azure Digital Twins IoT platform, which provides a virtual representation of the physical world with smart modeling of the relationships between people and their environments.

EnOcean provides an interoperable, battery-less wireless standard with self-powered IoT sensors.

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www.t-systems-mms.com
www.steelcase.com
www.azure.microsoft.com

Managing Connected in real life

Internet of Things (IoT) technologies are to deliver smarter, more automated and better-connected systems in new and existing buildings. However, large-scale deployment continues to present a challenge for the industry because systems and practices remain highly "siloed", from the design to operation perspectives. New technologies and scalable approaches are successfully overcoming these obstacles.

By Dr. Giovanni Frezza, Director Network Connected Solutions, Molex

Ethernet Based Connected Lighting

The ability to migrate lighting controls to IP-based infrastructure makes lighting a key IoT building asset that can be controlled synergistically along with other building functions. More integration also means more meaningful data being collected by a distributed sensor system as part of the lighting network infrastructure.

The reasons for investing in a building IoT infrastructure vary. "Blue Sky," the real-life, large-scale connected lighting installation in Atlanta (Georgia, USA), uses Network Connected Lighting as an IoT platform and self-powered EnOcean-based wireless sensors. It illustrates the unique role that IP lighting covers in merging the collected information and operational worlds.

Intelligent presence-based scheduling and Audio Video (AV)

Space utilization and its optimization have been critical aspects in the Blue Sky project. In this case each room also integrates an AV system. The ability to implement presence-based scheduling and automated AV power-up was the main reason for presence detection in each space.

Having the connected lighting system already equipped with occupancy sensors clearly manifested the network sensory nature of the connected lighting system. Not only are the same occupancy sensors implemented for smart occupancy-based lighting automation, they are also utilized to support AV activation and real time occupancy data for room scheduling and booking via EnOcean relays.

Lighting Solutions

Space utilization

It is now possible to book each room from the scheduling system installed on the user computer and, if after 15 minutes there is a “no show” detected by the connected lighting occupancy sensor, the room can be re-booked by other users. Data analytics will take care of running metrics and performance analysis on space optimization in terms of time savings and capacity to host the needs of each department on each floor.

Connected Lighting granular deployed temperature and humidity sensor

Usually BMS and HVAC systems have few thermostats in the building. The ability to deploy a granular array of self-powered wireless EnOcean-based temperature and humidity sensors leveraging the connectivity already in place, thanks to the connected lighting POE nodes, allows the accurate temperature and humidity sensing capability for each space at a fraction of the cost of a traditional standalone HVAC solution. The deployed sensors measure temperature and humidity and pass the collected data on to the BAS/HVAC.

Conclusions

Ethernet Based Network Connected Lighting demonstrates the ability to bridge and converge different functions with a single infrastructure as the foundation for highly integrated buildings. Use cases such as smart scheduling, predictive maintenance, space utilization optimization and many more are possible using the sensory network nature of connected lighting infrastructure.

www.molex.com

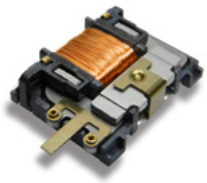
EnOcean Products

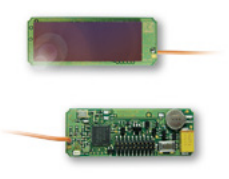
EnOcean offers self-powered wireless sensor solutions for batteryless applications in the Internet of Things, which are used for building and industrial automation, smart homes, LED lighting control and outdoor environmental monitoring.

Products with 868 MHz –
EnOcean for Europe and other countries adopting R&TTE/RED specification
Products with 902 MHz –
EnOcean for North America adopting FCC/IC specification
Products with 928 MHz –
EnOcean for Japan adopting ARIB specification
Products with 2.4 GHz –
for Bluetooth® and Zigbee networks (worldwide)

Energy harvesting wireless modules for maintenance-free sensor solutions

DOLPHIN
Self-powered IoT by EnOcean





Energy Converter | Energy Harvesting Wireless Switches | For Energy Harvesting Wireless Sensors | For Controllers and Actuators | Tools




Finished products for wireless and self-powered IoT and lighting systems

EASYFIT
by EnOcean

EnOcean Products: **www.enocean.com/products/**
www.easyfit-controls.com

Product Finder: **www.enocean.com/en/product-finder/**

EnOcean's sensor portfolio offers a whole lot more

The EnOcean sensor portfolio is growing. New on board are the solar-operated EMDC PIR motion detector and a multi-sensor family, which both harvest energy from ambient light without any batteries or cables.

By Matthias Kassner, Vice President Product Marketing, EnOcean GmbH

Self-powered sensor for smart lighting control

The new EMDC Easyfit sensor is an enhancement to the existing EOSC product family. Like EOSC, the solar-operated sensor system uses a passive infrared (PIR) sensor to detect motion, but additionally provides a dedicated light sensor that measures the instantaneous light level. This allows the lights to be automatically controlled according to the brightness of the surrounding area. Another important addition is the NFC (near field communication) interface, which facilitates easy installation.

EMDC was presented at CES 2019 as the world's first Bluetooth® motion detector with EnOcean energy harvesting technology. Product variants with the EnOcean radio protocol are planned for the second half of the year.

A new jack-of-all-trades among sensors

A new multi-sensor family, which is expected to launch in summer 2019, provides new self-powered and maintenance-free sensors which deliver data for typical building automation tasks. These sensors can measure temperature, humidity and illumination or report the status of doors and windows. In addition, the modules provide information on the current internal energy level as well as details about the light available to the solar cell.

One member of the new sensor family contains an integrated acceleration sensor capable to detect tiny movements. It can be used to monitor the activity of an asset (e.g. if an air-condition unit is running) or to report when an asset is moved. This "activity tracker" thereby connects existing assets to the Internet of Things with minimum effort.

This new sensor family operates without batteries, due to EnOcean's energy harvesting technology. The sensors obtain all required energy from the built-in solar cell. Thanks to an integrated energy store, these sensors remain active for up to four days even without available light.

Modules in this sensor family use the existing PTM form factor and can therefore be easily integrated into different frame designs. The sensors will support both Bluetooth® and the EnOcean radio standard.

High marks for security

All new sensors support AES-128 authentication based on the device-specific, randomly generated security key to ensure data integrity and authenticity. Products that use the EnOcean radio standard will support the latest version of the EnOcean Alliance security standard.

New sensor family operates without batteries

The new sensors from EnOcean have an NFC interface that enables them to be effortlessly integrated into control systems and configured using an NFC reader, a smart phone or a tablet.

By introducing these new products, EnOcean adds self-powered sensors and switches to its portfolio and facilitates even smarter control of the many different disciplines and services in buildings.

www.enocean.com

The solar-operated multi-sensor based on the proven PTM form factor will be launched in summer 2019.

The solar-operated sensor system EMDC uses a passive infrared (PIR) sensor to detect motion.

New products from the Zigbee world

Smart home and building automation systems require reliable data sources using open protocols. Energy harvesting switches and sensors for Zigbee, Bluetooth® and EnOcean radio protocol uniquely address these needs.

By Matthias Kassner, Vice President Product Marketing, EnOcean GmbH

EnOcean has been offering self-powered wireless switches based on the Zigbee standard for around five years now. One example is the Philips Hue Tap, which allows users to comfortably control the Philips Hue lighting system. This wireless switch is based on EnOcean's energy harvesting technology and thus operates without batteries or cables. EnOcean partners now offer additional switches under the Friends of Hue program.

Definition of a new standard

An extension to the Zigbee specification to better support energy harvesting devices was adopted at the end of 2018. It opens up new possibilities for switches and sensors that use energy harvesting technology.

The new standard was defined by the members of the Zigbee Green Power Technical Work Group, which EnOcean joined in 2016. The work group's objective was to define energy-optimized switch and sensor models and to integrate them into the Zigbee Green Power Framework.

The new generic switch model defines a universal switch model that permits a wide range of applications in the area of lighting (dimming, light scenes, switching lights on and off) as well as in other areas (such as shutter control), using only one product.

The compact data reporting feature facilitates the energy-optimized transmission of sensor data for a wide range of applications, such as temperature/moisture sensors, window contacts, light sensors and similar devices.

Self-powered wireless switch for Zigbee

EnOcean will launch PTM 216Z – the first self powered switch module according to the new generic switch standard – in early 2019. It will enable a wide range of applications based on the proven EnOcean energy harvesting technology.

www.enocean.com

Light and Sound with a Single Click

With Nuimo Click, Senic offers a wireless switch for easy and flexible control of Philips Hue lights and Sonos speakers. Integrating the energy harvesting technology from EnOcean, it can be mounted anywhere and never needs to be recharged.

By Tobias Eichenwald, CEO and Co-Founder, Senic GmbH

Nuimo Click is the convenient control for a home – ready for use anywhere and anytime. It can be mounted next to the entrance door, on the nightstand or carried in your pocket.

A control for everyone

The wireless switch, made in the classic Gira design – integrates the energy harvesting technology from EnOcean. The switch uses the mechanical movement of the click to create an energy source, with no charging or batteries needed. A user simply presses the button, creating the energy needed to send a wireless signal to the Nuimo Hub. That wireless signal can control Philips Hue lights or Sonos speakers, so that switching on or off your Philips Hue lights, dimming or setting a custom lighting scene is as easy as a press of a button.

Nuimo Click can be used with Sonos speakers as well to create the perfect music experience at home. Senic products are “Made in Germany” with the highest quality materials and EnOcean energy harvesting technology. You can experience seamless control of your Sonos to play/pause music, select next song, control volume or select favorite playlist.

Smart control where you need it

Thanks to the reliable range of the EnOcean wireless standard, Nuimo Click can talk to devices at a distance of up to 30 meters. Up to ten Nuimo Clicks can be connected with a single Hub for simple smart home control throughout a home.

www.senic.com

The heart of self-powered switches

Wireless, batteryless, maintenance-free, flexible: These four words sum up the benefits of a radio-based switch that operates with EnOcean's energy harvesting technology. The PTM 21x switch module family from EnOcean lies at the heart of these devices. By Jürgen Baryla, Vice President Sales, EnOcean GmbH

These modules integrate the ECO 200 energy converter and a wireless circuit board. In doing so, they use only the push-button's kinetic energy to transmit wireless signals via the three international EnOcean (ISO/IEC 14543-3-1X), Zigbee and Bluetooth standards, depending on the application.

An established industry standard

By choosing a PTM 21x, switch manufacturers do not have to commit to a specific wireless standard when designing their self-powered switches. Thanks to the switch module's standardized form factor, EnOcean has established an industry standard that fits with all common switch designs.

Switch manufacturers can therefore focus on their core areas of expertise and do not need to acquire any in-depth technical knowledge of the energy harvesting technology. This leads to more cost-effective production and faster time to market.

One switch module for three frequencies

When EnOcean launched the first PTM onto the market around 15 years ago, it was initially available only for the EnOcean wireless protocol. Over the past three years, however, EnOcean has strategically expanded its portfolio and now also supports Bluetooth® Low Energy (BLE) and Zigbee. The switch manufacturer Vimar, for example, uses the entire spectrum and offers its products for all three wireless standards. Many leading manufacturers have since

added self-powered switches to their product lines:

Smart switch by Vimar

EnOcean standard: Eltako, Jäger Direkt and PEHA as well as many other switch manufacturers consistently rely on the EnOcean wireless protocol and offer a wide range of switches. The EnOcean wireless standard for the sub 1GHz range is an excellent choice for use in buildings, thanks to its range of up to 30 meters.

Eltako offers extensive design lines based on the EnOcean Technology.

Zigbee standard: The Philips Hue Tap has been using the self-powered energy harvesting technology since 2014 to control Philips Hue lamps via Zigbee. Partners in Signify's Friends of Hue program now also employ the EnOcean technology in their smart Friends of Hue switch applications. They include manufacturers of lighting controllers, such as Busch-Jaeger (ABB), Illumra, Niko and Vimar, among others.

Modern switch design by Busch-Jaeger

Bluetooth standard: In addition to EnOcean's Easyfit switches for Bluetooth, manufacturers such as Finder also offer these kinds of products. The two- or four-channel wireless Beyon switch is a self-powered remote control equipped with Bluetooth Low Energy for the Yesly home automation system.

The design of Beyon fits in all residential environments.

Maintenance-free and flexible switch solutions that require no batteries or cables make a significant contribution to smart and energy-efficient lighting systems. With its energy harvesting technology, EnOcean offers the right technical support for smart lights in functional buildings and the smart home.

www.enocean.com

Battery-free by EnOcean

For self-powered smart switches:
"Battery-free by EnOcean" seal

The new "Battery-free by EnOcean" logo marks self-powered wireless switch solutions based on the EnOcean technology. It allows private users to readily identify the associated benefits: operation without batteries or cables, maintenance-free design, flexibility and comfort.

Effective immediately, manufacturers can use the new logo to advertise their self-powered wireless switches that integrate the EnOcean energy-harvesting technology for wireless standards, such as EnOcean, Bluetooth® and Zigbee. The added value is obvious: At a glance, the logo generates interest among private users for the benefits of wireless switches.

The certification process involves only five steps:

Step 1: The manufacturer determines whether the product meets the defined criteria of self-powered operation. These criteria can be found at: **www.enocean.com**

Step 2: The switch manufacturer obtains the application form from the responsible program manager under **info@enocean.com.**

Step 3: EnOcean carries out the qualification process, based on the submitted product examples.

Step 4: EnOcean provides the certificate, along with the "Battery-free by EnOcean" logo and the brand guidelines.

Step 5: The manufacturer is now free to use the logo on product packaging, his website and in data sheets and brochures.

Rutronik gains EnOcean as a partner for wireless products

By Sebastian Hör, PR Manager, Rutronik Elektronische Bauelemente GmbH

Rutronik Elektronische Bauelemente GmbH is adding EnOcean's products to its wireless portfolio. Rutronik is the third-largest distributor in Europe and supplies semiconductors, passive and electromechanical components as well as boards, storage, displays and wireless products. The company has more than 70 subsidiaries in Europe, Asia and America, employs more than 1,600 people worldwide.

Rutronik also became a member of the EnOcean Alliance. The two partners will begin working together immediately to market the EnOcean product range worldwide.

Expert for ultra-low-power wireless solutions

Rutronik is one of the leading distributors of ultra-low-lower wireless solutions on the market. Up to now, however, at least one button cell has been needed to supply power. EnOcean's products now enable Rutronik to offer its customers wireless technology with energy harvesting capability.

www.rutronik.com

Advertisement

Facts and figures that motivate us

→ EnOcean wireless switches do not generate electronic smog – the power flux density is **0.00013 W/m²**, far less than the power flux densities of conventional light switches.*

→ Since its founding in 2001, EnOcean has sold **5 million** kinetic harvesters and installed EnOcean components in **1 million buildings.****

→ The total number of connected IoT (Internet of Things) sensors and devices is set to exceed **50 billion by 2022,** is forecast for the facility services segment. ***

→ According to a representative consumer survey conducted by ZVEI, **one in five Germans** already use networked functions at home. Approximately **40 %** of these functions are in the area of smart lighting control. ****

→ A global market volume of just under **950 billion** dollars by **2025** is forecast for the facility services segment. *****

* Source: ECOLOG-Institut für sozial-ökologische Forschung
** Source: EnOcean
*** Source: Juniper Research, IoT – The Internet of Transformation 2018
**** Source: ZVEI 2017
***** Source: Statista 2018

→ Visit the **self-powered EnOcean world** on the web: **www.enocean.com**

EPBD 2018

The European building directive has been amended. What now?

The EU gets serious and tightens the thumbscrews: Buildings are to be CO_2-neutral by 2050, and this is already leading to a number of stricter requirements in the coming years, especially where building automation is concerned.

By Prof. Dr. Michael Krödel, Managing Director, IGT – Institut für Gebäudetechnologie GmbH

The EPBD (Energy Performance of Buildings Directive) establishes requirements for buildings, which are to be implemented by EU member states under their national laws. The directive was most recently amended on May 30, 2018. It requires the CO_2-neutral operation of buildings by 2050, with intermediate targets for 2030 and 2040.

Smart buildings

The EPBD places the focus explicitly on regulating and controlling installations. While this focus has been primarily on the building shell and the choice or design of building systems in recent years, there is clearly a lot of catching up to do in the area of regulation and control. The EPBD thus imposes a series of stipulations on “self-regulating devices,” “intelligent charging of electric vehicles,” “digitalization of the energy system,” “electronic monitoring” and “networked buildings.”

The directive also covers a “smart readiness indicator“, which is yet to be defined. Although the specific definition and calculation of this factor are still to be established, just the fact that it has been officially determined specifically for buildings greatly strengthens the building automation discipline.

Building automation is gaining ground

The EPBD imposes explicit requirements on building automation:

- **"Installation of self-regulating devices:"** A control loop needs sensors, actuators, controllers, etc. These requirements can thus be implemented only with building automation components.

- **"Smart charging of electric vehicles" and "minimum number of recharging points"** in non-residential buildings or multi-party residential buildings: The biggest problem with charging stations for e-mobility is the distribution of available charging power to the active charging stations. This is possible only by introducing load management practices and thus intelli-gently coupling the charging stations with a superordinate controller.

  Once smart BMS systems (building management systems) control the technical equip-ment within the building, it is conceivable that e-mobility charging stations will also be connected to the BMS systems in the building in the near future.

- **"Logging the actual energy efficiency"** of heating and air conditioning systems: The actual values can be reliably and continuously recorded only with a monitoring system that sensibly forms part of the overall building automation system.

Implementation in EU states

The EPBD requires the member states to establish clear guidelines, come up with measurable measures and provide subsidies (!) – including for rental apartments.

When it comes to implementation, the member states are called upon to adopt the legal and ad-ministrative regulations needed to comply with the EPBD by March 10, 2020. Soon, the German federal government will thus also have to clarify and define how it will meet the requirements of the EPBD, i.e. European law.

Conclusion

The new EPBD significantly increases the importance of building automation. The blueprint is in place, and this template must now be immediately turned into national laws and regulations.

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www.igt-institut.de
www.enocean-alliance.org

EnOcean Alliance: Supporting Developments Efforts – EEP-TOOL launched

Next to progressing and creating the system specifications of the EnOcean Alliance, the Technical Working Group (TWG) supports Alliance members by providing development tools. These tools, with focus on facilitation of development efforts, are available to members free of charge. By Norbert Metzner, Digital Concepts GmbH and Chairman of the Technical Working Group, EnOcean Alliance

To support and simplify the development of EEP-proposals and their submissions the TWG created a tool which is available to all participants and promoters of the EnOcean Alliance. Starting from the digitalization' of the existing template for EEP-submissions the tool focuses on

- guiding the user through the design stages
- avoiding misunderstandings and mismatches
- verifying and cross-checking system-critical input / data
- generating automatically the related data required for submission of the proposal

The output of the tool are the data files required for further processing by the TWG. A dedicated task-group of the TWG, the EEP Approval Committee (EAC), will review the submission at the system perspective. Standardised and verified submissions will speed up this process. Following a review by the TWG the data files of an approved profile will be stored at the members-only web-space. If a proposal is submitted in time for a scheduled EAC meeting, the cycle from submission until approval will take just a few weeks.

The tool is supported by an integrated user-manual. Currently, the second release is being specified and implemented. It will include feedback and learnings from its first version and reflect the entire submission process.

www.enocean-alliance.org

Eltako – promoter of the EnOcean Alliance

The Board of Directors of the EnOcean Alliance brings together representatives of leading international providers of building automation, smart home and IoT solutions. They share the goal of establishing EnOcean as a global wireless standard for smart buildings. Eltako has actively supported the board since the beginning of the year.

Headquartered in Fellbach near Stuttgart, Germany, Eltako has stood for experience, expertise and quality in developing and manufacturing innovative products for building installation and control technology for the past 70 years. The company has relied on the EnOcean wireless standard for more than ten years. It has been applying this standard more consistently than practically any other supplier.

Eltako Smart Home Professional – the wireless network for buildings of all sizes – is based on the EnOcean wireless standard. The self-powered and thus maintenance-free radio switches and window/door contacts with energy generators are exclusive EnOcean highlights. More than 300 wireless products, along with an extensive range of switches in four design lines based on EnOcean technology, make Eltako one of the leading players in the ecosystem.

Ulrich Ziegler, Assistant to the General Management of Eltako GmbH, welcomes the opportunity to work even more closely with the EnOcean Alliance. “By joining the ranks of EnOcean Alliance promoters, we confirm and strengthen our evolved collaborative relationship. In its role of promoter, Eltako continues to play an active role in further developing the technology, so that together we can meet the challenges of the smart home market.”

Successful heating

does not interfere

Future-proof heating control system reduces energy consumption by 60 percent

The Barcaccia Fountain at the Piazza di Spagna is one of the most popular tourist attractions in Rome. This is also where the Collegio San Giuseppe Istituto De Merode is located, a Catholic school within the Brothers of the Christian Schools teaching congregation. To improve the energy efficiency of the historical building complex, systems integrator CTI Sistemi was hired to renovate the heating system.

By Mirko Vincenti – Market Manager Infrastructure and Building Automation, Beckhoff Automation S.r.l.

system renovation

with historical building fabric

This was no easy task, considering the strict rules for the protection of historical monuments that do not allow interference with the building fabric. CTI came up with a solution that employs EnOcean-based wireless sensor technology, which can be integrated seamlessly with the Beckhoff PC-based control platform.

In addition to the actual school, the historical complex includes two adjacent buildings that house an auditorium, cafeteria, chapel and the friars' rooms. Three hundred cast-iron radiators are used to heat an area of roughly 5,000 square meters (53,800 square feet). With an output of almost two megawatts, the heating system circulates more than 45,000 gallons of water through the system. "To reduce our high operating costs and make the entire heating system more flexible and efficient, we decided to implement a new system with intelligent building control technology," says Friar Alessandro Cacciotti, director of Collegio San Giuseppe Istituto De Merode.

A project that must comply with many requirements

To implement the system, the school hired CTI Sistemi, a company with many years of experience in designing, installing and maintaining building technology systems. "While the fabric of the buildings had to remain untouched, the control architecture had to be flexible and open for future expansions," explains Fabrizio Camagna, general director of CTI Sistemi. To comply with these requirements, CTI decided to combine EnOcean wireless, batteryless sensor technology with a PC-based control solution from Beckhoff.

EnOcean delivers maximum flexibility without wires

"Using wireless valve actuators and sensors based on the EnOcean telegram messaging system delivers significant technological and financial benefits: high design flexibility, easy integration into existing buildings without having to run wires and reliable communication," says CTI Sistemi technician Luca Camagna.

Collegio San Giuseppe decided to install Thermokon valves, because they can be integrated seamlessly into the Beckhoff control system architecture. The radio-based, batteryless valves harvest their energy supply from the environment.

PC-based control as integrated control platform

An embedded PC CX5120 handles the monitoring and control of the entire heating system, including heating and hot water preparation, pumps and more. "The monitoring application was developed on the basis of our software platform," explains Fabrizio Camagna. "It is a building and energy management system that perfectly integrates with the Beckhoff control architecture.

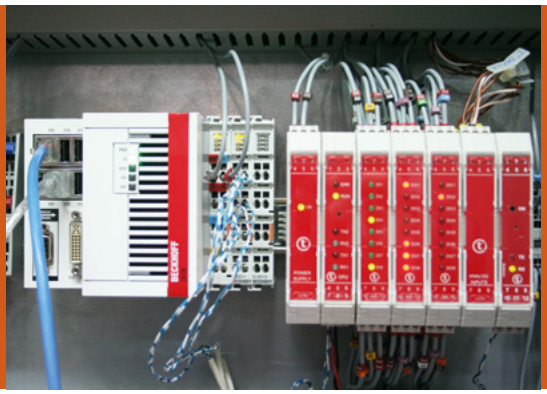
In addition to conventional SCADA functions, it features a series of functional extensions for energy data management and quality monitoring that heating engineers can parameterize graphically." The system also uses compact CX9020 Embedded PCs to control the roughly 300 closed loops and all heating valves throughout the building. Since the application is web-based, it supports remote access from any PC, smartphone or tablet.

Significant efficiency improvements

The system was equipped with a real-time consumption metering system that continuously compares current readings with historical values. "After the second year, the system recorded methane consumption that was 40.5 percent below the previous year's reference value. Considering that more than 100 tons of CO_2 were not emitted into the atmosphere, we achieved a significant reduction in our carbon footprint," Fabrizio Camagna sums up the results of the heating system upgrade project.

www.beckhoff.it
www.sangiuseppedemerode.it
www.cti-sistemi.com

From left: Luca Camagna – specialized technician of CTI Sistemi, Friar Marcellino Zuccari and Friar Alessandro Cacciotti – director of the San Giuseppe De Merode College, Fabrizio Camagna – owner of CTI Sistemi – and Mirko Vincenti – Infrastructure and Building Automation Manager of Beckhoff Automation Italy



Beckhoff controller CX5120 and fieldbus components

Homes of the future:

Udo Petzoldt took up his new position as CEO of the Kulmbach und Umgebung eG housing cooperative in 2012, and he immediately had a whole lot of work to do. He can now rightly say, “We are thoroughly digitalized.” From roof inspections with drones to proprietary heating cost billing software, few processes within the Kulmbach housing cooperative are still analog today. By Jan Frederik Harksen, CEO of ZP Zuhause Plattform GmbH

The apartments are getting smart

Since 2016, the Smart Building System from Zuhause Plattform, which uses self-powered EnOcean sensors, has been part of the basic equipment in new buildings and extensive renovation projects. With the building control system, the housing cooperative offers its tenants a wide range of different services, at the same time digitalizing its own building workflows.

The video intercom increases security in the properties, while names on the digital doorbells can be changed from the office at a press of a button. If a tenant loses a key, it can be disabled in seconds, while repairmen can gain access to the building without complications.

In the future, blinds will be controlled via the system and the ventilation can be optimized. A smart heat control system, combined with real-time consumption feedback, helps the residents save energy. Collecting the consumption values relevant for billing from heat meters, water meters and heating cost allocators was the first step toward enabling tenants to handle their own heating bills.

Fair billing of heating costs

The Kulmbach housing cooperative has been working on the idea of self-billing for some time now. The goal is to quickly evaluate and easily bill available measured data at any time. Wireless systems and open standards such as wireless MBus/OMS form the basis for independence.

In 2017, the Kulmbach housing cooperative joined forces with Zuhause Plattform to establish the “Heizkosten Plattform” to develop a web-based heating cost billing software, to test it on its own premises and to offer it to other landlords and housing companies. In 2018, the first heating bills

the Kulmbach und Umgebung eG housing cooperative

As the first provider in Kulmbach, the cooperative building society makes car sharing with meiaudo possible.

were created with this proprietary billing software, which will be available to other users in July 2019.

From landlord to service provider

In the future, the Kulmbach housing cooperative would like to offer its tenants additional services via the WohnungsAdapter communication endpoint, from medical support to purchasing services. With its own fleet of electric cars and scooters, the housing cooperative has already laid the foundation for living with mobility.

Assisted living is another important topic. Therefore, many of the apartments are outfitted with appropriate equipment as part of a renovation project, from elevators and large bathrooms to the Smart Building System with a self-powered emergency call button. The Kulmbach housing cooperative has already signed a cooperation agreement with the local workers' welfare association, which is being continuously fleshed out.

www.zuhause-plattform.de

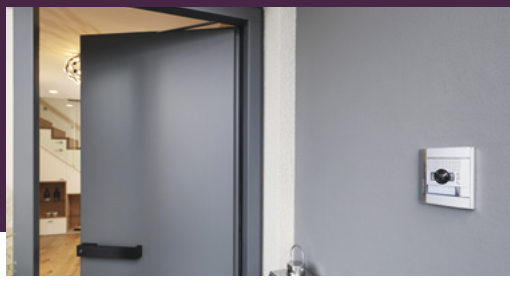
The majority of the newly built or renovated apartments will be equipped appropriate to the needs of elderly residents.

A smart urban villa for ultimate comfort

By Holger Heid, Product Manager, WeberHaus

myHomeControl shows on a central touch screen where in the house lights are on or off.

The house control system ensures security.



With its new model home in Fellbach, Germany, WeberHaus presents a rare and clever jewel: straight lines, cubic forms and cool colors on the outside, comfortable living areas, a cozy atmosphere and warm wood elements on the inside. Apart from the smart villa's modern and comfortable appearance, it also earns high marks through maximum energy efficiency and smart home control.

Smart home

Thanks to the "Home4Future" concept, the model house meets what is currently the highest energy standard: KfW 40 Plus. This is due to the super-well-insulated ÖvoNatur Therm building envelope, a PV system with 28 modules (8.4 kWp), a powerful battery storage unit (10.2 kWh) and the WeberLogic 2.0 home control system, which uses the established EnOcean wireless standard for communicating with the individual elements. This approach ensures a smooth exchange of information. Not only does the home control system provide central control of all lights and venetian blinds, but entire scenes, individual temperature control, occupancy simulations and much more can also be implemented. When users are away, they can manage all networked functions from a tablet or smart phone.

The innovative, high-end myHomeControl solution offers additional functions, such as energy management, integration of heating and ventilation systems as well as floor plan views. For example, a central touchscreen shows where lights are on and off in the house and where windows are open or closed.

High Living Comfort

The system also offers a smart intrusion prevention function for greater security. Before the resident leaves the house, a single tap is all it takes to arm the alarm center in the home management system. If an intruder tries to break in, all lights go on, the venetian blinds are raised, and the integrated stereo equipment emits an ear-splitting noise. The home control system is also connected to Amazon's Alexa voice assistant. Special mention should be made of the ability to connect to Apple HomeKit® with Siri®. The intuitive app makes the system very easy to use with familiar Apple conventions.

www.weberhaus.co.uk

HomeKit® and Siri® are trademarks of Apple Inc.

Connected for smart analysis

A smart home in the UK was developed in accordance with the four following pillars: energy, economy, environment and comfort. Among others, EnOcean-based self-powered sensor solutions enabled this future IoT home concept. By John Corbett, Sales Director Northern Europe and Middle East, EnOcean GmbH

EnOcean together with its partners Living Map and IBM realized the smart building solution used in the house, making it a role model for an IoT installation that can be adapted to the occupants' individual needs. For this purpose, self-powered switches and sensors are connected to the IBM Watson IoT Platform, a fully-managed cloud-hosted service, via the Smart EnOcean Gateway from Digital Concepts.

The system's analytics can be used to properly understand the ongoing processes in the house, e.g. for a comprehensive but easy-to-handle energy management system. The task is to bring all data points together to give the occupants recommended action that they can take to reduce energy consumption in a simple and understandable way, e.g. turn the heating off when the window is open.

Sensor data for real-time action

Living Map is a digital data platform that enables the user to access real-time information for improving operational efficiencies and to reduce costs. The solution's intuitive and simple interface visualizes the data from the EnOcean-based self-powered sensors, including window contacts, CO_2 sensors, temperature and humidity sensors, water leakage sensors as well as PIR and motion sensors across the building.

Flexible installation and expandability

The self-powered wireless sensors are enabled by EnOcean's technology and harvest their energy from the surrounding environment. Therefore they work without batteries and wires, enabling an easy installation on different building material and requiring no maintenance. Additional sensors can be added to the system at any time without any construction work needed.

www.ibm.com/watson
www.livingmap.com
www.enocean.com

Echoflex Solutions provides top-shelf lighting for Langley Events Centre

Langley Events Centre is a multi-purpose sports arena in British Columbia, Canada. The Centre recently upgraded its lighting from metal halide fixtures to LED-driven fixtures. The upgrade offered more choices to the production staff at the arena, but also presented some control challenges.

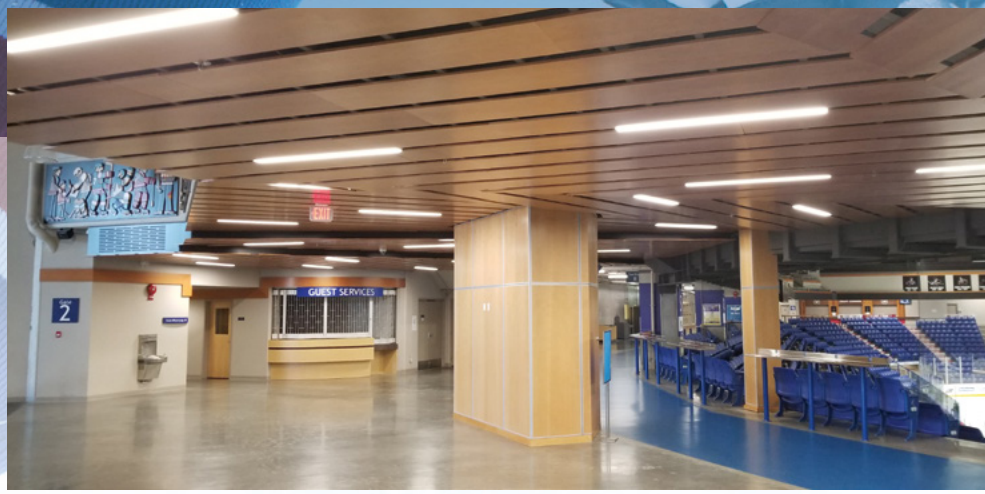
By Jacob Coakley, Marketing and Communications Specialist for ETC, Echoflex Solutions, Inc.

A Vancouver Giants hockey game at the Langley Events Centre

First and foremost was the control wiring for the fixtures in the concourse surrounding the arena. Originally installed with in-slab wiring, pulling new wiring would have been too difficult and expensive – and attaching new conduit to the concrete was unacceptable, aesthetically. The Centre needed a wireless control solution, so they turned to Echoflex Solutions and the EnOcean protocol.

"I knew Echoflex Solutions and liked their technology – but I had reservations about how the system would work in an arena because I knew we would be pushing boundaries," says Paul Darlington, VP at Quantum Lighting, the firm tasked with designing the new lighting system for the Langley Events Centre main concourse/ walking track and hospitality areas.

control



Concourse lights at the Langley Events Centre are controlled wirelessly, thanks to Echoflex Solutions and the EnOcean protocol

Transmission of the radio signals

Darlington's concerns were based on distances and structure. At the arena, the playing surface is 200 feet long and the concourse is 400 feet from one end to the other. All of this is in a building made with concrete walls and pillars and, of course, filled with people for events. This definitely created a hostile environment for wireless signals, but the team at Echoflex was up to the challenge.

A Mosaic Tessera Touchscreen from Echoflex Solutions' parent company ETC syncs the wireless control with show lighting.

"The Echoflex team were quite helpful with the design – putting together a whole layout, including distances between transmitters, receivers, and repeaters," says Darlington. He also appreciated the fact that Echoflex technology is fixture agnostic, and can work with any system. "We used different types of fixtures, and Echoflex worked with them all. It's good that the system is independent and not tied to a specific manufacturer."

"To Echoflex's credit, we haven't had one call back on any issues on the control side. There's been no problems with the wireless signal or EnOcean protocol," says Darlington.

Arena integration

But that wasn't the only trick Echoflex had up its sleeve. Color-changing LEDs and automated fixtures in the arena, controlled by a Unison Mosaic system provided by ETC, gave the production staff the ability to create a little flash and dazzle during events. And now they wanted the ability to integrate the concourse lighting in with the show lighting.

A simple site visit from an Echoflex tech tied the concourse lighting in with the arena lighting, and now the production team has unified control over all their lighting from a touchscreen.

The strength of Echoflex's wireless capabilities (thanks to the EnOcean protocol) and its easy integration into the Mosaic show-based control system, have more than impressed staff at the Langley Events Centre. It allows the individual lighting of each event to fit the client's needs from event to event.

www.echoflexsolutions.com

Showcasing
the possibilities

Energy efficiency, comfort and security – Powerful building automation makes LAE Engineering's new building stand out, based on the WAGO I/O SYSTEM 750. By Michael Dewald, Sales Business Southwest, WAGO

In 2017, LAE Engineering, an engineering service provider specializing in building technology, industry and power generation, decided that it was high time for new corporate headquarters. "It had reached the point where our employees were distributed among five locations, and we were running out of space," remembers Werner Rensch, managing director and co-owner of the company based in Wiesloch, in the Rhein/Neckar region of Germany.

LAE's main concern when drawing up its plans was to create a modern working environment for its employees. Today, the building provides space everywhere for lounges and meeting islands, and the teams have a free choice of how they want to organize the rooms – as group workstations, open-space areas or individual offices.

Geothermal heating and cooling

LAE relies on efficient geothermal energy for heating and cooling. Eleven bore holes extending up to 100 meters into the earth ensure hot water at a constant 14 degrees. In winter, this water is used to heat the rooms with floor heating via a heat pump; in summer, the same system cools the rooms. With its modern heating system, the building meets the requirements of the KfW Efficiency House 55 standard, which means that it consumes 45 percent less energy for heating than does a building constructed according to the current standard.

LAE is certified as a WAGO solution provider for the building technology business area. “We therefore naturally used solutions based on the WAGO I/O System 750 for building automation,” remarks Rensch. A node with a 750-831 controller is located on each of the four floors. A superordinate PFC200 controller is also installed on the ground floor, which controls, for example, the geothermal system and receives and distributes the data from the weather station installed on the roof.

Controllers manage all disciplines

The controllers on the floors control all other building technology disciplines. “The great advantage of the WAGO system is that it provides the right interface for practically every system,” Rensch explains.

For example, the SMI bus controls the blinds, which are activated by the WAGO controllers via this bus depending on the position of the sun. The data for this purpose comes from the connected weather station. The employees can also adjust the blinds according to their own needs and thus override the controller’s automatic function. The lights are controlled in a similar way. “All lights throughout the building have a DALI interface,” says the managing director.

Rearranging rooms without problems

All switches and pushbuttons for lights, blinds and heating as well as the room thermostats are based on the EnOcean protocol. This wireless protocol offers a high degree of flexibility, because the controls do not have to be wired to the controller. “This allows us to quickly reorganize the space as needed,” Rensch explains. “Flexibility was a top priority for us, and so we don’t have any supporting elements on the floors outside the stairwell.”

All walls have a lightweight design and can be repositioned. The EnOcean-based controls are then easily remounted on the wall and assigned to the lamps, heating valves and blinds in the new areas. “The new assignment is made in the controller and takes only a few minutes to complete,” Rensch explains.

www.wago.com

“We wanted to construct a building that could serve as a reference for all our divisions,” says LAE Managing Director Werner Rensch.

LAE’s approximately 65 employees can look forward to a new, ultra-modern working environment.

At the heart of the Kermi Smart Home solution, x-center base (center) regulates the interactions between all heating components.

Fully connected:
Heating as the hub

As another plus point, the heating system can become the central control element for additional building system components, which can be easily integrated, thanks to the open EnOcean interface.

Smart control of all heating components

The Kermi smart home solution makes it possible to set various timer programs – from home or while on the road, using a browser interface. At the heart of the solution is the x-center base energy and comfort manager, which communicates the desired temperature for the particular room to the corresponding radiator or floor heater wirelessly or over a cable connection.

The operation of the x-change heat pump, including heat storage and any PV power integration that may be present is coordinated in the background and optimized for the actual heat demand. The controlled x-well domestic ventilation system can also be integrated and controlled together with the heating system. Heat and fresh air supply can thus be intelligently combined, and, through this interaction, ensure an optimum room climate.

Thinking ahead: Getting started with the smart home

Smart heating also means that the system thinks for itself and automatically detects relevant situations in order to increase efficiency and comfort. If the heat input in the room increases due to sunlight or a large group of people, x-center base predictively adjusts the heat supply.

The comfort and energy manager from Kermi can also become a smart home's central control element for builders and renovators. After all, also products of other manufacturers can be integrated via the open EnOcean interface and controlled together – from window contacts to blinds.

www.kermi.com

Anyone who wants to intelligently control their heating system usually thinks this means regulating the radiator or the floor heater. But the entire system plays a role. The smart home solution from Kermi therefore incorporates all heating components, such as heat generation and storage, along with home ventilation.

By Andreas Jahrstorfer, heat pump and smart home expert, Kermi

# of a smart home

Kermi Smart Home intelligently interconnects the heating system components as well as additional home functions via the open EnOcean interface.

Advertisement

SAUTER EY-modulo 5:
bidirectional wireless communication,
shows what's really happening in the room.

SAUTER ecoUnit1: room operating units with innovative EnOcean wireless technology.

- Display with easy-to-understand symbols, shows a lot of information about the room.
- 'Energy harvesting' principle: energy-saving operation; needs no maintenance; uses a solar cell instead of a battery.
- Attractive, neutral design; also fits non-SAUTER frames; can be freely labelled.
- Remote wireless gateway provides great flexibility and freedom when positioning the transmitter and the receiver.

www.sauter-controls.com

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Creating Sustainable Environments.

Smart Home – try before you buy

Future property owners want to get a sense of what it feels like to live in a smart home on a daily basis before they decide to buy one. By Günther Ohland, GO Redaktionsbüro

Prefab house manufacturer WeberHaus is therefore upgrading more and more model houses to smart homes. The WeberLogic system relies on the cross-system myHomeControl software offered by the Swiss company BootUp.

The technology in the WeberHaus smart homes uses self-powered and maintenance-free EnOcean sensors and actuators. The residents themselves place the sensors, such as light switches, motion detectors and room thermostats, wherever they make the most sense, taking the furniture into account. The switching and dimming actuators, however, are located centrally in a control cabinet in the home's utility room, where they are easily accessible.

Flexible home control

The photovoltaic system, battery storage unit, heating and ventilation system and the networked Sonos speaker can be seamlessly integrated and used with myHomeControl. There are no isolated applications, since myHomeControl makes sure that they are all interoperable. Of course, Amazon Alexa is also on board, and myHomeControl also makes things easy for those who would like to visualize and control their homes with Apple HomeKit®.

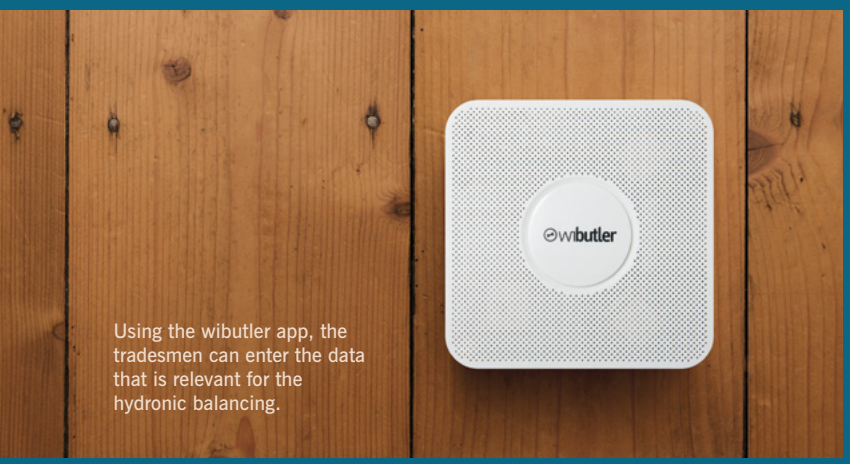
WeberHaus currently has model homes in Wenden, Fellbach and Cologne-Frechen, Germany. All of them are equipped with touchscreen controls. The ones in Wenden and Fellbach display the following functions, among others:

- Energy flowchart (PV system and solar battery)
- Alexa voice control
- Sonos connection
- Apple HomeKit®
- Intrusion alarm function based on window sensors and motion detectors with a deterrence scenario: lights on, blinds up, Sonos speaker as a siren, immediate push alert on the residents' mobile devices and possibly those of a security service provider

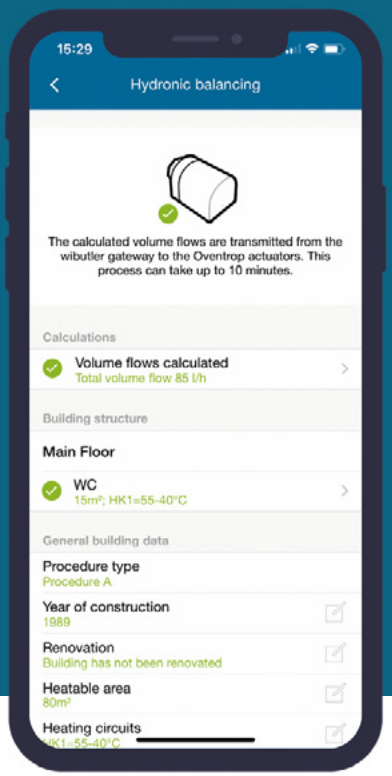
www.weberhaus.co.uk

HomeKit® is a trademarks of Apple Inc.

Hydronic balancing: A smart way to increase comfort and energy yield



Using the wibutler app, the tradesmen can enter the data that is relevant for the hydronic balancing.



Hydronic balancing has long been an important topic of discussion in the heating sector, and yet widespread implementation is still a long way off. Together with Oventrop, wibutler now offers an option for easy and precise hydronic balancing.

By Ralf Gernegroß, Product Management, Connectivity Solutions GmbH / wibutler,
Nina Piprek, Marketing, Connectivity Solutions GmbH / wibutler

Hydronic balancing: What is it?

Research such as the Optimus study has shown that hydronic balancing allows a savings potential of up to 21 percent. After all, the water in a hydronically balanced heating system is optimally distributed to ensure the necessary volume flow of all radiators.

If a system is not hydronically balanced, the water is unevenly distributed within the heating system. Radiators near the pump are oversupplied, while those farther away do not get enough hot water, so that they cannot heat the room to the desired temperature, resulting in high heating costs.

Pressure-independent thermostat valves (radiator valves) are a key adjusting component for hydronic balancing. They automatically adjust the volume flows to the particular radiators in the heating system.

Hydronic balancing with wibutler

With wibutler, the valve is no longer adjusted directly on the valve but instead on the Aktor MH CON B (EnOcean) thermostatic radiator valve from Oventrop. The setting is determined in wibutler individually for each valve according to Method A and automatically transferred to the valve. The latter then limits the volume flow.

Installers can easily and comfortably enter the data relevant to the calculation in the wibutler app. Data such as year of construction and renovation, usable space heated, outgoing and return temperatures as well as room data is requested step by step. If the room heating loads are known, they can be entered directly.

www.wibutler.com

Integral planning brings success

Construction projects of all types are constantly increasing in complexity. The requirements are also becoming more stringent with regard to preserving resources, energy efficiency, life cycle costs and securing the value of the property. Integral planning is the key to this.

By Magnus Müller, Head of Sales & Marketing, LAE Engineering GmbH

As part of integral planning, LAE precisely aligns the building and the building technology to fit with one another, and thus ensures optimized consultation at each interface between all those involved, from the architects through to the procedural engineering office, the developers and finally to the end customer. On this basis, it is possible to optimize the whole project at an early stage with regard to economic aspects, ecological objectives and customer desires.

In addition, LAE focuses on building automation at the beginning of each individual planning process. Experience demonstrates that the functions of building automation need to be discussed long before the property is handed over. They are the key to handing over a functioning and functionally reliable building. This procedure guarantees compatibility and avoids incorrect sizing. Synergies are recognized and used, as is potential to increase efficiency.

"Alignment of specifications through planning and execution significantly shortens the planning and development process, reduces the number of changes made to the plan, reduces costs and increases the quality of the building and its energy performance as a whole" says Frank Lettmann, divisional head of LAE | Planning.

Involving digital solutions

Combining flexibility and sustainability and thereby not losing sight of the functional aspect is the goal of every integral planning process at LAE. Increasingly, maintenance-free IoT appliances need to be considered, and communication between various appliances produced by different manufacturers needs to be guaranteed – whether they are wireless or cabled.

"Membership in the EnOcean Alliance is important in this respect, in order to find out about new wireless solutions, but also to bring ideas from our project work to the Alliance", said Frank Lettmann in conclusion.

www.LAE.eu

A look behind the scenes of an hypermarket

GTBox saves energy and ensures a perfect ambience

In the Hypermarket Intermarché in Longpont-sur-Orge near Paris the lighting of the sales area is dimmed and adapts according to the periods of the day. To makes this possible EnOcean/Dali dimming gateways (Eltako and Deuta-Control) have been installed directly on the lighting strips.

The GTBoxes from SavNTec transmit EnOcean orders to the actuators, which control ballasts using Dali protocol. Using Deuta-Control actuators it is even possible to remotely configure Dali with EnOcean without physically connecting the actuators.

By Michel Coté, CEO, SavNTec

Easy implementation

GTBox is a solution build by SavNTec. Its web architecture, the Enocean technology integration and its multi-site design simplifies the technical and energy management of buildings.

The EnOcean integrated mesh network technology allows an even better radio range.

Technical data:

- Sales area: 3800 m²
- Electricity consumption of store LED lighting: 36 kW
- Heating power: 320 kW

Nice and cosy temperature – without any additional cables

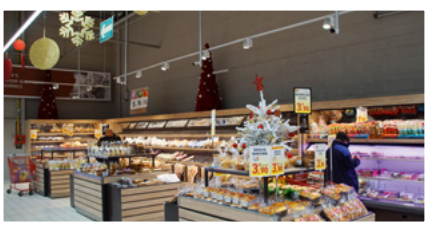
The heaters in the sales area are also controlled by GTBox. EnOcean temperature probes (NodOn and Thermokon) were placed directly on store shelves, measuring the true temperature experienced by customers. They are powered by the natural and artificial light in the store.

Dry contact actuators (Eltako) replace the programmable thermostats. The GTBoxes thus measure the temperatures in the shelves and drive the heaters, all without having to go through additional cables. The client user masters the heating instructions area by area, and according to the activity of the store.

An outdoor temperature sensor made by EnOcean (Thermokon) measures the outside temperature and conditions for the operation of the many air curtains in the shopping mall. The system also controls the lighting of the shopping mall, outdoor lighting and night-time curtains for refrigerated display cases

Thanks to GTBox, the customer saves 30 per cent on the gas bill and 18 per cent on the electricity consumed by lights. EnOcean and its efficient implementation play a major role here and ensure a very fast return on investment.

www.savntec.fr



Radio technology for wireless freedom

The ability to control the lights has become a crucial factor in many modern lighting systems. Thanks to the diverse possibilities offered by the digitalization of light, this development continues to gain ground.

By Norbert Hammer, Head of Technical Service, Regiolux GmbH

The overall building lighting concept is usually critical when it comes to finding a practical and cost-effective solution. Regiolux lighting systems allow the user to implement different concepts and decide whether the systems are controlled wirelessly or whether they have a classic wired concept.

Tapping potential with EnOcean light controllers

Regiolux relies on EnOcean controllers in its wireless and radio-controlled lighting systems, which offer a high degree of flexibility. This concept brings together aspects of flexibility and energy efficiency. The necessary components are easy to upgrade, because no new control cables have to be installed for the luminaires.

WLAN routers, firewall definitions, additional devices and remote controls as well as cable guides, on the other hand, generally involve a great deal more effort. A lighting system can be comfortably controlled with software by using a wide range of parameters:

- on/off/dimming
- free activation of light level and light color (with DT8)

- scene and group callups
- individual addressing
- timer
- light control
- motion detection
- basic DALI parameter settings

The easily accessible controller is built into a control box. In the set variants, the connecting cables are preassembled. They are designed as a complete solution to provide flawless plug and play capability without any programming work. This is an enormous step forward in the direction of perfect light equipment with Tunable White or Human Centric Lighting.

www.regiolux.com

Efficient and sustainable building organization

Wireless and self-powered integration of doors into the building automation system

Digitalization with the aid of distributed sensors and a cloud-based infrastructure makes it possible, for example, to automate room use management. Room occupancy and thus the use of cost-intensive resources such as heating, air-conditioning and lighting, along with staff and inventory, can be optimized via sensors, based on usage data.

By Dirk Heumann, Head of Sales Germany, business unit locking systems for doors and furniture, Schulte-Schlagbaum AG

SAG Smart Line is the first family of mortise locks to be equipped with the battery-free EnOcean wireless technology, thus making it possible to integrate doors into the building automation system particularly efficiently and sustainably.

Wireless solutions

More than 90 percent of buildings are existing real estate, which means that wireless solutions are the systems of choice for retrofits. Wireless sensors, which supply the necessary data from numerous points within the building, always form the technological foundation. In particular, the EnOcean wireless standard has become established as the communication protocol. It is used in more than 1 million buildings around the world.

Easy networking

IoT gateways interconnect the sensors and actuators over the Internet, also using bus systems such as KNX or cloud-based platforms like IBM Watson, Amazon Echo, Microsoft Azure, Apple HomeKit, Google Home and Crestron as needed.

Energy harvesting

Wireless locks use mechanical energy (pressing a door handle or sliding a bolt) with the aid of a generator to produce the energy needed for wireless transmission. Energy harvesting in wireless technologies avoids the limitations of wired power supply or batteries.

Flexible control

To increase building security, the SAG mortise locks can transmit door movements (operating door catches or bolts) as a preventive measure.

Easy and cost-effective retrofits

Doors to the building can be quickly and cost-effectively retrofitted or integrated into the building automation system during operation by replacing the existing mortise locks with SAG Smart Line door locks.

www.sag-schlagbaum.com

The OPUS SmartHome Gateway: Central module for controlling OPUS greenNet components with mobile devices

Works with Apple HomeKit

OPUS SmartHome Gateway is compatible with Apple HomeKit®

With OPUS greenNet to the home 4.0

By Thomas Hölscher, Head of Product Management OPUS Building Systems Technology, JÄGER DIREKT

With the OPUS SmartHome Gateway (certified for Apple HomeKit), JÄGER DIREKT combines the EnOcean world, the traditional wired installation and the IP-based control of homes via Apple HomeKit®. This offers countless new possibilities, more simplicity and flexibility for the SmartHome – in new buildings as well as in retrofitting without the need of renovations, thanks to the wireless EnOcean radio technology.

The OPUS SmartHome Gateway certified by Apple® enables for the first time a flush switch program, which is fully usable with Apple HomeKit® via App on smartphones or tablet or via voice command to Siri®. Expandable and user-friendly solutions for lighting, heating control, security, shadowing and energy optimization can be easily implemented in this way.

The Gateway is connected to the WLAN router in your home via cable. Individual extensions, additions of further components or solutions carrying the logo “works with Apple HomeKit” are possible at any time.

The EnOcean radio technology enables the wireless switching via wall-mounted transmitters, which can be positioned freely. In this way, it is possible, for example, to quickly and easily realize a comfortable shading solution – only two on-site switches and one wall-mounted transmitter, which can be positioned freely, are necessary for the roller shutter and blind control.

An OPUS BRiDGE switch is connected to each roller shutter / blind motor in order to control the shading individually at each window. All taught-in blinds or roller shutters can be controlled together via a group switch, which can be positioned freely – in connection with the HomeKit®-compatible Gateway, this is possible via voice command to Siri®, for example.

Apple®, Apple Home-App®, Apple Watch® and iPhone® are registered trademarks of Apple Inc., in the United States and other countries. HomeKit® and Siri® are trademarks of Apple Inc.

New member of the OPUS product family

The development continues on the OPUS greenNet SmartHome system. The newest member of the OPUS product family is the 16-amp OPUS BRiDGE as part of the "Upgrade your Home" concept. Loads of up to 16 amps can be safely switched using EnOcean wireless technology. The double-pole cut-off means switching complies with outdoor usage regulations. To optimize the heat dissipation and signal range, the OPUS BRiDGE 16A consists of a separate receiver and power unit connected by a cable and installed in a conventional electronics box.

The new OPUS BRiDGE 16 Ampere

In combination with the OPUS SmartHome Gateway, the OPUS BRiDGE 16A is compatible with the Apple HomeKit® and can be controlled via Apple devices. Connected devices can be integrated into rules, scenes and automations. Depending on the application, the Apple Home-App® can be used to set on and off times for outdoor lighting, for example. Energy-intensive, infrared patio heating can thus be controlled via an iPhone® or Apple Watch®.

Along with the existing OPUS BRiDGE 1- and 2-channel products and the BRiDGE for shutters, blinds and dimmers, the OPUS BRiDGE 16A is a further addition to the portfolio of intelligent flush-mounted switches in the OPUS greenNet system.

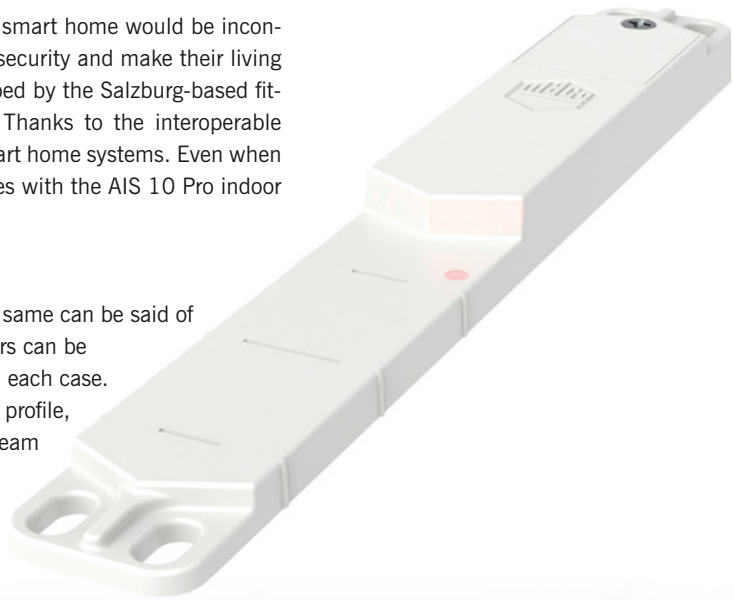
www.myopus.eu

mTRONIC gets along with everyone

The mTRONIC multisensor from MACO is based on the EnOcean wireless protocol. This makes it flexible to use and compatible with all common smart home solutions.

By Stefan Wajand, Product Management, MACO Group

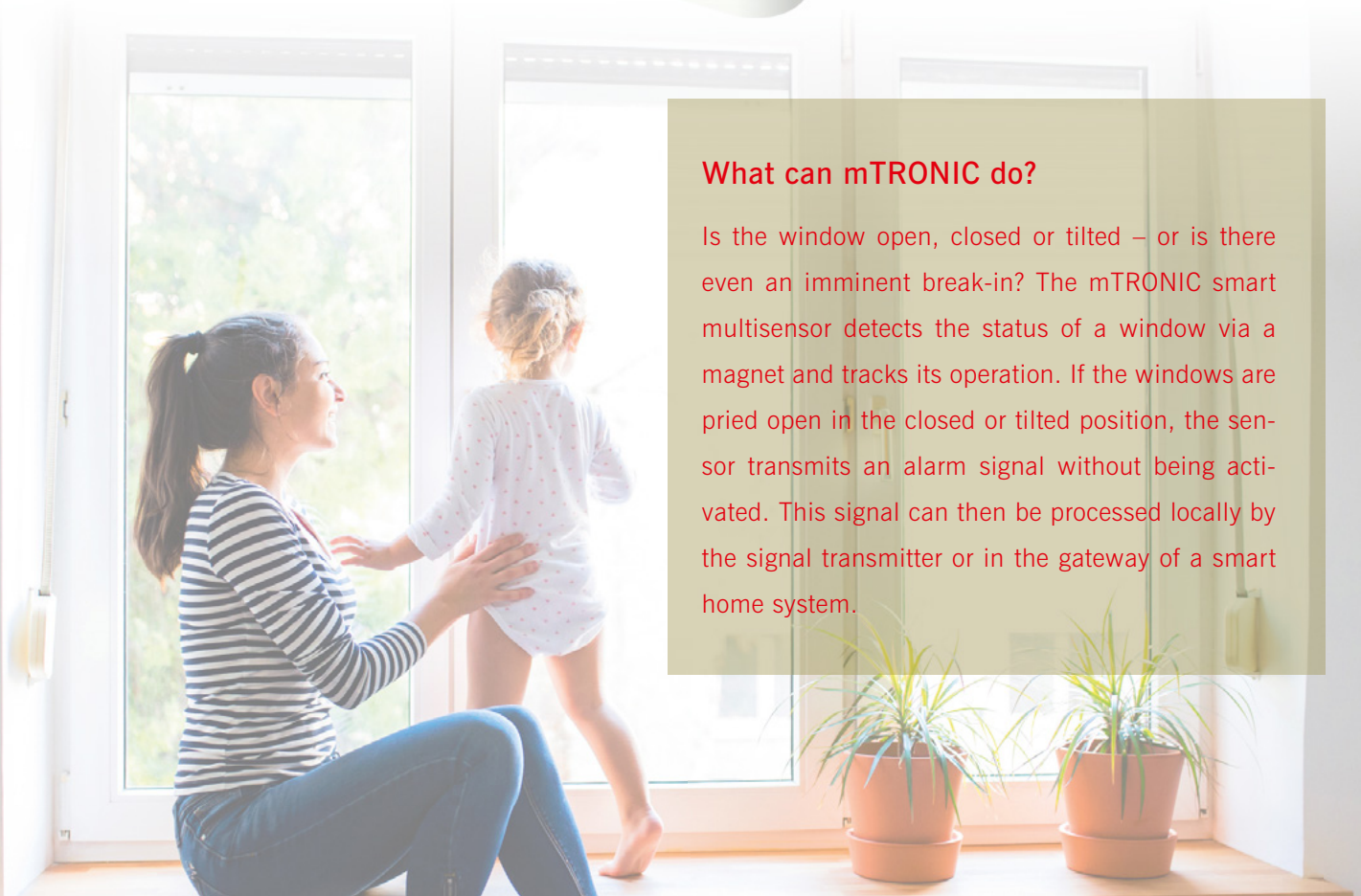
Afriso, Eltako, Homee, IP-Symcom, Mediola and Somfy: The smart home would be inconceivable without these gateway names. They give end users security and make their living space more comfortable. The mTRONIC multisensor, developed by the Salzburg-based fittings manufacturer MACO, gets along well with everyone. Thanks to the interoperable EnOcean wireless protocol, it is very easy to integrate into smart home systems. Even when it comes to local building protection, mTRONIC communicates with the AIS 10 Pro indoor sirens and Afriso solutions via EnOcean.



mTRONIC is a team player

In the world of multisensors, versatility is the trump card. The same can be said of the applications: Windows, sliding elements and entrance doors can be equipped with mTRONIC, and the same component is used in each case. The smart sensor is also so tiny that it fits with practically any profile, regardless of the fitting or manufacturer. This also makes it a team player in every respect.

www.maco.eu/int-en



What can mTRONIC do?

Is the window open, closed or tilted – or is there even an imminent break-in? The mTRONIC smart multisensor detects the status of a window via a magnet and tracks its operation. If the windows are pried open in the closed or tilted position, the sensor transmits an alarm signal without being activated. This signal can then be processed locally by the signal transmitter or in the gateway of a smart home system.

For hotel applications, it is possible to create a second control loop. Thus, living room and bathroom can be controlled separately within one device.

Multifunctionality combined with premium design

Attractive design, intuitive operations, high flexibility in adapting to most different requirements. The "JOY SR Fancoil/HC" room thermostat with EnOcean-based RF and Modbus interface enables an efficient and comfortable control of room climate.

By Dominique Alt, Product Management, Thermokon Sensortechnik GmbH

The "Joy SR" convinces by premium design: a slim housing, precious touch interface made of scratch-proof glass, an illuminated power button and large high-resolution backlit display.

As of now, the intelligent Modbus room thermostats are available with an integrated EnOcean based RF interface for seamless integration of wireless products. The hardwired digital or analog inputs/outputs for the efficient control of HVAC components (e.g. valves, fan coils) can be used at the same time as the integrated EnOcean channels.

EnOcean-based wireless transmitters such as window contacts or key card switches for energy saving, occupancy or temperature sensors for second controls loop (e.g. bathroom) or for change-over applications can be easily integrated without the need of any wired devices. Up to six wireless valve actuators (SAB05/SAB+) can be controlled, thanks to the message server functionality.

"Energy efficiency" is certainly one of the key features of the JOY SR. The integrated smart ECO function enables a resource-saving air conditioning by means of defined parameters and integrated EnOcean products (e.g. window contact, key card, etc.). In addition, demand-based user profiles can be set up in terms of a scheduler.

www.thermokon.com

Smart home control at the press of the Soft Button

The entire home can now be controlled at the press of a button with NodOn's new EnOcean Soft Button. This small companion has three customizable press types and is compatible with any products that support the D2-03-0A profile. The perfect choice for simplifying interactions with a smart home!

By Coralie Feillault, PR & Communication Officer, NodOn

Examples of configured scenarios: The garage door opens or closes. The temperature should adjust to 20° degrees and all blinds will be closed.

A small and smart scenario launcher

Three configurable press types (single press, double press, long press) allow the user to launch defined scenarios on his home automation compatible gateway, for example a goodnight scenario: close all the roller shutters of the home and turn all the lights OFF. The Soft Button presses can be configured according to the user's life habits to control lighting, heating, roller shutters or garage door

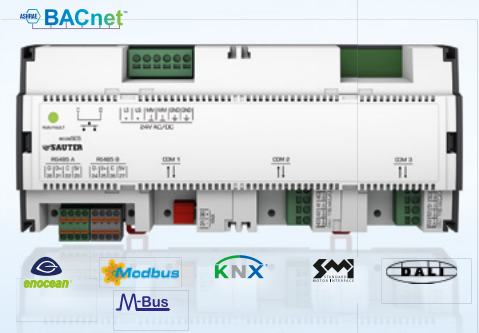
Magnetic – place it anywhere

The Soft Button is magnetic and comes with a metallic sticker support, to be mounted and used in the preferred location. Users can press the button on the wall while entering a room or stick it on a glass or credence.

Waterproof as well as shockproof

Regarding its specifications, the Soft Button withstands shocks thanks to its white silicon case. It is waterproof (IP 67) and washable and therefore can be used in the kitchen, a bathroom or near a water source. The Soft Button has a 5-year battery life and is available at an attractive price.

www.nodon.fr/en



Integrated room automation

for more comfort and efficiency

The room controller SAUTER ecos505 enables both seamless integration into the building management system and the automation of the primary installations. SAUTER therefore combines energy consumption and generation thereby allowing demand-controlled regulation of the supply media. By Roland Hofstetter, Product Management Room Automation, SAUTER Head Office,

SAUTER ecos505 is a freely programmable BACnet building controller (B-BC) and part of the SAUTER EY-modulo 5 system. The modularity of SAUTER's integrated room automation provides maximum flexibility. Therefore, the room automation solution can be tailored to the specific requirements of each building to achieve maximum comfort for the room users with the minimum use of energy.

High energy savings with DALI

Integration of the lighting using DALI is and a must if you want to achieve maximum energy efficiency. The DALI interface incorporated into SAUTER ecos505 enables lamps to be integrated with DALI electronic ballasts, presence detectors and light sensors for presence-controlled lighting or constant-light control.

Flexible thanks to wireless technology

Via SAUTER ecoMod580 EnOcean wireless interfaces, up to 8 wireless EnOcean room operating units and sensors can be integrated into one ecos505. In combination with SAUTER ecoUnit 1 wireless operating units with bi-directional EnOcean technology (SMART ACK) and LCD, SAUTER ecos505 is ideally suited to controlling open and flexible room concepts. Window contacts, switches and other EnOcean devices from third-party manufacturers can also be integrated.

Programming of the controller with the well-known SAUTER CASE Suite engineering platform thus ensures the optimum flexibility of BACnet/IP, EnOcean, DALI, KNX, SMI, Modbus and M-Bus.

www.sauter-controls.com

Smart Home Professional

What do customers expect from smart home solutions?

By Anja Allmis, Sales Assistant, Eltako GmbH

Every day, a new manufacturer promises to deliver allegedly revolutionary smart home solutions. But do these promises really deserve the trust of a loyal clientele? Do the components in the devices meet the highest quality standards? Will these companies, and thus their spare parts and support, still be around tomorrow?

With Eltako Smart Home Professional, the user is choosing a proven system based and one that guarantees a secure future.

Countless technological possibilities

Eltako Smart Home Professional is based on the global EnOcean wireless standard (ISO/IEC 14543-3-1X). The self-powered, wireless and thus maintenance-free radio switches and window/door contacts with energy generators are exclusive EnOcean highlights.

From individual solutions in a home – for example, to automatically close the radiator valve when a window is opened – to the fully networked building, Eltako offers everything from a single source. Support rails or built-in devices, wireless, conventional switch, powerline or 2-wire bus installation.

Sometimes a combination of different types of installations is the ideal solution for a building. Why not connect all switches via a 2-wire bus, while powering all motion detectors with solar energy and thus distributing them anywhere in the building?

Handheld transmitters can be used comfortably to dim the lights or raise and lower the blinds from the couch. Place a mini-handheld transmitter in the car to open the garage gate, or install window contacts with an internal power generator. The Eltako wireless building app even lets the user access the building installation remotely from a smart phone or tablet.

www.eltako.com

MASTHEAD

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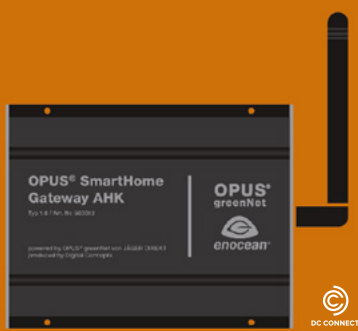

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