ISSN 1862-0698 www.enocean.com

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Networking and lighting in the intelligent building

EnOcean: From intelligent lighting management to the connected Internet of Things

Echoflex Solutions: Museum soars to new heights

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SPECIAL RATES APPLY FOR LIGHT + BUILDING 2018

Dear reader,

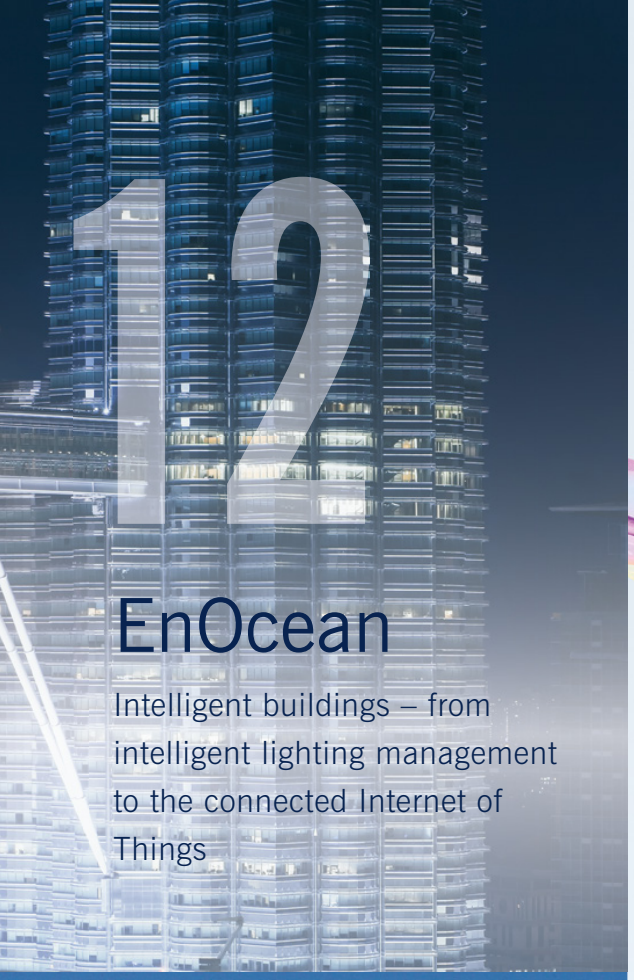
Our lives would be inconceivable without the smart phone. At this year's Consumer Electronics Show (CES) in Las Vegas, it became apparent once again that connected devices are suitable for every conceivable (and even previously inconceivable) application, from monitoring pets and vegetable plants to controlling laundry folding machines or even as an interface to all kinds of sports equipment and pillows. Applications with smart phones and augmented reality are also catching on when it comes to the professional operation of systems and solutions.

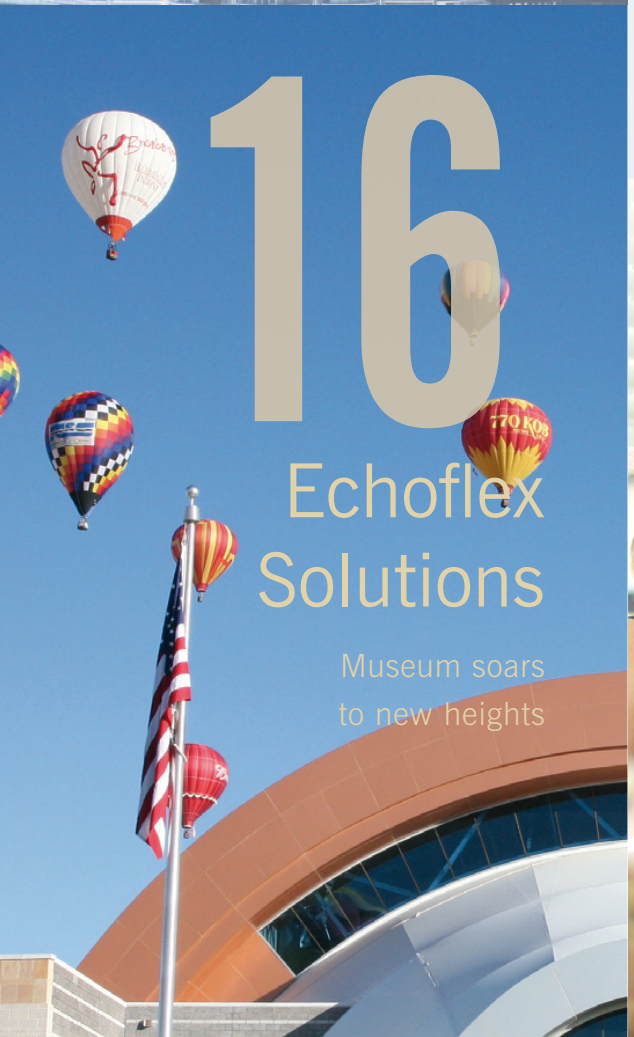
Innovations often focus on technology, but shouldn't they actually center around people? Apps do, of course, make many situations in life easier by providing around-the-clock access to the Internet and its vast wealth of data. Coordinating light scenes in the home with human biorhythms and weather conditions can brighten the mood. Quickly turning on the lights with an app, on the other hand, can be a major challenge for guests or when your hands are otherwise occupied.

As is so often the case, the way to most closely meet the wishes of a large number of people is to combine what is feasible with familiar interfaces and many "little hidden helpers." Sensors help sense the environment and thereby deliver the information that smart systems need for their automation rules. Switches that are easy to operate and can be positioned anywhere enable us to call up predefined light scenes from any location. All at the press of a button. Many solutions today in professional building systems communicate over standardized EnOcean technology; their interoperability and easy commissioning make them ideally suited to carry out simple retrofits or implement complex skyscrapers. The EnOcean Alliance was founded 10 years ago with the goal of standardizing and promoting the EnOcean wireless standard. Today, more than 1,500 products are available, and new promoters, such as Digital Concepts and ViCOS as well as Vertuoz by ENGIE and IBM, bring new momentum to the organization. Lamps can be controlled directly from a smart phone, without a gateway – made possible by Bluetooth®. Now that self-powered wireless switches can also "speak" Bluetooth®, you can turn the same lamp on and off directly with a wireless switch. Bluetooth® wireless sensors will follow – enabled by EnOcean.

In many application reports in this issue, you can read about the ways in which people benefit from the innovations in the Internet of Things, building automation, the smart home and smart phones, combined with self-powered wireless sensors. Congratulations to the members of the EnOcean Alliance and all users of the technology on the organization's tenth anniversary!

Andreas Schneider
CEO, EnOcean GmbH





New certified products from EnOcean

With its different phases, the EnOcean Alliance certification program accompanies the typical development process of a product and gives users certainty in the reliable and interoperable use of different devices based on the EnOcean wireless standard.

Since the interoperability of products from different manufacturers is one of the key factors in establishing wireless and self-powered sensor solutions, the EnOcean Alliance actively promotes the standardization of communication profiles. The EnOcean Equipment Profiles (EEPs) 2.0 were therefore published in early 2009, and they were followed by the development and publication of various supplementary specifications, such as Generic Profiles, Remote Commissioning, Remote Management and EnOcean over IP.

The EnOcean Alliance certification program covers the following stages:

Certification of the radio properties of the wireless module or IC design used

The correct implementation of the ISO standard 14543-3-10 (Europe) or ISO14543-3-11 (USA and Japan), which is authoritative for EnOcean wireless systems, is tested under the so-called Air Interface Certification. This ensures that the data is transmitted correctly by the transmitter and can be checked and further processed by the receiver.

Certification of the radio properties in the end product

In addition to the use of a certified wireless module or IC design, a good RF and antenna design is also crucial to radio-based communication. The expected range can be reliably achieved only in the interplay between the wireless module and RF design/antenna. The Radio Performance Certification therefore ensures the compliance of the necessary RF properties.

Certification of the correct application profiles

EnOcean products communicate with each other based on the so-called EnOcean Equipment Profiles (EEPs), which are standardized by the EnOcean Alliance. Each device must fully comply with the definition of the EEPs used. This is verified by the Communication Profile Certification.

Certification of the energy harvesting functionality

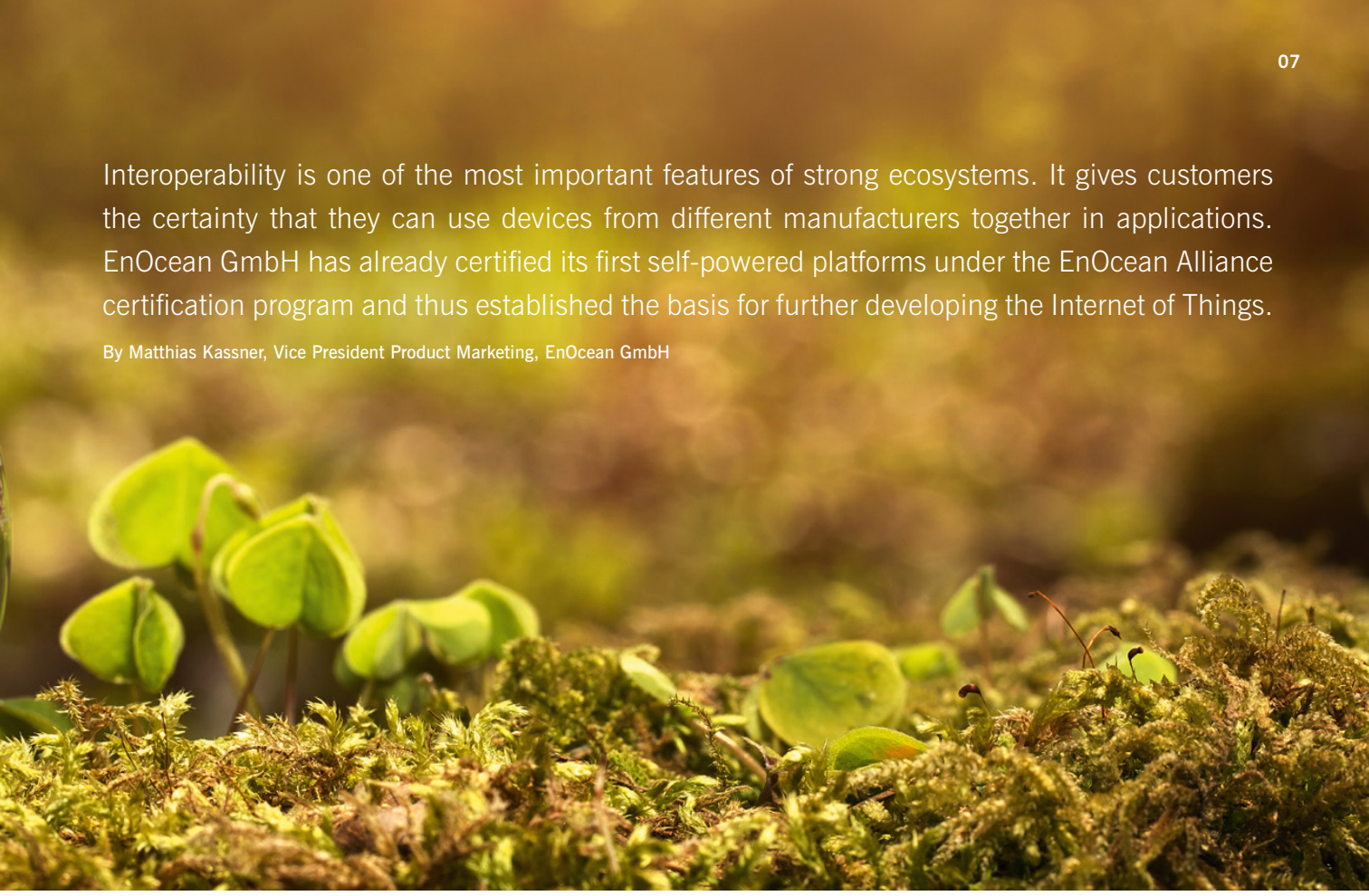
Many EnOcean devices work exclusively by using existing energy sources in their surroundings. To make different products comparable, it is therefore important to establish clear definitions for energy harvesting parameters and to ensure them through the Energy Harvesting Certification.

EnOcean – a reliable partner for certified platforms

EnOcean GmbH has already started to certify its first self-powered platforms under the

Interoperability is one of the most important features of strong ecosystems. It gives customers the certainty that they can use devices from different manufacturers together in applications. EnOcean GmbH has already certified its first self-powered platforms under the EnOcean Alliance certification program and thus established the basis for further developing the Internet of Things.

By Matthias Kassner, Vice President Product Marketing, EnOcean GmbH



EnOcean Alliance certification program in order to establish the basis for further developing the Internet of Things. As part of the existing ecosystem, the following platforms of EnOcean GmbH are already certified: PTM 21x, STM 32x/STM 429J, PTM 33x/PTM 430J, STM 33x/STM 431J, STM 300/STM 400J, TCM 300/TCM 320 as well as TCM 310/TCM 330/TCM 410J.

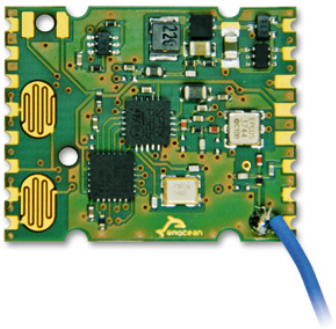
The following recently introduced new platforms from EnOcean will also be certified soon:

TCM 515

The latest generation of TCM 515 continuously powered transceiver modules, which facilitate new applications for the EnOcean wireless standard, thanks to their higher computing power, lower energy consumption and smaller form factor, will be certified according to the Air Interface Spec.

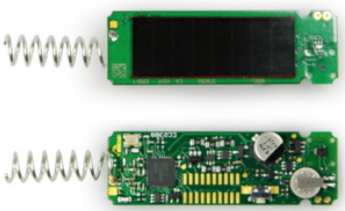
PTM 535

Thanks to its smaller size adapted to the ECO 200, the PTM 535 transmitter module is ideal for customized switches for applications in the consumer sector, in industry or in other areas of the Internet of Things. PTM 535 will be certified according to the Air Interface Spec, Radio Performance Spec, Communication Profile Spec and Energy Harvesting Spec.



STM 350

The STM 350 self-powered wireless sensor module will be certified according to the Air Interface Spec, Radio Performance Spec, Communication Profile Spec and Energy Harvesting Spec.



With this step, EnOcean GmbH enables product manufacturers to certify their end products as well as develop reliable, interoperable devices and solutions based on the EnOcean wireless standard for global use in intelligent buildings and the Internet of Things.

www.enocean.com

Self-powered wireless long-range sensor system for outdoor environmental monitoring

EnOcean has released a sensor transceiver and gateway transceiver with aluminum casting housing for the Japanese market. This housing provides reliable weather resistance for applications being used in places with extreme conditions. In combination with various sensors, the maintenance-free lowest power, long-range wireless solutions open the door to new kinds of applications, enabling multiple outdoor solutions such as agricultural, water level and structural monitoring and various smart city applications such as smart parking, security, vending machines and meters.

By Kazuyoshi Itagaki, Sales Director Japan, EnOcean GmbH

The energy harvesting long-range system from EnOcean

Energy harvesting wireless sensor solutions based on the EnOcean wireless standard on the sub 1 GHz band (ISO/IEC 14543-3-1x) have been in use for the past 15 years. These solutions with 928 MHz have been successfully established for usage in Japan, offering a broad ecosystem of interoperable products.

EnOcean's energy harvesting long-range wireless sensor solution is being used in the agricultural field, where there are strong rain showers, freezing conditions, winds and sunlight. Apart from using it in the agricultural field, it can also be used for monitoring buildings and bridges that are exposed to rain and sea water directly, water level monitoring in rivers and shores. It could also be used for measuring temperature and flow rate in chemical plants and tanks, managing entrance and exit to parking lots, as well as various ocean applications for measuring distance and water temperature.

These types of applications require sensors being resistant to extreme conditions. Therefore, wireless sensor and gateway transceivers with a new weather-resistant, cast-aluminum housing have been added to the self-powered long-range system.

EMOS 200LH

EMOT 200LH

EMOS 200LH and EMOT 200LH with weather resistant aluminum casting housing

The EMOS 200LH sensor transceiver is encased in a robust and weather-proof housing with three M16 interfaces. Two interfaces are used for connecting external sensors, while the third permits the individual configuration and software updates. An integrated solar cell allows for fully maintenance-free operation and facilitates the collection and transmission of data within a defined period of time over several kilometers. The EMOT 200LH gateway transceiver uses the same housing but without a solar cell window, since the latter is supplied via its own interface. This interface also makes it possible to transfer the data to the cloud. EMOS 200LH and EMOT 200LH can be used for over 10 years without having to worry, thanks to their water resistance and sturdy materials. The aluminum housing is heat- and water-proof, resistant to humidity and sunlight and also provides dust resistance.

Increasing the sensor portfolio

In addition to the sensor transceiver and gateway transceiver, the long-range wireless solution from EnOcean includes eight different sensors with generic interfaces, including a temperature and humidity sensor (ESO-A), a soil moisture sensor (ESO-H), a soil temperature sensor (ESO-T) and an illumination sensor (ESO-I). Now, further sensors such as an occupancy sensor (ESO-O), a distance sensor (ESO-P), a food sack temperature sensor (ESO-R) as well as a barrel temperature sensor (ESO-S) complete the system. All sensors are connected to EMOS 200LH via short cables with robust outdoor plugs. A generic interface was developed for this purpose, which enables new sensors to be added to the system flexibly later on without requiring software updates in EMOS 200LH. The system will be completed with further sensors like a CO_2 sensor for use in greenhouses as well as a tilt sensor for infrastructure applications, which are currently both in field trial.

Energy harvesting solution for environmental monitoring successfully being used in Japan

EnOcean energy harvesting long-range wireless sensor solution has been installed from Hokkaido to Okinawa and in various other places within Japan, such as Fukushima. Since 2013, NTT East, one of Japan's leading telecom operators, started field tests in areas all over Japan in open fields as well as in green houses, proofing the EnOcean wireless long-range system can withstand many years of very high or low temperatures, high humidity levels, high levels of sunlight in the south, typhoons, strong rains, damage caused by seawater as well as spraying of agricultural pesticides and dung. The EnOcean energy harvesting long-range wireless sensor solution was extensively tested and proved to be a very reliable, high-quality product. Additionally, during these field tests, the sensor system showed significant cost reductions. NTT East has already started to supply their end-users a wireless solution for environmental monitoring based on energy harvesting technology.

www.enocean.com

Dolphin Products

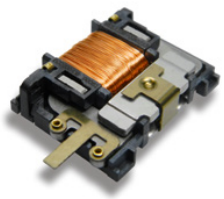
EnOcean's Dolphin product portfolio includes self-powered wireless modules and white-label end products, enabling product manufacturers to develop reliable and maintenance-free wireless sensor solutions for global use.

DOLPHIN
Self-powered IoT by EnOcean

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 Converter

Energy converters collect and save the tiniest amounts of energy from their environment.

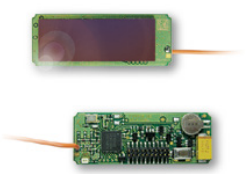


Energy Harvesting Wireless Switches

Energy harvesting switches use kinetic energy for switching applications in buildings and the Internet of Things.

For Energy Harvesting Wireless Sensors

Solar-powered energy harvesting sensors monitor and sense the environment to transmit this data to a wireless node.



For Controllers and Actuators

Wireless transceiver modules and products receive sensor data and also transmit values to other devices.

Tools

Starter kits and development tools help OEMs to implement energy harvesting wireless modules and products easily.

EnOcean Products: **www.enocean.com/products**

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

Georges Thomas, French Technical Sales Manager, EnOcean GmbH

On March 1, 2017, Georges Thomas took over the position of French Technical Sales Manager. In this function Georges focuses on the care and expansion of EnOcean's modular business. He supports Emmanuel Francois, Sales Manager Western Europe and Chairman of the EnOcean Alliance, who is responsible for market development in France and Spain. Together, they work closely together with partners and members of the EnOcean Alliance, supporting the development of building projects and the use of energy harvesting technology in France and Spain. Prior to joining EnOcean, Georges Thomas worked at Apple® for a number of years, developing professional business and managing a sales team.

georges.thomas@enocean.com

Jacob Thomas, OEM Sales Manager for the eastern region of North America, EnOcean GmbH

On October 16th, 2017, Jacob Thomas took over the position of OEM Sales Manager for the eastern region of North America. In this role, Jacob is responsible for growing and maintaining business with EnOcean based manufacturers in his region. Prior to joining EnOcean, Jacob managed accounts involved with the design, installation, and maintenance of commercial building automation systems.

jacob.thomas@enocean.com

Peter Smith, UK Technical Sales Manager, EnOcean GmbH

Peter Smith joined EnOcean as UK Technical Sales Manager in July 2017. In this role, he will have responsibility for IoT Solution Sales and Business Development, with Building Automation, Ambient Assisted Living and Insurance being focus areas. Prior to joining EnOcean, Peter Smith worked for IBM as a Watson IoT Partner Manager and in this role, he was responsible for EnOcean becoming a key Watson IoT Partner. Peter Smith built strong relationships with a number of EnOcean Alliance members and customers during this role. He is now supporting this ecosystem by further developing these relationships and opportunities.

peter.smith@enocean.com

Intelligent buildings – from intelligent lighting management

Leading article

Networking and lighting in the intelligent building

to the connected Internet of Things

The eyes and ears of a building – these are electronic sensors that already enable classic building automation systems to control the lighting, shading and room climate of a building. The Internet of Things (IoT) has now facilitated more efficient or even entirely new services through networking with other disciplines, such as multimedia, household appliances, alarm systems, elevators and the parking area belonging to the building, to mention only a few. Each of these disciplines is getting smarter all the time and thus provides an entirely new dimension in services and business models. The EnOcean wireless standard has become successfully established for wireless networking within the building.

By Armin Anders, Vice President Business Development, EnOcean GmbH

Intelligent lighting management

In addition to HVAC and shading, lighting is an important part of classic building automation. Lighting solutions are getting smarter, and the light adjusts, for example, to the conditions within the home, office, shopping center or on the street – coordinated with daylight or occupancy. Dynamic lighting control and the adaptation of light to human biorhythms are also becoming increasingly more important. Active light regulation ensures that employees are active and motivated throughout the workday.

The introduction of LED technology has brought about an enormous transformation in the area of lighting. Fundamental changes in electronics had to be developed to be able to efficiently control and regulate the new lamps. Occupancy sensors, for example, make it possible to automatically turn off lamps that are not needed. This is particularly sensible in large office environments, in which not all areas are occupied all the time. Light sensors can adapt the brightness of indoor lighting to the amount of available ambient light ("daylight connection"). This is especially beneficial for buildings with large glass fronts where a lot of ambient light is available. Defining maximum brightness settings for dimmable lights ("task tuning") avoids too brightly lit areas and optimizes the light level for individual areas.

Whether in the office building or in retail stores: self-powered wireless sensors help increase energy efficiency and comfort and help make lighting solutions smarter.

Other sensors can also provide real-time insight into the building's condition and technical health. Current sensors measure energy consumption and energy savings per luminaire, per floor and for the entire building. Motion sensors collect occupancy data and thus provide information on the use of office rooms, which helps optimize economical use. A system of this type can also provide insight into the operating hours and usage history of lighting systems, for example, in order to improve the maintenance process. Maintenance history shows events within the system, such as current peaks, voltage drops, devices that are offline and sporadic problems.

Connected Internet of Things

The IoT's enormous potential lies in its interdisciplinary use of sensors. For example, a motion sensor can control the lights, control the room climate according to demand in order to save energy and also ensure security within the building. The same is true of window contacts. The optimum approach is to combine the motion sensor with window contacts, which protect against intruders and also prevent false alarms due to open windows. If windors are opened, or if the room is unoccupied, the heat is turned down. In connection with weather data on the Internet, a warning of imminent rain can be given in good time. In combination with algorithms, the system is able to learn user behaviour, to visualize it appropriately and to constantly improve itself.

Additional artificial intelligence can also be added – such as light quality (e.g., light intensity, color mixture), temperature, moisture or air quality. All this data can be collected centrally in the system, processed in combination with other environmental data available on the Internet and distributed to other networked devices and disciplines within the building.

The wireless and self-powered Internet of Things is the future

Collecting reliable sensor data and combining the data properly links the physical world with the digital one, and the networked system can respond in a far more optimized way or even create entirely new services. Wireless sensors will become the norm, since they can be flexibly placed within the room in the optimum location for the function. The maintenance-free sensors are also suitable for retrofits in existing buildings, which make up more than 99% of the total market.

Considering the many subsystems and international standards, interoperable sensor concepts, in particular, are becoming increasingly more important. The EnOcean ecosystem of more than 400 leading companies in the building sector, which have come together to form the EnOcean Alliance, is in an excellent position here. These companies are committed to the basic idea that wireless and self-powered sensors are the future: the self-powered IoT, on which basis innovative buildings can sustainably meet the needs of the future through efficient and networked automation solutions by implementing new services for the users and managers of the rooms that we occupy every day.

www.enocean.com

The Internet protocol and suitable middleware connectors can be used to quickly and easily connect energy harvesting wireless sensors to applications on the Internet and to interact with a cloud-based platform such as IBM Watson IoT, Amazon Echo, Microsoft Azure, Apple® HomeKit™, Google Home or Cestron.

This scenario forms the basis for the Internet of Things. With the aid of an interoperable network, generated data can be used for smart device and building control, helping to make buildings more energy- and cost-effective and more comfortable.

Integrated office light customization

Helvar, an international lighting technologies company, has been working with EnOcean for the last couple of years on developing a unique EnOcean panel series, which has been used successfully in several projects. **By Henri Juslén, Chief Future Illuminator, Helvar GmbH**

The role of integrating wireless panels

A great example of this solution is the new Helvar Keilaranta (Espoo) office in Finland. "We have successfully integrated wireless panels with our lighting control systems. It's really handy to have a user interface you can literally stick on a wall with absolutely no wiring. The trend is that the use of traditional user interfaces will decrease over the time and the use of wireless user interfaces will grow," says Henri Juslén, the Chief Future Illuminator at Helvar. "I also believe that in the future, intelligence systems will replace traditional controls such as panels which mean that panels might not be needed at all."

Individual lighting control solution

In the Finnish office, wireless lighting control has been used for personalized employee lighting. "We have an open plan office with couple of breakout areas where the personalized color temperature and light level control can easily be adjusted to employees needs. This helps to improve our staff well-being and also productivity," says Juslén. This is all made possible by using Helvar EnOcean panels and Helvar DALI-EnOcean gateway technology.

"It also works great in the meeting rooms. You can select a scene from the wireless table panel that fits your needs – for example presentation mode or a general meeting mode. It is very easy to move the panel to the right spot where you need it in various environments, for example, in education where the panels can be added to the class walls or on the tables. We know that at times adding a wired panel is very difficult and not visually pleasing. Also wireless panels are easier to add afterwards a single time and as needed," concludes Henri Juslén.

www.helvar.com

Museum soars to new heights

The Anderson Abruzzo Albuquerque International Balloon Museum showcases the beauty, ingenuity and history of lighter-than-air flight in a building that has become a beloved landmark in its hometown. Thanks to new control products from Echoflex Solutions they were able to modernize their lighting control and become more environmentally sound. By Jacob Coakley, Marketing/Communications Specialist at ETC, Inc.

Echoflex Solutions made lighting the exhibits in the Anderson Abruzzo Albuquerque International Balloon Museum's Great Hall much easier for museum staff.

The museum's Great Hall is enormous – it has to be in order to house balloon artifacts and models of gigantic zeppelins. While the lighting for these exhibits was simple, turning it on was anything but. "We were going around having to manually turn everything on in the morning and off in the evening," says Paul D. Garver, Manager of the Museum. "It was a huge hassle and a big waste of time."

Fixing the problem was complicated by the fact the large exhibit halls and soaring ceilings necessary for the exhibits made re-wiring the museum cost-prohibitive. The museum also wanted to upgrade the lighting controls in their event spaces. With the purchase of LEDs for the space, the Museum felt they could realize even more energy efficiency, but had no infrastructure to install remote sensors and controls.

Unimagined dimensions

The solution to both problems was wireless lighting control solutions from Echoflex Solutions. Self-powered wireless wall switches using the EnOcean wireless standard gave the museum the flexibility to place control where they needed it and the power to cover their large spaces. Other wireless control products only send signal 70 feet – hardly enough for the museum. By using EnOcean's wireless standard, Echoflex products have a much longer communication range and can send signals up to 300 feet. And with a wireless interface to a control system provided by Echoflex Solutions' partner company ETC, scheduling the exhibits to automatically power on and off was a breeze.

Echoflex Solutions' wireless technology made placing lighting controls around the Anderson Abruzzo Albuquerque International Balloon Museum exhibits simple.

Growing beyond yourself

The museum's meeting spaces could be optimized as well. Echoflex TAP daylight sensors communicate wirelessly with their dimmers, automatically dimming lights to conserve energy and ensuring that a space is always lit correctly. High-ceilinged event spaces are well-served by MOS high-ceiling occupancy sensors. The sensors charge via solar energy, eliminating the maintenance associated with battery-powered devices, and the excellent transmission range, along with tuned-sensor circuitry mean the lights quickly come on when needed.

"We wanted a system that could give us the efficiency, flexibility and control we needed," says Garver. "We chose Echoflex Solutions because they were the best way to meet those needs, and they have certainly produced the results we were looking for."

www.echoflexsolutions.com

Making intelligent building systems available to everyone

Cycles of innovation follow a natural pattern, with the development of enabling hardware and infrastructure taking place first, and the software to utilize it following shortly after. We've witnessed this in the innovation-driving Internet of Things (IoT) technologies, where the rapidly decreasing cost of sensor technology such as EnOcean's self-powered IoT devices, has triggered widespread investment in systems designed to bring our buildings to life.

By Dan Madden, Head of Marketing, Living Map Limited

These systems improve operational processes, transform tenant experience and automate building management to deliver greater energy efficiency. However, the software needed to make this data available to everyone that uses our built environments is only now beginning to emerge.

Technical users can access live sensor data via Building Information Modelling (BIM) or Building Automation Systems (BAS). This is a start, but the utility of live building data goes beyond engineers and automation specialists. Non-technical employees and tenants also stand to gain significant benefits, but lack the appropriate tools.

A living, digital map

We believe that the most natural interface for understanding and experiencing a physical environment is a map. Specifically, when discussing a connected built environment: a living, breathing digital map. These are simple to use and can be delivered direct to mobile devices. By visualizing a building's layout, its assets, and the data it produces, an interactive digital map acts as a simple but powerful interface for an intelligent building system.

Intelligent asset management

Consider the opportunity for commercial tenants: A digital map, accessible via desktop or mobile browser and connected to EnOcean sensors gives workers the ability to instantly see which hot desks and meeting rooms are unoccupied, and book the one that's closest to them. This eliminates time wasted searching for rooms and the associated stress it causes, increasing productivity. For security staff, a digital map of a complex indoor environment can visualize wireless EnOcean door and window sensor information to show the live status of every access point to the building, as well as show the exact location of any unexpected motion sensor activity immediately. For facilities contractors, a mobile map of an unfamiliar environment provides a more efficient way to fix assets that have developed faults, alerting staff to issues in real-time and enabling them to locate assets faster.

Bringing buildings to life

Increased connectivity has the potential to transform every building process, but delivering on the promise of greater operational efficiency and better user experience depends on our ability to combine the best hardware available with software that connects people to their building in a seamless, intuitive way. This requires us to leverage best-in-class technology from providers such as EnOcean, whose self-powered sensors bring buildings to life; Living Map, whose intuitive digital map platform makes that information simple to digest; and partners such as IBM, whose Watson IoT platform provides the cognitive capability to create powerful new IoT applications.

www.livingmap.com

The digital map visualizes sensor data and thus provides a powerful interface for an intelligent building system.

Intelligent lighting ensures optimal learning environment and energy savings

EnOcean's self-powered wireless Easyfit switches for Bluetooth® lighting systems combined with Casambi technology have brought state-of-the-art control to the Bernard King Library building at Abertay University, one of Scotland's leading universities.

By Maarit Tötterman, Operations Manager, Casambi Technologies Oy

University libraries have transformed in recent years, as technology changes the way we research and learn. But libraries are not redundant in the digital age – in fact, they're becoming more important than ever as universities compete to attract students and the students put greater focus on the quality of the learning environment being provided.

Increasing comfort, decreasing energy consumption

This means it's important to have the right light to promote comfort and effective study in open-plan areas and smaller rooms, while also keeping energy consumption to a minimum. Smart lighting control technologies such as Casambi, combined with self-powered wireless Easyfit switches, are ideal for applications such as this, allowing staff – or students themselves – to control lights either using a mobile app or simple and discreet wall-mounted switches and dimmers. With Casambi system it is also possible to create automated lighting with timers and sensors.

The technology is particularly suited to retrofit projects because no new wiring is required – all the intelligence and connectivity is built into the luminaires and switches, or accessed via a mobile app.

Intelligent retrofit solution to meet today's requirements

Abertay University in Dundee, Scotland, is one educational institution benefiting from just such a system. Based on a close-knit campus in the heart of the city, Abertay is a leading university in computer game development and is one of Scotland's foremost institutions for environmental science research. The university's multi-award winning Bernard King Library, opened in 1997, provides individual and group study spaces, with thousands of books and journals, as well as full Wi-Fi coverage and computers with a vast catalog of e-books. The 5,500 m^2 building also houses the university's 'one-stop shop' which offers help and advice to students about all aspects of university life.

The building recently underwent a £4 million refurbishment to upgrade services and better meet the needs of today's students. As part of the project, Abertay University decided to introduce energy efficient LED lighting integrated with Casambi's smart control system for improved controllability.

The installation includes over 30 self-powered wireless Easyfit switches using the Bluetooth® standard in rooms used for meetings, private study, group work and presentations. Thanks to Casambi's technology, the university has the option of giving students a degree of control over the lighting in breakout study rooms. Some of these rooms are also used for support and counseling of students, so creating a comfortable and welcoming ambience is crucial.

Casambi is a wireless system, consisting of units installed into the luminaires, which communicate directly with a mobile device, so there is no need for additional gateway units. EnOcean's self-powered Easyfit switches are supported by the system, and since they are also wireless they can be placed where they are needed.

A great success: individual lighting control and unlimited flexibility

Ian Simpson, Director of Operations at Abertay University, says: "The installation was very straightforward. We were renewing all the light fittings anyway, so the Casambi smart control technology and EnOcean's self-powered wireless Easyfit switches were really just a small addition – we had no concerns from electricians on site."

The wireless solution also makes the library ready for the future, says Simpson. "The wireless solution allows lighting to be reconfigured very easily without changing wiring. That futureproofing aspect is important as we anticipate the building will continue to evolve over time because of the changing way students use study spaces and the wider use of technology in buildings."

The Bernard King Library features a number of glass walls, so the self-powered Easyfit switches offered the added advantage of not requiring cable runs that would harm the appearance of the building's interior. Responses from staff and students at Abertay have been very positive, says Simpson. "In staff areas people have been able to request that the standard lighting is changed a little to suit their preference. They can personally choose the illumination for the fitting above their desk simply by sliding the level up or down."

The success of the installation has given Abertay University the confidence to take the smart lighting technology even further. Simpson adds: "We've installed two floors of the library building so far with Casambi, and the assumption now is that we'll extend it to the offices and student study areas on the other two floors."

www.casambi.com

Pushing the boundaries – Compatibility in the smart home

Isolated solutions will (soon) be things of the past. More and more, customers want straightforward solutions. What does this mean for manufacturers?

By Marek Machacek, Marketingdirector, Digital Concepts GmbH

Various manufacturers have been battling over the smart home market for years now. Different isolated solutions have emerged, which do not offer end consumers much flexibility. The objective is to tether customers to the manufacturer, or even make them dependent on their vendor. The main difficulty is that not every self-contained system provides a complete range of products (or a complete product line). Usually, they only cover one discipline, which may offer savings and a certain degree of comfort. But is this smart enough?

The tide is now starting to turn. While the primary goal used to be to find any solution at all, the most important thing now is to find a future-viable one, moving away from the vertical silo and toward interconnectable and interoperable products, as provided by the EnOcean ecosystem. The requirements are also now more concrete:

- Integration with the Big Five (Facebook, Apple, Amazon, Microsoft, Google)
- Support for the most important wireless standards
- No batteries/self-powered
- Endlessly upgradable or future-viable
- Modern and cost-effective products

In principle, all smart home products based on the same standard and possibly also certified can be combined with each other. The major players in the electronics sector, such as Apple® (HomeKit™) and Amazon (Alexa), are suitable for tearing down the barriers and rapidly conquering the market. Product manufacturers jockey for position in the catalogs; vertical (isolated) solutions are gradually disappearing.

The Smart EnOcean Gateway from Digital Concepts meets these very requirements. In contrast to the known systems, the Digital Concepts solution is a horizontal approach, one that makes it possible to network all worlds and products with each other. The new LTE and WiFi gateway variants are expanding these worlds even further.

www.enocean-gateway.eu

The EnOcean Alliance celebrates 10 years of the international wireless standard for smart buildings

Have you ever asked yourself about the results since the first EnOcean products have been installed in 2005?

EnOcean technology has already been installed in

500,000 buildings around the world.

In 2017, for example, there have been approx.

8 TWh

energy savings.

This results in **total energy savings** from approx.

56 TWh

since installation.

enocean® 10 2008 – 2018

All together, the energy savings thanks to energy harvesting technology corresponds to **1.845 windmills** or **1,5 fossil power plants** or **0,7 nuclear power plants.**

"Ten years ago six innovative companies joined forces to form the EnOcean Alliance with the aim of standardizing and promoting self-powered wireless solutions for intelligent and sustainable buildings. In our successful journey we have created the international open standard IEC/ISO 14543-3-10/11 and established multiple technical specifications enabling our members to develop thousands of interoperable products which are installed in hundreds of thousands of buildings. We are continuing to further develop and improve the standard, for example with EnOcean over IP solutions for the IoT and cloud-based smart and cognitive buildings, or with advanced commissioning methods and improved security. I thank all of our members and partners who have made me proud to be part of this innovative Alliance and look forward to an exciting future."

Graham Martin, CEO und Chairman, EnOcean Alliance

EnOcean technology has saved more than

45,000

kilometers of cables up to now. This corresponds to the length needed to circle the earth more than once (40,000 kilometres).

The EnOcean Alliance, with over **400** members in the field of building automation, is constantly strengthening the proven EnOcean ecosystem, helping to create a safer, environmental friendlier world.

EnOcean products are fast and easy to install and perfectly suited for retrofits. In total, **11,250 years** of installation work have been saved up to now, thanks to its maintenance-free operation.

Source: EnOcean GmbH

Visit the self-powered EnOcean world on the web: www.enocean.com / www.enocean-alliance.org

A shining star in the building automation firmament

Intelligent and maintenance-free wireless solutions based on the EnOcean wireless standard have been used in building projects around the world for the past 15 years. We have presented numerous international and prominent projects in this magazine in recent years. But have you ever asked yourself what happened to the projects and buildings from those days? Has energy harvesting wireless technology proven to be successful? To answer this question, we took a look at a successful building project from 2007 in Baden-Württemberg, Germany, to mark the 10th anniversary of the EnOcean Alliance. At the time, more than 1,500 self-powered wireless EnOcean products were installed in the building complex owned by SAP Germany.

By Henning Meyer, System Consultant for Building Automation, EnOcean GmbH

Maintenance-free sensors based on the EnOcean wireless standard generate extensive data that can help to optimize processes on a long-term basis as well as saving costs and increasing energy efficiency of our buildings.

A flexible and comfortable workplace

In the spring of 2007, the employees of SAP Germany moved into a new building complex in Walldorf, Baden-Württemberg, Germany. With its approximately 45,000 m^2 of usable space, the complex stands out with two imposing, five-story, star-shaped building arrangements, which house a conference center and a restaurant, among other things. The use of more than 1,500 self-powered EnOcean switches greatly simplified the installation of the building technology and facilitated an entirely new level of flexibility in controlling the workstation lamps and blinds.

New flexibility

The energy harvesting wireless technology from EnOcean has proven to be successful ever since the company moved into the building in 2007. Sunshades and floor lamps, which each uniformly illuminate a group of two to four workstations, are used in the open-plan offices. These devices are controlled via a flexibly programmable EIB/KNX building automation system, using wireless EnOcean gateways.

The use of 1,500 self-powered wireless switches from EnOcean permits the maintenance-free control of shades and lights throughout the building. The self-powered operation eliminates the need for cost- and time-intensive maintenance by the facility manager. The wireless switches can also be positioned flexibly and entirely as needed, which has a positive effect on building use. The open-plan offices can thus be transformed into individual offices or conference rooms with little effort, using a flexible partition system.

Ever since the "star" was commissioned in 2007, SAP was so satisfied with the result that it has used the self-powered wireless solutions based on the EnOcean wireless standard (ISO/IEC 14543-3-1X) in other building projects as well. EnOcean-based solutions have also proven to be successful as retrofit solutions in existing buildings and as upgrades to existing installations in rental properties.

A growing ecosystem

SAP Germany's corporate headquarters are only one of many buildings around the world that have been able to be energy-efficiently, economically and sustainably designed with the aid of energy harvesting wireless technology. The EnOcean Alliance, with its more than 400 members, is active in the area of building automation and offers the benefits of a growing ecosystem consisting of interoperable self-powered wireless sensor solutions.

Over the past 10 years, the organization has established innovative, intelligent automation solutions for sustainable building projects and the Internet of Things (IoT) and is building bridges to a global network in IoT in new partnerships with industry leaders.

www.enocean.com
www.enoceanalliance.org

Economical luxury boutiques in

Consumption is high on the agenda in Paris's 1st arrondissement. When a French luxury fashion brand extensively refurbished two of its boutiques, maximum resource efficiency was a key demand. The brand consequently received a Green Building award – not least because of the intelligent SAUTER EMS energy management solution.

By Prudence Soto, Directeur Général, Sauter Régulation S.A.S.

the center of Paris

The flexible overall solution from SAUTER enables easy monitoring as well as energy efficient operation in the historical buildings.

Two years ago, a world-famous French luxury brand decided to modernize both of its commercial buildings on the Rue Duphot at the heart of the 1st arrondissement. An energy management and automation solution from SAUTER was thus commissioned.

Completely versatile systems

After stepping through the doors of the first premises on Rue Duphot, you are plunged into a luxurious shopping paradise. An area of around 350 m² over several floors has everything to delight the discerning fashion shopper. Just a few doors down the street is the second building, accommodating the other shop, presentation spaces and employee offices over three floors.

The areas in the buildings have different uses, creating huge challenges for conventional building and room automation. This however is not a problem for the intelligent SAUTER building management software, which operates at both locations. Building technicians can operate, monitor and maintain all installations. A few clicks are all that is needed to adjust the heating, ventilation and cooling – on site or remotely.

Energy regulated to a tee

In addition to the SAUTER building management system, one of the buildings is fitted with SAUTER EMS. This energy management solution ensures more energy-efficient operation. Operating staff monitor all consumption in the building from one central point. They can analyse it accurately and intervene quickly if necessary. Displays and analysis of the measurement data are accessible any time via a laptop.

Energy consumption is minimised in the elegant rooms of this French luxury fashion brand. Meters are seamlessly integrated using Modbus RTU into the SAUTER overall solution. The prestigious fashion brand always has a complete picture of the energy used for electricity and hot and cold water.

Fingertip control

SAUTER modular automation stations (modu525) fitted in both buildings control the lighting and ambient temperature, enabling staff to work comfortably. If, for instance, there are only a few people in an office or showroom, the SAUTER solution automatically adjusts the lighting, heating and cooling accordingly.

SAUTER ecoUnit176 room operating units – featuring bidirectional EnOcean wireless technology – are close at hand in the shops. Sales consultants can therefore create the perfect ambience for their clientele. Items on display also benefit from the best possible lighting. The self-powered EnOcean control units were also chosen to keep the cabling effort as low as possible and thus to preserve the historic walls as good as possible.

Historical green buildings

Old buildings are often considered energy guzzlers. The renovated premises of the French luxury fashion brand prove, however, that advanced age does not always mean excessive energy demand. With the progressive energy and automation concept from SAUTER, the client has also impressed Alliance HQE. The address on Rue Duphot with its integrated SAUTER EMS received the HQE. It was awarded this distinguished French Green Building certificate for its high energy efficiency – even before the project was completed.

www.sauter-controls.com

Solid and smart construction

The cross-vendor and interdisciplinary “wibutler” smart home system is open and flexible. This example of a new building from the solid prefab home manufacturer Heinz von Heiden demonstrates what this means in practice and how different products from the EnOcean ecosystem can easily be integrated.

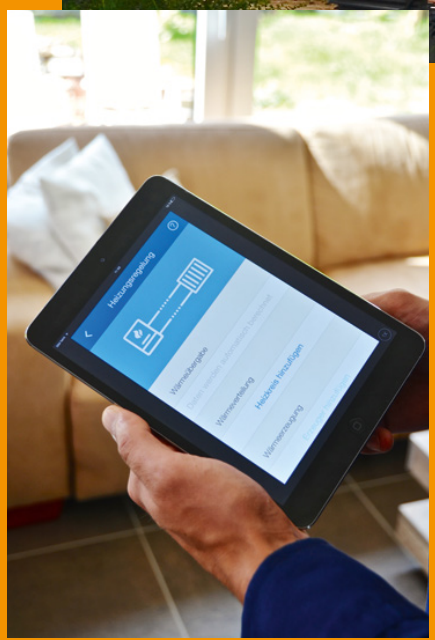
By Margarete Sackarend, Marketing Manager, wibutler GmbH

The wibutler pro is a separate wireless network, independent of the Internet, and has already been configured during the home’s shell construction phase.

Everything in the single-family home, from mouse traps to the heating system, is controlled via the wibutler solution. The system scores with process engineering for heating control and a large portfolio of compatible products based on the EnOcean wireless standard.

Demand-driven heating control

Demand-driven heating control optimizes the control of the heating system. Unlike regular heating systems, wibutler determines the inlet temperature from the actual heat demand in the room and not based on the outdoor temperature. The system thus detects and takes into account active heat sources, such as sunlight, a fireplace or an oven. The heating power of the furnace is dynamically adapted on the basis of these values. As a result, only the energy actually needed is provided. The energy savings are approximately 15% higher than with conventional smart radiator controllers that are not demand-driven and are implemented without a connection to the furnace. In new buildings, the heat is controlled with Eltako FAE14SSR floor heating controllers, HORA Smart Drive MX radiator valves, Eltako FTF65S temperature sensors and a BWL-1S split air/water heat pump with a Wolf Link home module.



Comfortable and secure

The WaterSensor eco from Afriso detects water leaks, for example due to a ruptured washing machine hose. In the event of an alarm, wibutler transmits an alarm message and can shut off the water main line directly via the SYR Safe-T Connect function. SYR Safe-T Connect also detects leaks on the basis of excessive water consumption (e.g. due to a broken pipe) and even microleaks. To signal an intrusion, window

The concealed window contact from Winkhaus is permanently mounted in the profile and invisible in everyday use.

The EnOcean-based eMitter Snapbox Pro mouse trap is self-powered and transmits trap messages directly to a smart phone via wibutler.

The maintenance-free Eltako FTF65S temperature sensor is supplied from the integrated solar cell with energy store.

contacts trigger alarm messages and activate a siren. The built-in Winkhaus window contact is mounted in the profile, making it invisible in everyday use and particularly secure. If smoke is detected, the Eltako FRW smoke detector sends a signal to the wibutler gateway, which immediately raises the blinds to clear the escape routes. Even a mouse trap can be integrated into the wibutler system. The eMitter mouse trap no longer has to be checked daily, thanks to a “trap message” sent to a smart phone.

Smart lighting solutions

Eltako motion sensors (FBH65S) with an integrated brightness sensor and tap-radio light actuators (TF61L-230V) switch the lighting system. Outdoors, the FAH60B brightness sensor activates the outdoor lights at dusk. The tap-radio universal dimming actuator (TF61D-230V) steplessly regulates the brightness of dimmable lamps with an EnOcean wireless switch or using the wibutler app. A conventional floor lamp is integrated into the system and switched via a Peha D4511 FU-EBIM ST plug adapter. The TF61J-230V shading element actuator is used to control the blinds using timer automation functions and link them to smoke detectors and switches.

www.wibutler.com

Leading the way in energy efficiency

Can intelligent and demand-oriented heating control be implemented only in elaborately planned new buildings? That may have been true once. But today an enormous potential for saving energy can also be achieved in existing buildings with very little effort. A maintenance-free and demand-oriented radiator valve controller can be retrofitted without complications, and it increases energy and cost efficiency after just a short period of time.

By Fritz Volkert, Managing Director, Micropelt – A brand of EH4 GmbH

The Hockenheim police station is housed in an old building owned by the state company „Vermögen und Bau Baden-Württemberg". This company implements suitable renovation measures with the goal of optimizing the operating costs of existing buildings.

Optimizing energy efficiency and operating costs

The building has 30 rooms with different use profiles, distributed over three floors. While the ground floor is used round the clock by emergency services, the rooms on the second and third floors are occupied only during normal business hours, which include occupancy on the weekends.

Any measures taken to lower energy costs and CO_2 emissions had to meet extensive requirements. A maintenance-free and demand-oriented radiator valve controller with setback operation and occupancy-based heating was also to guarantee energy-efficient operation outside typical working hours. In addition, there were to be no reconstruction measures or intervention into the building structure that would limit the ability to work. It was also very important for the Technical Service to be able to easily operate and control the system on the floor level.

Effective retrofitting without complications

While the inspection and planning phase of implementation took approximately one day, only one more day was needed a short time later to install the system and make it ready for operation. A total of 31 self-powered Micropelt EnOcean actuators, 18 EnOcean-based sensors and two floor heating controllers were installed. Apart from the function

The police station Hockenheim benefits from the needs-based and maintenance-free radiator control.

rooms, each office can now be set individually to the desired comfortable temperature, using a setpoint adjustment function. An occupancy button can be used to turn on the heat for a predefined period of time outside standard heating times. The complete setback operation on both floors overnight and on weekends will ultimately result in significant energy savings, since two-thirds of the building is now heated for only one-third of the time that used to be required.

As a retrofit solution, the maintenance-free radiator valve controller based on the EnOcean wireless standard offers enormous savings potential with a small amount of installation work compared to other construction measures. The Hockenheim project is a prime example of how this system can be implemented quickly and pay for itself after only a short period of time. From now on, the police station will make an enormous contribution with little effort to the energy-efficiency measures of the Baden-Württemberg state government.

www.micropelt.com

The future is already here in the retirement home

Contrasts drive innovation

The EnOcean-based room control system from Omnio enables automatic control of heat and helps create a pleasant indoor climate.

The self-powered wall switch for controling lighting and shading can be flexibly positioned if needed.

Young people are generally the first to embrace technological innovations, try them out, rave about them, generate hype and even sometimes create new lifestyle habits. In the Singenberg retirement home, the situation is richer in contrast: Seniors spend the final phase of life here and use cutting-edge solutions from Omnio, based on EnOcean technology, for assistance.

By Pierre Schoeffel and Beat Zbinden, Product Manager Omnio, AWAG Elektrotechnik AG

The Singenberg retirement home and the Bürgerspital retirement and nursing home are situated on the grounds of a magnificent park in the heart of St. Gallen, Switzerland. The FAGUS extension, which has no sharp angles either inside or outside, opened in the spring of 2017. It is a building with rounded contours that offers a pleasant and innovative appearance, with south-facing balconies for almost all 28 residential units. The new building is intended to house mainly couples, only one of whom is in need of care.

Helping seniors in their everyday lives

Because older people have somewhat limited capacities, the building had to be equipped with cutting-edge technical functions that were very easy and convenient to use. Assistance functions, such as automatic heat regulation and efficient sun protection, maximize living comfort and are extremely flexible at the same time. Another requirement was that each resident had to be able to get the hang of the technology quickly after moving in and feel immediately at home.

To assist the seniors in their everyday lives, the apartments use self-powered and maintenance-free solutions from Omnio, based on the EnOcean standard, which control all applications wirelessly. This includes lighting and shading as well as individual room control and the emergency call button in the en-suite bathrooms, which is connected to the switchboard in the main building.

Smooth project execution and a satisfied customer

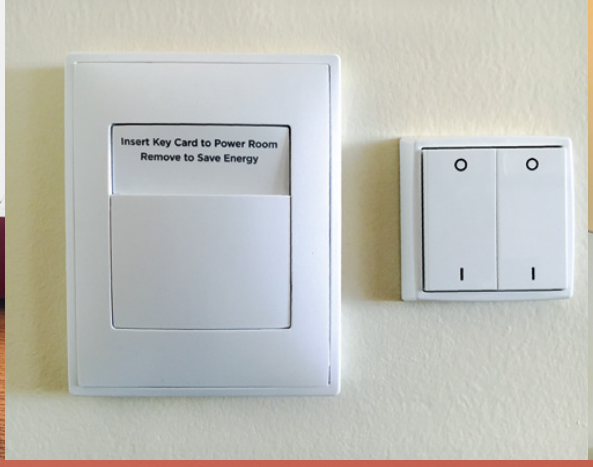
All components were parameterized wirelessly and subsequently tested before shipping. Since the maintenance-free Omnio devices can not only be parameterized manually but also configured on the laptop without complications, and they are maintenance-free, thanks to the self-powered EnOcean technology, Technical Service can quickly and independently address the individual needs and wishes of the tenants. This includes placing the self-powered switches for controlling the lighting and shading in the best possible locations. The maintenance-free solutions in the Singenberg retirement home thus help seniors organize their everyday lives pleasantly and entirely according to their own needs with the aid of cutting-edge technology.

www.omnio.ch

Comfort has never been more energy-efficient

The 4-star luxury AVANI Hotel & Casino in Windhoek, Namibia, welcomes guests from all around the world. Just recently, the rooms and suites retrofitted with the EasySens® system from Thermokon delighted guests with highest comfort while saving energy costs for the hotel management. In order to achieve these energy savings, the Thermokon partner in South Africa, Tecovation (Pty) Ltd., has installed more than 180 SRW01 window contacts, 180 SR-KCS key card switches, 180 STC-DO8 lighting switch actuators with an integrated scheduler as well as 580 EasySens® light switches. Besides installing one of the most energy-efficient wireless systems on the market, Tecovation was also able to make the installation much more efficient than a conventional wired one by saving time and money. Dale Heger, technical implementation manager at Tecovation, reports on the successful project.

By Thorsten Kresin, Head of Marketing, Thermokon Sensortechnik GmbH



Mr. Heger, what were the specific challenges in this project?

One of the most critical challenges was identifying and using the existing routing. This posed many challenges due to the constraints and restrictions of the previous solution. Fortunately we chose EasySens® wireless system, which could overcome this without requiring the use of the existing switch points. It also offers us numerous solutions in case the hotel management opts to refurbish or upgrade the rooms in future with new, enhanced functionalities we might not even think of today.

Which functions were required by your client?

To optimize guest comfort and energy savings, we installed the KCS key card switch, which is clearly marked as a green initiative, easily installed where it makes sense to the guest and works without creating any mess or noise. Also the window contacts will contribute heavily to saving energy on the AC side. On the other hand, the wireless light switches make it comfortable for the guest to switch the lights from anywhere in the room.

Why did you choose the Thermokon EasySens® system?

Hotels in remote locations throughout southern Africa require innovative technologies to accommodate international guests. The solution needed to be robust, functional and "virtually maintenance-free". We ran a trial of the concept in two rooms for a period of eight months with zero failures of the installed technology. EasySens® allowed us to install the system according to our occupancy ratio without affecting guest room availability.

How would you rate EasySens® and how big was the time savings compared to conventional installation?

We are confident that our savings will materialize from not only utility conservation but also from a robust technology perspective. EasySens® has allowed us to complete the installation seamlessly with no guest disturbance. Our guests can enjoy an enhanced experience of comfort and control from anywhere in the room.

The installation has been well received by all staff members who already realize the benefits of battery-free devices. We can achieve an approximately 6-8 hour saving per room on installation as no wiring was installed. The installation is successful and the facilities staff are delighted.

What benefits were remarkable for you to recommend the EasySens® system to others?

The pure reliability and results achieved by a simplistic device. No wires, no batteries, no fuss.

How did you structure the room controls in order to achieve energy savings?

We chose to go with the window sensors to isolate the HVAC during times of use. We further expanded this to couple with the room key card to energize the guest room based on the occupancy status. We gave the guests specific location control on the lighting load so as to not turn on unnecessary loads. This gives the guest a natural flow within the room.

Mr. Heger, many thanks for the interview.

www.thermokon.com

EnOcean products applied to China Telecom's smart home

Wuxi, known as the 'Pearl of Taihu Lake', is one of the major cities that has been remarkably developing in the areas of the Internet of Things (IoT) and cloud computing in China. China Telecom Wuxi branch joined forces with Shanghai Hualian Lawson, officially launching the flagship Wuxi store. By Marketing Department, Nanjing Winshine Network Technology Co., Ltd.

The store not only allows community residents to pay utility bills at ease while shopping at convenience stores, but also provides smart home and other information services in the in-store "Intelligent Living Room." People can thus experience the magic of intelligent control of light, electronic devices and more, and even apply these technologies to their homes through Telecom's installation server.

WinShine is responsible for all products and design planning for Wuxi Telecom's "Intelligent Living Room." With all products using EnOcean wireless technology, it is rather convenient for construction because the installation can be done in the final stage. It is also easy to test how products function repeatedly and adapt them accordingly to find the best location for installation. WinShine shows a variety of functions in the "Intelligent Living Room."

Welcome to the intelligent living room

Once you open the front door of the "Intelligent Living Room", the setting light and music will be turned on, and the

Experience the smart home: Visitors of the "Intelligent Living Room" can gain inspirations for their own home.

security camera will capture the moment at which a door opens and is displayed on the screen. This will attract more customers and allow them to experience intelligent home products.

Experience automation

As customers enter the living room, they can use wireless switches on the wall or the table, as well as an App, to control the lights, curtains and the music as they wish. They can also check the in-room temperature, CO_2 figures and the historic curves.

When visitors approach the window, the white blinds automatically rise and give them a good view of the outside, which will further appeal to them. The blinds descend slowly as people leave. There are QR codes on the wall, table and the back of switches for customers to scan for more information about products and EnOcean technology.

Security functions

The wireless switches and smart phone apps can also be used to set or cancel security systems defense for the "Intelligent Living Room." When the security is set up, if wireless magnetic sensors on doors and windows or occupancy sensors detect any movement, you will receive alert on the apps, turn on lights at alert areas and record whatever is taking place.

Home security and a tailor-made security system are customers' top concern. Moreover, the wireless and self-powered features of the EnOcean technology facilitate the installation for Telecom staff, and also offer enormous potential for limitless extensions, for example, on lights, curtains, locks and other intelligent functions.

www.win-shine.com

One system for all smart home functionalities

Countless numbers of manufacturers, solutions and products with a focus on the smart home are currently circulating on the market. They all have one goal: To make the home smarter and to use existing technologies in such a way that users gain more security, save more energy and increase their comfort level.

However, many potential consumers remain uncertain about which products, brands or companies they should use for their own smart home. Many of them are simply unfamiliar with the Smart Home concept and cannot make much sense of it even after extensive research. Their great fear is that they will “back the wrong horse” and block their access to future Smart Home functions. This is where a qualified electrical equipment, plumbing, heating or air-conditioning retailer with AFRISO products comes in, one that can demonstrate power of innovation.

By Frank Altmann, Head of Marketing and Product Management, AFRISO-EURO-INDEX GmbH

AFRISO Smart Home, a complete solution for room climate, comfort and security, is open to all “smart” ideas and wishes from consumers. The system is based on different wireless standards that make it possible to integrate AFRISO sensors as well as products of other manufacturers and disciplines. More than 200 devices can currently be integrated – and even the control of entertainment electronics or the convenient use of Internet services present no obstacles.

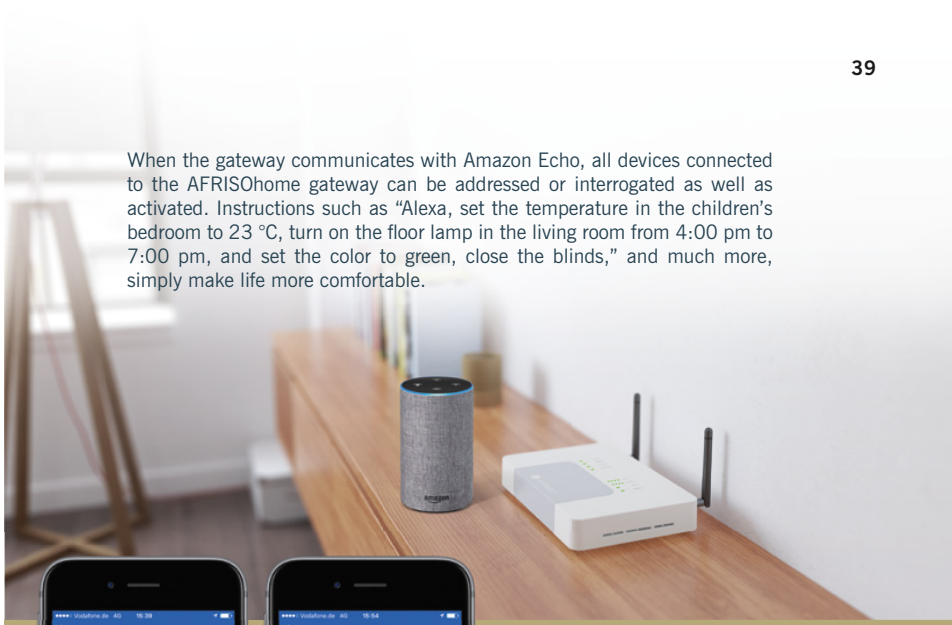
The good thing about this system is that the starting point is and will remain classic craftsmanship, which can now be implemented as professionally and reliably as it has been conventionally but with much less time required and without dust and dirt. From warning devices for water leaks to temperature controllers, relay controllers for lights and blinds, and even smoke or heat detectors, experts discuss the requirements with the customer and draw up an offer accordingly. In doing so, they can improve their order situation and take a decisive step forward toward digitalizing their trade.

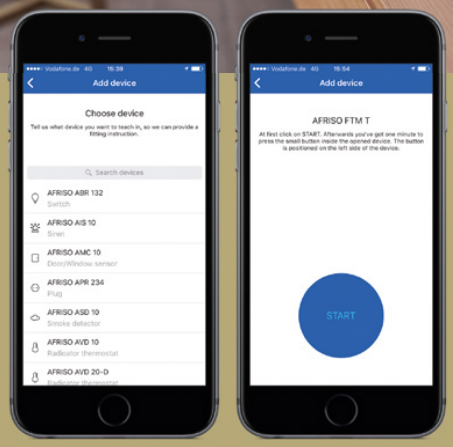
Craftsmanship is only an initial impetus, as future smart functions provided through updates and devices ensure long-term customer relationships, in which the retailer can make a name for himself as a professional and expert partner.

There are a whole range of additional benefits for users: Along with professional devices properly installed by a tradesman, do-it-yourself devices can also be integrated by the user himself. The AFRISOhome gateway is equipped as standard with EnOcean, W-LAN and Z-Wave, and the zigbee and M-Bus wireless standards can be added at any time. Perceived gadgets and products from smart home producers in the consumer electronics market, such as the PHILIPS Hue and IKEA Tradfri LED lighting systems (zigbee), doorbells from Everspring (Z-Wave), camera systems and weather stations from Netatmo, the Amazon Alexa voice control unit or Google Home (W-LAN) can all be connected to the gateway.

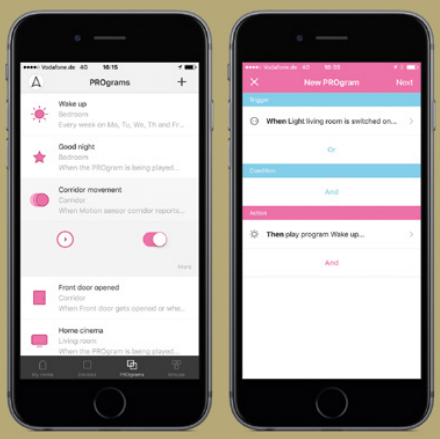
www.afrisohome.com

When the gateway communicates with Amazon Echo, all devices connected to the AFRISOhome gateway can be addressed or interrogated as well as activated. Instructions such as “Alexa, set the temperature in the children’s bedroom to 23 °C, turn on the floor lamp in the living room from 4:00 pm to 7:00 pm, and set the color to green, close the blinds,” and much more, simply make life more comfortable.

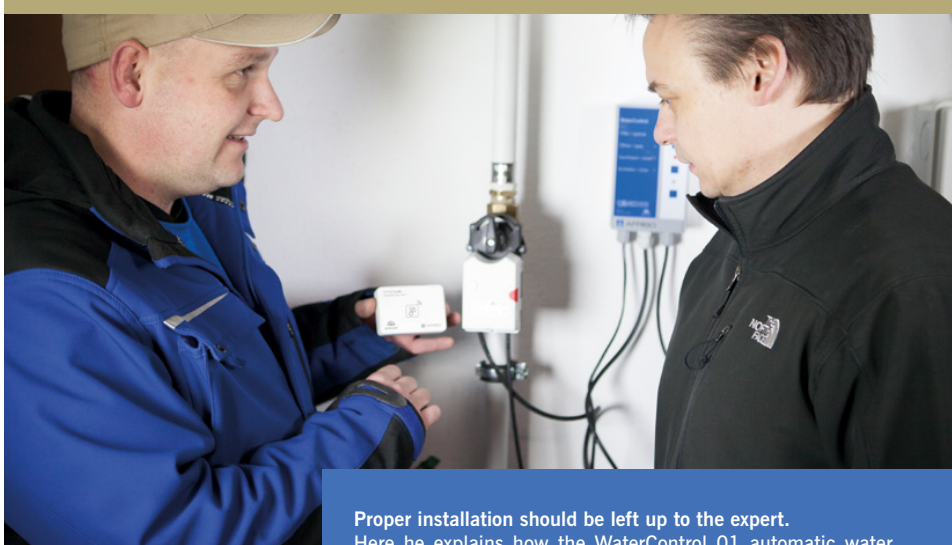




Try out the demo app at: https://my.afrisohome.de



Training new wireless products is effortless: Add the device, select the wireless standard, choose a sensor/actuator from the list of cross-vendor devices, press START followed by the LEARN button on the product. All done!



Proper installation should be left up to the expert.
Here he explains how the WaterControl 01 automatic water shutoff valve works. The kicker is that the associated WaterSensor eco device works without any batteries. When water accumulates, absorbent pads generate the necessary auxiliary energy to transmit the EnOcean wireless alarm to the device. The self-powered and thus maintenance-free sensor can therefore be placed wherever water leaks can occur without anyone noticing them and be literally “forgotten about.”

“Alexa, I’m home.”

EnOcean IoT gateway for integrating Amazon® Alexa

Multiple options: Conveniently control EnOcean-based devices using the hybrid push button sensor, Amazon® Alexa or the wireless switch from Eltako.

Hybrid push button sensor (Full HD touch panel plus mechanical Keys).
© Smart Solutions Lab

Amazon® Echo
© Amazon.com, Inc.

Eltako switch
© Eltako

How about using Alexa to switch EnOcean actuators? BAB TECHNOLOGIE promises an uncomplicated solution: The APP MODULE for EnOcean. With this device, BAB TECHNOLOGIE is the first commercial supplier to provide the option of controlling the complete EnOcean-based Smart Home using the Amazon® Alexa voice control unit. Commands such as “Alexa, raise all the blinds” or “Alexa, set all rooms to 20 degrees“ enables users to operate all comfort functions by voice control.

By Stefan Mainka, Marketing & Business Development, BAB TECHNOLOGIE GmbH

Comfort and design united as best as possible: the Amazon® Echo. © Amazon.com, Inc.

The combination does the trick

Of course, voice control alone cannot meet all of a user's needs. At the moment, a combination of mechanical switches, visualization and voice control is turning out to be the most practical solution for the smart home. Let's not forget: In the area of barrier-free living or AAL (Ambient Assistant Living), the potential of voice control goes beyond pure convenience. Handsfree control gives users with limited mobility entirely new options.

Growth in every direction

In addition to the free, preinstalled app for integrating Alexa into EnOcean systems, the APP MODULE provides the ability to combine additional applications on a device – just as the name implies. For example, products such as Denon® HEOS, Netatmo, SONOS® and DoorBird are as easy to integrate as the Pushbullet® and OpenWeatherMap web services. The EnOcean APP MODULE, with add-ons for light scenes, an intelligent occupancy simulation and even the ability to integrate KNX components, offers even greater flexibility. The manufacturer also provides SDK for developers so that users can develop and subsequently market their own smart home apps.

Partnership with Eltako

The manufacturer based in Dortmund, Germany, is joining forces with Eltako to establish a strong presence in order to make the APP MODULE accessible to the EnOcean market in addition to the KNX segment. Eltako itself sells the APP MODULE with preinstalled smart home apps for Amazon® Alexa and SONOS®. The most common EnOcean profiles are already implemented and are being constantly expanded.

APP MODULE EnOcean
© BAB TECHNOLOGIE

Both companies are looking forward to a successful, long-term and exciting cooperation. "The big potential of the APP MODULE was a key criterion for our collaboration. Especially the possibility to offer our customers new functions in the future fascinated us. When retrofitting smart homes, end customers often already have various smart components. And of course, our customers have the desire to integrate these into our system. With the APP Module this can now be realized," says Eltako's product management.

www.bab-tec.de

Smart Home ready: Connectable

basic installation at no extra cost

Smart home solutions become more and more useful and versatile when they are aimed at the wishes and needs of the users. What systems are available? What has proven to be successful in practice? What is easy and pragmatic enough to be used over the longer term even if not on a daily basis? What cost-cutting, safety or comfort functions should be taken into account right away? What long-term enhancements for care, illness or accidents are available?

By Anne Dingeldey, Marketing, JÄGER DIREKT – Jäger Fischer GmbH & Co. KG

Example of a child's bedroom: An OPUS® BRiDGE switch is installed at the front door of the bedroom for controlling the lighting. An additional self-powered wireless switch can be flexibly positioned e.g. directly on the loft bed.

The OPUS® greenNet system offers entirely new possibilities without the user having to pay more for them. The solutions can be adapted flexibly and individually to the particular life and living situation and be upgraded at any time without complications.

What makes the new OPUS® greenNet system so unique?

In a new building, the basic installation can be configured at no extra cost so that the network can be set up at any time, either immediately or later on. In existing buildings, the technology can be retrofitted and steplessly expanded without renovations. Users can integrate as many elements as they feel would be useful and reasonable and continuously adapt the technology to their own needs.

The base: OPUS® BRIDGE

The connectable electronic OPUS® BRiDGE switches lay the foundation for immediate or later networking. The OPUS® BRiDGE is cable-connected in the standard application and can be additionally activated at any time with EnOcean energy harvesting wireless technology, using the front control panel.

Individual solution

With the individual solutions, users can choose from a large number of preconfigured packages, which are adapted to the most common applications. Depending on the package, the individual solution contains additional energy harvesting wireless switches and/or sensors.

Smart enhancements

The smart enhancements make it possible to network different switches or sensors to form an intelligent, "thinking" system. This approach focuses on the goal of offering a logical benefit.

Networked living

The certified OPUS® greenNet components make it possible to visualize and control each individual OPUS® BRiDGE installed in the home as well as all integrated sensors and switches – centrally from a smart phone or tablet. Scenes, rules and dependencies can be easily created.

You will find JÄGER DIREKT at Light + Building 2018 in Frankfurt am Main, Germany (Hall 9.0, Booth D40).

www.jaeger-direkt.com

Excerpt from the OPUS® greenNet system

Overcoming deployment challenges with EnOcean technology

Self-powered wireless sensor solutions are well established in Industry 4.0 applications. When implementing wireless sensors, gateways and repeaters, however, various challenges can occur. This successful deployment by Pressac Communications underlines, what challenges need to be faced, and how a versatile IoT solution based on EnOcean technology was able to overcome challenging site conditions and deliver a cost effective solution.

By Jasper Spencer, Head of Business Development, Pressac Communications Limited

The Pressac EnOcean Repeater allows the simple repeating of all valid radio telegrams for devices based on the EnOcean wireless standard.

The customer required a cost effective Internet of Things (IoT) solution to understand electrical current and operating temperature norms of factory equipment, including conveyor motors and gearboxes. The management sought to predict equipment failure and eliminate costly downtime, move away from a scheduled maintenance plan and adopt a more efficient predictive model of operation. The solution was required to monitor electrical current and machine temperatures, define normal operation ranges to create standard operating profiles, allowing thresholds for alerts and work orders be generated.

The Challenges

During the installation, multiple sensors including Pressac's energy harvesting CTs and three channel temperature sensors were deployed (indoors and outdoors). Due to challenging site conditions such as a large building footprint and structural steel fabric, not all of the sensors were within range of the EnOcean gateways. Additional deployment challenges included electrical noise from variable frequency drives and limited access to mains outlet sockets for additional gateways.

The IoT Solution

To overcome these challenges cost effectively, we used the Pressac EnOcean Repeater with selective repeating functionality. Using the device in link test mode, it was possible to identify optimum repeater positioning. Knowing the optimum installation position, the devices could then be powered via existing Ethernet network infrastructure.

The Pressac EnOcean Repeater's link table was then populated with the required devices by remote commissioning. Using selective repeating functionality, some telegrams were repeated twice; extending the range of selected sensors up to 90 meters. Selective repeating functionality allowed multiple repeaters to be used without adverse radio collisions. EnOcean sensors were added to the Pressac EnOcean Repeaters' link table, entries could be selectively repeated; facilitating a versatile and robust solution.

www.pressac.com

HELIOS

End Office Thermostat Wars

The Helios VAV Diffuser is a revolutionary leap forward in air distribution technology. Wherever individual indoor comfort is needed, Helios is a perfect solution. It's easy to install. Each individual unit uses a unique digital logic system so it can operate on a narrow temperature band, creating more unique zones and much greater user control. Gone are the days of inter-office thermostat feuds.

Titus
Redefine your comfort zone.™

The smart solution for a perfect room climate

MAICO and wibutler turn ventilation into something smart.

To make one's home as comfortable as possible – that is the goal shared by all homeowners, housing associations and tenants. MAICO now offers an intelligent way to comfortably integrate ventilation into a smart home network and control it oneself from a smart phone or tablet with only a few steps. Which makes the best room climate a matter of course.

By Sabrina Jokiel, Marketing, and Christian Pfaff, Product Management, MAICO Elektroapparate-Fabrik GmbH

Turning a house into a smart home with MAICO and wibutler

The wibutler system is an intelligent home server that combines devices and sensors from different suppliers into a building automation network. This system specifically gives users a way to integrate an individual MAICO fan or a combination of multiple MAICO devices into a centrally controlled smart home network, for example together with heating, lighting and blinds. The fans communicate with each other exclusively via the EnOcean wireless standard, which means that no cables need to be laid.

User-friendly with flexible upgrade capability

The installer teaches in the wibutler-capable fans and in doing so enables end users to control the fan themselves individually and without complications. The ingenious user management functions make it possible to create three user accounts: an ordinary user, an administrator and an external manager. As a result the ventilation system can be checked, configured and maintained remotely to meet the needs of the specific target group.

The MAICO ECA 100 ipro RC or RCH and/or ER 100 RC fans, which are based on EnOcean wireless technology, are suitable for integration into the wibutler network. MAICOsmart forms a system of fans. The fans can be linked to wireless and self-powered CO_2, moisture or temperature sensors and be correspondingly controlled either individually or within the system.

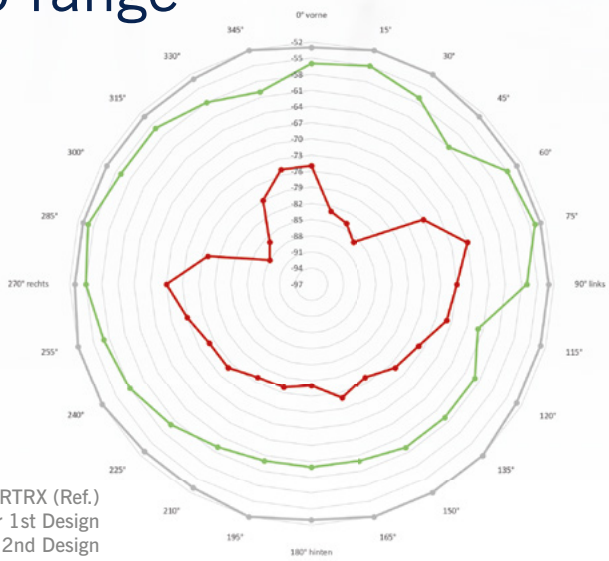
www.maico-ventilatoren.com

Useful. Necessary. Quality locking.

Certifying EnOcean devices to ensure radio range

In order to achieve the best possible radio range in EnOcean-based solutions, the performance of the integrated antenna and the avoidance of self-made interference are the key to success. Experience from 24 months of practice at ViCOS demonstrates the extent to which certifying EnOcean devices has proven to be successful.

By Thomas Rieder, CEO, ViCOS GmbH



Grey curve: RTRX (Ref.)
Red curve: Sensor 1st Design
Green curve: Sensor 2nd Design

Radio Performance Certification Specification

That is the name of the technical specification drawn up by the EnOcean Alliance, which defines the radio quality features that an EnOcean product must meet in order to be certified. This includes any identical transmission and reception performance in all directions, assuming a typical installation situation, and the reliable reception of EnOcean messages at the range limit. Device developers can perform the defined tests themselves, and a RF test chamber is not necessary. However, the specification not only establishes rules for certification but is also an excellent guideline for development. More and more manufacturers are recognizing this benefit and using it actively for their products.

Practical experience

For more than two years now, ViCOS has been relying on the verifications described in the specification in developing its products as well as in assessing and optimizing EnOcean devices. After all, these verifications unerringly identify the causes of many malfunctions and cost-intensive service deployments in the field. This is how it works in practice:

The signal from a sensor is not reliably received even though the distance to be covered is only just over 10 meters, and there are no relevant obstacles. The radiation characteristic demonstrates a weak transmit power with significantly decreasing directions (red curve in the diagram). After optimizing the antenna (green curve), the sensor reaches the expected range without problems and independently of direction.

A 230 V actuator is flawlessly received by the gateway, but does not reliably respond to switching commands. Tests conducted according to specification show that the highly compact design of the actuator causes the receiver to malfunction, and the receiver is no longer able to decode what is actually a perfectly adequate receive signal. In this case, the only remedy is to redesign the actuator, while once again the defined tests assist in a quick solution to the problem.

Device manufacturers can use the PROBARE PRO500 test system to cost-effectively conduct their own optimization work in development and testing for certification purposes. As an alternative, ViCOS offers a testing and optimization service for EnOcean devices.

www.vicos.at

The smart building planning process – Five steps for creating the IoT-ready building

A lot has been written about the "smart building." But how do you plan something like that? By Prof. Dr. Michael Krödel, Managing Director, IGT-Institut für Gebäudetechnologie GmbH

Step 1: Define the requirements

The first step is to determine what you expect to get out of a smart building. You may want to monitor how intensively the rest rooms are used in order to adapt the cleaning intervals according to the requirements. Or would you like to install beacons in the building so that employees and guests can navigate the building? Or should elevators, coffee machines and toilet flush valves send their usage data to a higher-level BMS (building management system) in order to contribute to an overall understanding of the building use or employee well-being? Make a departure from the ways in which building automation used to be planned and formulate your own ideas as requirements.

Step 2: Check feasibility

Research whether other projects that meet your requirements already exist. You will not have to reinvent the wheel for all innovative ideas. When you do break new ground, you should consider a prototype installation of a pilot area.

Step 3: Draw up specifications

Formulate your requirements with a focus on benefits and results. Determine the precise performance of the automation system as specifically as possible. These requirements will become part of the later contract or form the basis for a later acceptance process.

In this step, you should also keep in mind that the building must be prepared for later expansion. In this regard, it is necessary to stipulate the support of radio-based sensors. This is the only way to respond to the sensor type and position as flexibly as possible. Also keep in mind that these radio-based sensors must operate without batteries – the large number of sensors to be expected will make it impossible to regularly replace the batteries.

Step 4: Choose a suitable building planner

This will be the most difficult step: Building planners like to rely on empirical figures and prefer to stick to what they know. Empirical figures are rarely available for most innovative requirements. There are good building planners who dare to try something new – and with a little patience, you will find them.

Step 5: Select technology, manufacturers and a system integrator

The last step is to select the technology and manufacturers. First look for a competent and innovative system integrator. You should take into account the system integrator's experience and judgment when choosing the components. After all, he will support and add to these components later on.

If you would like assistance in planning your building, we would be happy to help out with a one-day workshop through the Institut für Gebäudetechnologie. During this workshop, we can explain all steps in detail, based on specific, practical examples, and flesh out steps 1 and 2, in particular, through the use of proven checklists and templates. More information can be found on our website under "Beratung" (Consulting).

www.igt-institut.de

From the control cabinet directly

BECKER-Antriebe is developing a flexible tubular drive with an integrated EnOcean actuator

In the prefabricated home segment, in particular, EnOcean technology has become successfully established as the standard among different suppliers. However, classic drives, which require a supply cable to an external actuator – in the switch box, for example – are still used for the self-powered control of shutters and blinds. A unique and innovative solution offers new possibilities for the future.

By BECKER-Antriebe GmbH

into the drive

Precise control

As a company specializing in drives and controllers for shutters, sunshields and doors, Becker-Antriebe is now the first supplier to install the future-oriented EnOcean technology directly into a tubular drive and thereby make it even easier to use – because separate actuators and significant installation effort are now things of the past. Another benefit is that the wireless actuators built into the drive itself make it possible to transmit absolute values and thus provide precise position values, which makes exact drive control possible.

Across disciplines

The new Becker solution is also seamlessly integrated into the principle of interdisciplinary interoperability, and it supports both remote management and remote commissioning. Due to the bidirectional feedback of position and status, the drive can also be effortlessly integrated into the central home automation system. The “new kid on the block” among Becker tubular drives also earns points with sensitive obstacle detection, freeze prevention, intelligent installation management and many more functions. Combined with other EnOcean products, it thus provides ventilation and various alarm functions without an additional, higher-level control panel. Many things are possible in sustainable building automation – and with Becker-Antriebe they are now even easier.

www.becker-antriebe.com

Using EnOcean technology for smart and integrated control of lights, blinds and temperature in building automation

The wireless EasyClick system from PEHA by Honeywell makes it possible to control lights, blinds and temperature using EnOcean technology.

With the EasyClick system from PEHA by Honeywell, EnOcean technology can be used to integrate a wireless light, blinds and temperature control solution into the building automation system without problems. The A classification for energy-efficient buildings as specified by DIN EN 15232 can thus be achieved in a building control system during retrofit, renovation and restoration projects as well as in flexible new building installations.

By Carsten Krämer, Product Management, PEHA Elektro GmbH & Co. KG, a Honeywell Company

Easy integration into the CentraLine building management system

EnOcean EasyClick applications and sensor information are integrated into the CentraLine system via bus-capable antenna, which can be distributed within the building. The antenna bus is connected to either the HAWK controller (for a hardware solution without a supervisor system) or to the ARENA NX supervisor.

Bidirectional EasyClickpro components can then be automatically detected by the controller and integrated into the controller program with a simple drag & drop operation. The controller program can thus access the EasyClick components so that, for example, the precise position of the blinds, including louver orientation, can be centrally controlled in addition to the functions in the room. The energy consumption values of connected devices and operating hours of lamps can also be detected for effective maintenance. In addition, lamp outages are detected and reported, sensor data is provided for processing and analysis, and lighting functions can also be integrated into a fire detection concept.

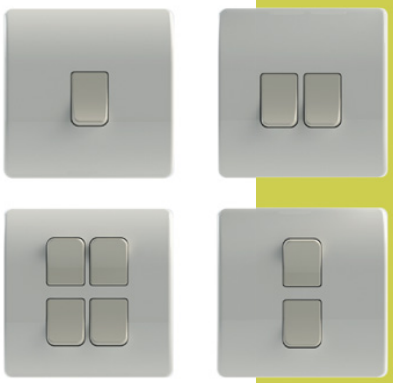
www.centraline.com
www.peha.de

A growing ecosystem for modern lighting control

In order to optimize building performance, save energy, reduce maintenance costs, and provide a customizable environment for building users, modern buildings need to be smart. iaconnects' new EnOcean-based product range helps construction and facilities management teams achieve this by providing an integrated, cloud compatible solution which is powerful yet easy to install, commission and maintain.

By Chris Moorhouse, CTO, iaconnects Technology Limited

Intelligent MobiusFlow® Edge Gateway



Self-powered wireless lighting controls

3G / 4G Intelligent Gateway

The MobiusFlow® Edge Gateway allows connectivity and control of wired and wireless devices, all provisioned via a 3G / 4G managed mobile data service. The gateway has an on-board CPU and MobiusFlow® configuration software. It also has an EnOcean transceiver and Ethernet connectivity, allowing the direct connection of either EnOcean sensors and actuators or any other controller via the Ethernet port to the cloud. The MobiusFlow® configuration software not only provides system configuration but also has Node-RED fully integrated, allowing logic control and connectivity to other devices and protocols using a simple drag and drop user interface.

Reliable, energy saving lighting control system

The plug and play multi master building control module (BCM) allows quick and easy connectivity of all DALI luminaires with power and data and optionally analog and digital IO for control of fan coil units, chilled beams and reheater batteries. Each BCM has an on-board EnOcean transceiver and can be connected with standard CAT 5e cables and connectors to create an EtherCAT network for fast and reliable energy saving lighting control and HVAC systems. All modules are designed to be quick and easy to install and commission with the MobiusFlow® configuration software, reducing costs and time on site. The 8 Port DALI intelligent BCM offers all of the advantages of a traditional modular wiring system while adding the benefits of not having to address any DALI devices.

Self-powered wireless lighting controls

Utilising the radio transmitter module from EnOcean (PTM 215B, PTM 210 PTM 210U, PTM 215), the range of UK design switches is designed to enable the installation and implementation of wireless remote controls without batteries.

www.iaconnects.co.uk

The Smart Home Gateway enables seamless communication in the Internet of Things.

Seamless communication in the Internet of Things

Billions of connected devices such as phones, computers, appliances and sensors should be able to communicate with one another regardless of manufacturer, operating system, chipset or physical transport. The gateway solution from BSC Computer enables seamless communication in the IoT by connecting the EnOcean wireless standard with leading protocols like IoTivity. **By Jörg Hofmann, CEO, BSC Computer GmbH**

Seamless, interoperable connectivity for the IoT

The Open Connectivity Foundation (OCF) has over 380 member companies, lead by industry leaders such as Microsoft, Intel, Qualcomm, Cisco, Electrolux, LG, Haier and Samsung. The organization is creating a specification and sponsoring an open source project to make this possible and will unlock the massive opportunity in the IoT market, accelerate industry innovation and help developers and companies create solutions that map to a single open specification. OCF will help ensure secure interoperability for consumers, business, and industry.

BSC Smart Home Gateway: the key to interoperable IoT

EnOcean Alliance promoter member BSC Computer GmbH is a platinum member of the OCF and is spearheading the efforts to create the multi-standard interoperable eco-system for IoT applications such as smart homes. As early as 2007, BSC pioneered the solution enabling EnOcean sensors and actuators to communicate with the internet and in 2009 released the first smart home app followed by solutions for smart metering and ambient assisted living. The current generation of the BSC gateway solution is based on the latest highest-security Intel platform, enabling the entire EnOcean ecosystem to be easily integrated into multiple interoperable IoT solutions.

All things connected

At CES 2018 in Las Vegas, OCF together with Comarch Healthcare, Haier, Honeywell, LGE, Lynx Technology, the EnOcean Alliance, and other partners demonstrated how to enable easy user interfaces to control the IoTivity-based Smart Home.

EnOcean-based sensors generate reliable data, send it directly to the OCF network via an EnOcean gateway and then, for example, connect it directly with the intelligent InstaView ThinQ refrigerator from LGE. This means that all intelligent devices can be visualized and controlled using the display on the refrigerator. If, for example, a window monitored with an EnOcean-Eltako sensor is opened, you will immediately receive messages on the LGE InstaView ThinQ refrigerator and the Lynx MiND Mobile App, while the Honeywell T5 Smart thermostat setpoint is set automatically in order to save electricity.

When an EnOcean alarm button is pressed, the Haier Wall Oven automatically turns off; alarm messages are immediately visible at several interfaces. A potential water leak can be detected using an EnOcean Eltako water sensor. In this case, an alert message will be displayed directly on the LGE InstaView ThinQ refrigerator and the Lynx MiND Mobile App.

www.bscgmbh.de
www.openconnectivity.org

Intelligent buildings start with relay switches

Today, it doesn't take a lot of effort or money to turn your home into a smart home. NodOn's ultra compact relay switches will help you to easily turn any home intelligent for more energy savings and comfort.

By Coralie Feillault, PR and Communication Officer, NodOn SAS

Three relay switches to cover all uses of the house

Turn the lighting system smart with the relay switch 2 channels, automatically control the heating system or home access (garage door, gate) with relay switch 1 channel – dry contact and all shutters with NodOn's new roller shutter module – all based on the EnOcean wireless standard.

Flexibility and simplicity

Whether it is to retrofit or create a new Smart Home ecosystem, NodOn relay switches are maintenance-free and don't need any construction work. Those ultra-compact modules are directly plugged onto existing appliances, and pairing them to other EnOcean devices is a child's play.

Enjoy living in an energy efficient Smart Home

Reducing energy consumption and offering more comfort are benefits enjoyed by the end user. NodOn relay switches are interoperable with any other EnOcean controllers and home automation gateway. Launch a wake-up scenario and open the roller shutters at 20%, automate the lights and reduce heating when no one is there. Even controlling the boiler or the garage door has never been easier for the end user. The home is adapting itself to the user habits: those three relay switches make for real energy efficiency.

www.nodon.fr

Leading the way in design and functionality

The new Vimar one and two-rocker button controls based on EnOcean technology are the ideal solution for ensuring practicality, freedom of installation and versatility: These devices can be positioned almost anywhere, even on glass or wood surfaces. And without requiring any masonry work, as they don't need a flush mounting box.

By Luigi Cervato, Product Manager, Vimar SpA

Intuitive installation

Thanks to energy harvesting technology, the product is so easy and intuitive to use that it "installs itself," without any wiring, and is active as soon as it is installed. The device is in fact powered by exploiting the energy generated at the press of a button and therefore requires no batteries, which would otherwise have to be replaced and disposed of. Furthermore, the product is compatible with systems using the EnOcean wireless standard.

The device is also unobtrusive and thus designed to blend style with full installation flexibility. The one und two-rocker button are an ideal solution for lighting control in retrofits, redevelopments and furnishing updates, or any installations which have regulatory or architectural constraints.

www.vimar.com

Seamless retrofitting of existing LED systems

GRE Alpha joined the EnOcean Alliance with an eye toward designing LED drivers that operate in harmony with energy harvesting wireless switches. The new EnOcean dimmer was presented for the first time at the Hong Kong International Lighting Fair 2017 and stood out due to its especially easy installation, among other things.

By Richard Fong, Executive Director and GRE Alpha Communications Team, GRE Alpha Electronics Ltd.

Wireless lighting control

The GRE Alpha ENO-DIM offers advantages over other wireless dimming modules. Because the module is designed to work with any EnOcean-certified self-powered wireless switch, any constant LED lighting system can now be retrofitted to EnOcean wireless technology, and thus reduces time and costs. While most smart lighting systems utilize the ISM (Industrial, Scientific, Medical) radio band, the ENO-DIM module uses EnOcean's communication frequencies, allowing for noise-free near-instantaneous feedback. The ENO-DIM module supports frequencies of 902MHz in North America, 928MHz in Japan and 868MHz in Europe and China.

ENO-DIM applications include architectural lighting, effect and contour lighting, general commercial illumination, warehouses, signage, strip lighting and more. The powerful combination of GRE Alpha's dimming technology and EnOcean's self-powered sensors and switches are poised to revolutionize smart building lighting design.

www.grealpha.com

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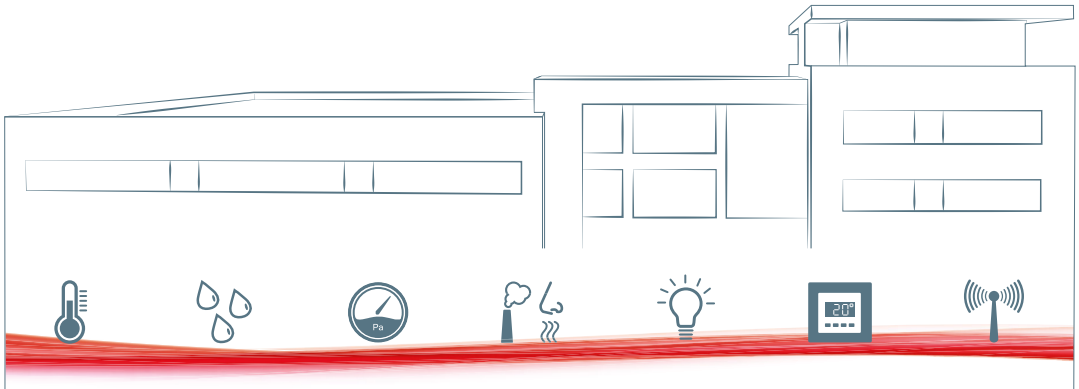

HOME OF SENSOR TECHNOLOGY

STC-IoT EnOcean IoT GATEWAY

By means of the new STC-IoT gateway, wireless *EasySens®* sensors and actuators can be integrated into the "IoT" world.

Utilize gathered data to drive other devices in the controls network more efficiently based on historical data or predictive functionalities – regardless of the technology or manufacturer.

- Simple (retrofit) integration into *EasySens®* (EnOcean) system architectures
- Browser interface for quick commissioning and administration
- Compatible with multiple Cloud solutions and DDC's, providing secure TLS encryption
- Utilizes standard IoT-protocols such as JSON and SimpleAPI (SAX)
- Unlimited number of wireless sensors and actuators can be integrated

SAB+ WIRELESS VALVE ACTUATOR

The new *EasySens®* wireless valve actuator SAB+ was especially designed for an optimized energy-efficient control of radiators and underfloor heating in commercial spaces.

It uses the temperature difference between ambient and radiator temperature to generate enough energy in order to drive the valve and send/receive telegrams.

- Energy-autarchic through Seebeck effect
- Maintenance-free
- Frost protection
- Configuration via airConfig
- LED for status indication
- Integrated antenna for sending and receiving

MADE IN GERMANY

» www.thermokon.com

Multifunction touch display

The multifunction touch display by Altecon is a new user-friendly interface developed to manage HVAC, lights, blinds and security in an advanced EnOcean-based building automation. In residential applications it is the ideal controller to manage heating, air conditioning and lighting in the various rooms where simple EnOcean sensors and actuators are installed.

By Marco Cabrini, R&D, ALTECON SRL

The multi-zone capability simplifies the HVAC and lighting control by adjusting to the different devices such as radiators, fan-coils, splits, ON/OFF lights and dimmers in residential, offices or hospitality buildings. The WiFi IP connection allows tunneling of the EnOcean interface through TCPIP sockets, giving IP/EnOcean gateway functionalities. The WiFi cloud interface also allows local or remote management with apps or a browser. NFC capability permits new functions such as RFID tag reading for remote commissioning or short communication.

The large 4.3" TFT display with capacitive touch panel offers wall or table supports and enables complex installations management with scalable multizone capability of 4, 9 or 15 rooms or spaces. The device offers fully local programmable commissioning of EnOcean sensors, actuators, thermostats, among more than 70 EnOcean profiles (EEPs).

Various applications

It is intended for use as a central management console, providing fully information about temperature values in the different rooms, occupancy, lighting and window conditions. It also allows the active control of EnOcean-based actuators, thermostats and more, both in manual and automatic mode. The user has an immediate view of the status of each room and can easily switch between rooms by interactive GUI, both for HVAC and lighting/blinds management. Images, titles, device commissioning and firmware may be updated from the cloud. Cloud connection via WiFi permits centralized remote management with artificial intelligence and apps.

www.altecon.it

IMPRINT

perpetuum – the innovative magazine for customers and partners of EnOcean GmbH

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Published by: EnOcean GmbH, Munich,
Andreas Schneider, CEO

Edited by: EnOcean GmbH, Gina Klute,
PR & Communications Manager, gina.klute@enocean.com

Concept and design
artcollin Kommunikationsdesign, www.artcollin.de

Photo-Credits:
www.thinkstock.com: title, p4 (view out of office), p6 (globe), p8 (bridge), p9 (garage), p12, p13, p14, p15 (office), p18 (meeting), p22, p23 (laurel wreath), p24 (sky), p26 (shopping woman), p32 (couple), p34 (elephant), p37 (women), p41 (handicapped woman), p44 (industrial hall), p46 (woman), p47 (hands), p48, p49, p54 (globe)
www.istockphoto.com: p25 9comeback (illustration), p30 AdreyPopov (piggy bank)
Becker-Antriebe GmbH: p5 bottom (family), p50

Printed by: RMO, Munich

International circulation: 11,000 (print and e-paper)
Frequency: semi-annually
Reader's service: perpetuum@enocean.com
Phone: +49 89 6734 689 0

The Deutsche Nationalbibliothek has archieved the electronic publication 'perpetuum international edition,' which is now permanently available on the archive server of the Deutsche Nationalbibliothek

+++ **ISSN 1862-0698**

perpetuum 2 I 2018 (German & English)
will appear in October 2018
Editorial deadline: July 2018

Overview of the EnOcean Alliance members

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No Wires. No Batteries. No Limits.

www.enocean-alliance.org/products

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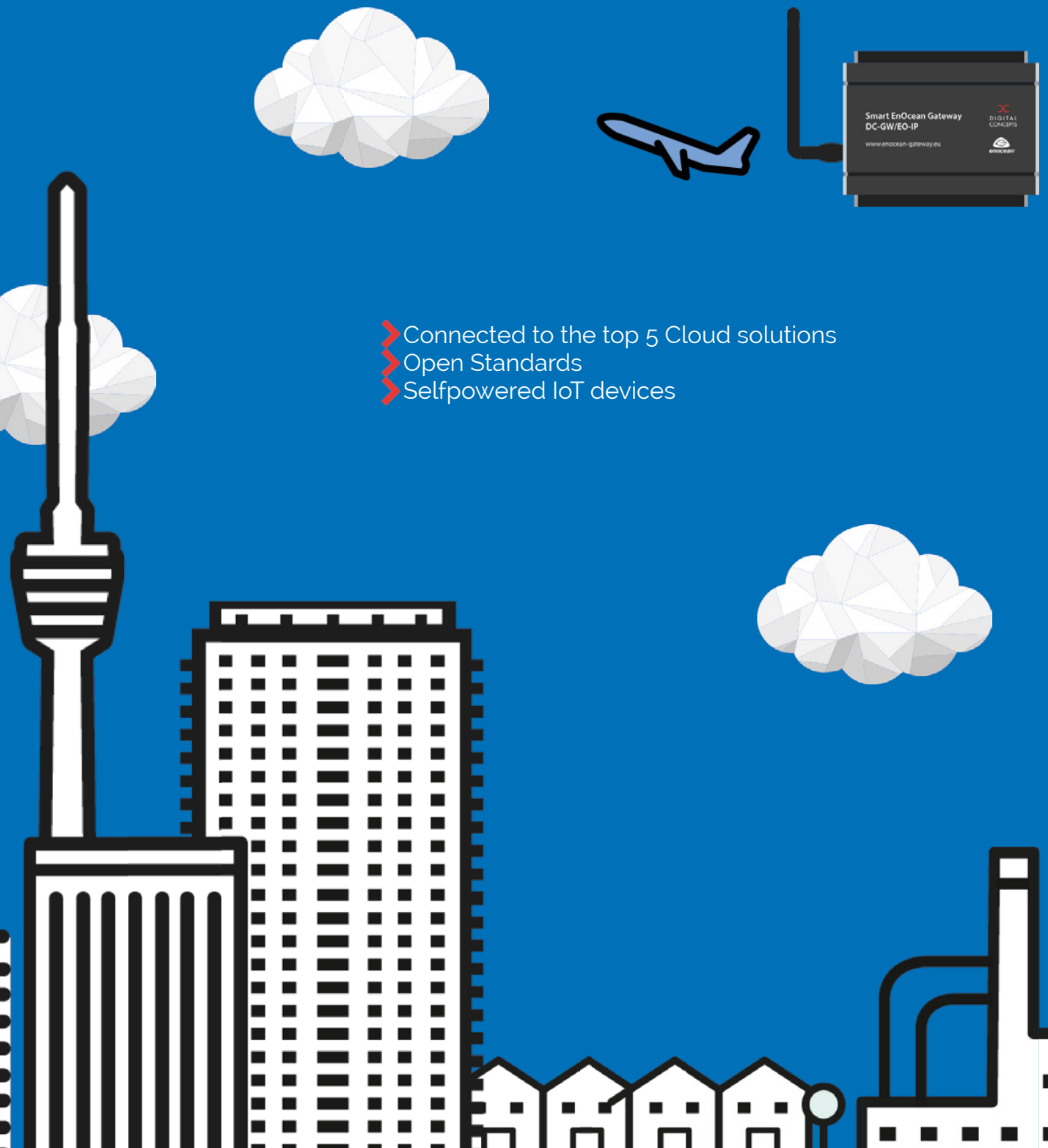

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