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IoT • Energy Management • ETS6

Services with KNX

KNX IoT - Added value
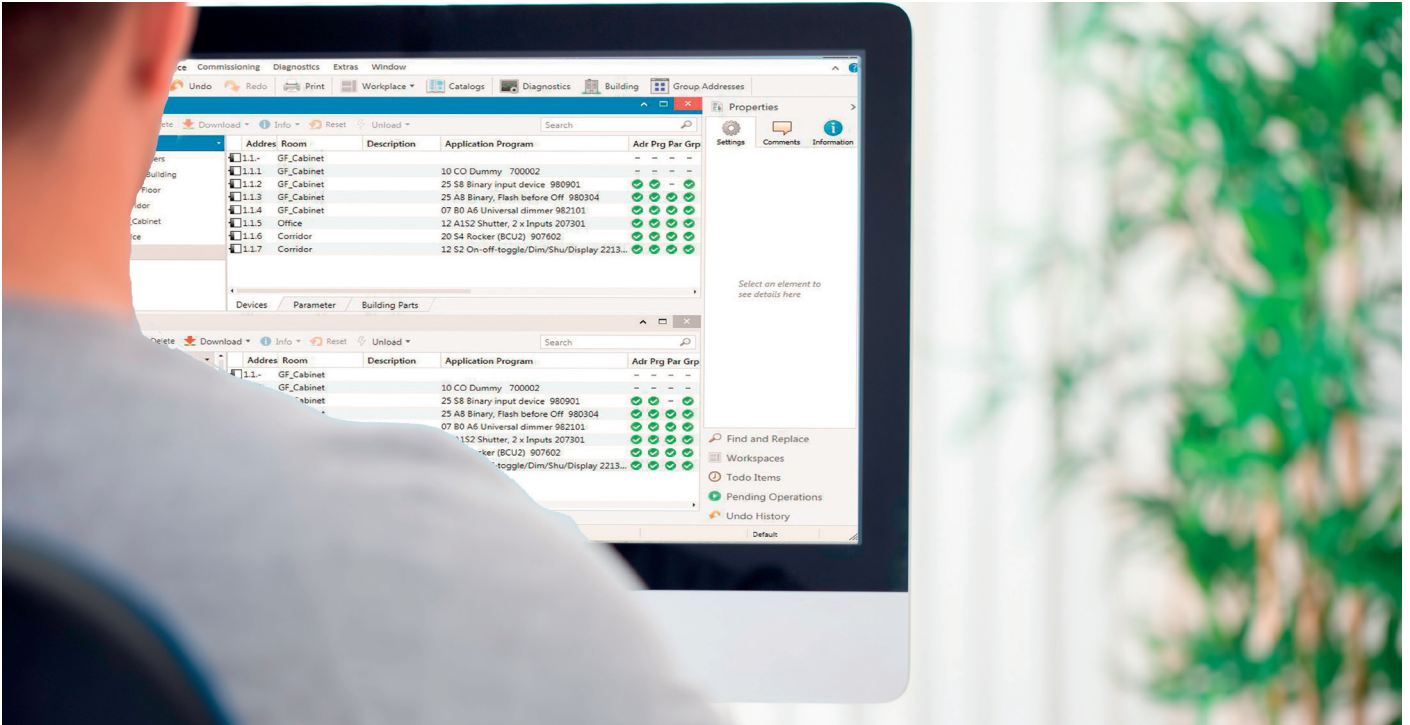
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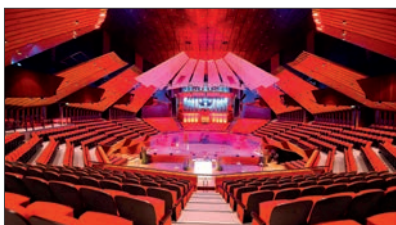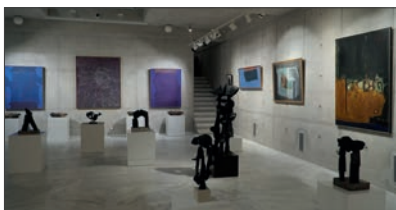| New licenses	Price	Restrictions
ETS5 Professional	1000,00 €	
ETS5 Supplementary	150,00 €	2 licenses maximum, only together with ETS5 Professional
ETS5 Lite	200,00 €	maximum 20 products per project
ETS Inside	160,00 €	1 project only with maximum 255 products
ETS Apps		For further information please visit https://my.knx.org

Upgrade licences	Price	
ETS4 Professional > ETS5 Professional	350,00 €	
ETS4 Supplementary > ETS5 Supplementary	110,00 €	
ETS4 Lite > ETS5 Lite	150,00 €	

Educational licences	Price	
ETS5 Training Package	1200,00 €	1 x ETS5 Professional, 1 x ETS Inside, 10 x ETS5 Lite

All prices excl. VAT

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Services with KNX are the future

Heinz Lux
CEO, KNX Association

The British poet and humourist Thomas Hood (1799 – 1845) was quick to understand what makes the hearts of early adopters, innovators and advanced technicians beat faster, even today: "There are three things which the public will clamour for, sooner or later: novelty, novelty, novelty." According to neurobiologists, it activates the nucleus accumbens, causes neuronal cheering in the basal ganglia and makes other regions of the brain hum, contributing to the feelings of satisfaction. In short, pure dopamine which means pure happiness.

KNX enters its fourth decade in 2020. Just like Sir Francis Bacon (1561 – 1626), we believe that „progress in knowledge cannot be achieved without innovation; truth is the daughter of time."

In the sense that knowledge begets knowledge. „Knowledge is power," Bacon postulated. Innovation is a prerequisite for progress in knowledge. And that is our business. With KNX IoT.

Services are increasingly becoming a business model of the future.

Data is the new oil.

Join us in the „KNX Service future!":

First, there's the new ETS6, which supports semantics and will make smart homes equipped with KNX IoT even more intelligent in the future. Then there's KNX IoT, which makes voice control feasible and increases interoperability, machine learning and makes AI a real possibility.

Buildings of the future will be more than just a jumble of networked devices and systems, so we have to change our perspective from „inside" to „outside", as external applications can use a building's data and functions.

Buildings generate services that can provide basic services for application development via common ontologies. We connect lights, sensor technology, white goods, heating, air conditioning and charging infrastructure via a semantically described interface with data aggregation services, user management with visualisation and archiving services for the digital twin for machine learning.

Aristotle left us the insight that „nothing comes from nothing".

But that is precisely what we have achieved.

In thirty years of building services, we have worked with KNX manufacturers, KNX partners, National Groups and Training Centres to create a complete system for intelligent buildings from nothing, with commitment, enthusiasm and the courage to face the future. KNX.

As KNX enters its fourth decade, everything is different.

KNX is forging ahead again, taking new paths into a new age, into a new era. On the threshold of a new decade and with all our experience, we know: if we are to remain reliable, sustainable and fit for the future, we must take part in shaping the future.

If data is the oil of the future, then services are the smart applications of the future.

> **Innovation is a prerequisite for progress in knowledge. And that is our business. With KNX IoT.**

KNX – Younger than Ever

When we first laid down the principles of KNX, we envisaged one standard technology (ISO14543-3), able to communicate or interwork with thousands of products, which required only one tool for commissioning, namely ETS. After 30 years of hard work, we are clearly riding the crest of the wave. KNX is now a global standard, present on every continent, meeting all security standards, and at the forefront of the latest technological developments such as IoT. And yet we still hold true to our core values including backwards compatibility.

IoT as the future

IoT allows every single compatible device to be connected to a global network, and this provides huge opportunities for companies to bring large and small solutions to the market. Thanks to IoT, customers of smart homes and buildings have millions of new products and solutions to choose from, but this vast array of products and solutions also present a problem: most do not work together, and many which are on the market today, could disappear tomorrow.

This is where KNX fits into the bigger picture. First of all, we are not a new player that has just jumped onto the IoT bandwagon, but an established association that provides a solid solution backed up by almost 500 companies worldwide. Secondly, we bring one integrated solution to the puzzle of IoT, as we are able to integrate any application into one common IoT solution.

Cyber security - IP security

Security is not only important for KNX, it is essential. We will not risk the security of KNX projects and have therefore developed a double-secure mechanism to guarantee that our solution is secure. We are proud of the fact that our technology, namely KNX Data Secure (secure device-to-device

Franz Kammerl
(Siemens) is president of the KNX Association in Brussels

communication), is already a European Standard EN50090-4-3, and that KNX IP Secure (securing KNXnet/IP communication) has also become a worldwide standard, as EN ISO 22510. And the icing on the cake is that it is recognised as a standard for building automation.

Digitalisation of the building

These days there is a big trend towards digitalising the entire energy sector. Considering that the buildings in a city are responsible for around 40 % of the CO_2 emissions, we need to help them become sustainable. This is where the KNX technology can make all the difference. Thanks to KNX, energy generation can be coordinated within a building, its use optimised, waste prevented, and future use with external providers coordinated very easily. This will be a must in the near future, and it is already possible with KNX today.

Services

IoT has made it possible to take our principle of interworking beyond the doors of the building and use any network to communicate, securely, with all kinds of external services. An obvious example is when remote supervisor can be alerted should various detectors around the home provide an alarm. We could also use cloud services to communicate with energy suppliers in real-time, to determine whether the power we generate should be topped up, stored or sold back to the grid. And imagine being able to document all of these interactions with just one tool; ETS! This capability truly unleashes the power of KNX, opening up so many new possibilities for interworking, and as a result, even more opportunities for KNX professionals.

Young at heart

It could be argued that something as industry-changing as KNX can only come about with the drive and idealism of youth. In the KNX Association, this optimistic spirit remains as energetic as ever. Indeed it clearly holds true for our entire membership; I am always so impressed by how enthusiastic and creative everyone involved with KNX is, in finding ways to improve not only people's lives, but the wider world, through intelligent automation.

And whilst we also have the confidence that an experienced and successful organisation brings, we will never rest on our laurels. Being open to new ideas and striving for a better future is at our core. Our principles remain the same, only now their application is expanding beyond anything we could have imagined 30 years ago. As Josef Neckermann, founder of the first German mail-order business, so aptly put it, 'Keep up with the times and time won't pass you by.' In fact, we are not only keeping up, we are constantly driving the change.

ETS6 Professional launches next software generation

New features for KNX RF, KNX Secure and KNX IoT including enhanced user experience

As the world's only engineering tool software for building automation, ETS guarantees installers and system integrators the highest level of efficiency in their work. ETS is manufacturer-independent, offers an extensive range of products and enables applications for almost all technical trades across a wide variety of building types. KNX ensures that technical specialists can rely on their tools. It does this by continuously developing ETS in partnership with KNX members and by implementing suggestions from ETS users to keep pace with developments in the industry. ETS6 Professional, a brand new generation, is set to be presented at the Light + Building trade fair in Frankfurt am Main from 8-13 March 2020.

The current ETS Professional generation, ETS5 first hit the market six years ago as a 64-bit application offering considerable data processing power, integration of new KNX applications like KNX RF, KNX Secure and optimised workflows. ETS still promises to be a step ahead of its time. As the next generation, ETS6 Professional is KNX's response to new requirements from the IoT environment, KNX RF and KNX Secure, as well as to new, individual practices in the use of browser-oriented user interfaces.

KNX IoT

For KNX projects to be understood outside the KNX world, the information they contain must be prepared in a (machine-)readable format that is comprehensible to third parties. This allows it to be further processed by higher-level control systems, ensuring also that the meaning of all KNX functions is understandable. KNX projects also need to be documented in the BIM (Building Information Modelling) environment. To that end, ETS and all KNX products will be progressively equipped with internationally standardised descriptions and tags. This makes it possible to express functions implemented in ETS and special device properties in a machine-readable format. For example, the output of a KNX device with a temperature sensor, whose temperature output is given in degrees Celsius and in a value range of -272°C or higher. Or a switching/dimming function, which in turn allows conclusions to be drawn about individual data points in the function. ETS6 provides this information as an export file.

UI & UX

The forthcoming ETS6 is also an improvement on the previous generation thanks to its new user interface (UI). The corresponding user experience (UX) responds to current practices in the use of browsers and visual orientation. With it, project files can be displayed with appealing graphics and building photos, and clearly organised. Archiving and searches can be managed using icons and tags for specific project categories such as single-family homes, office buildings or hotels.

ETS6 Professional can also be opened in several main windows simultaneously. With this feature it's easy to make a quick change to configuration work. You can also open a list of projects currently being edited with the same feature. The tabs can be fixed to the taskbar, as is usual in Windows. ETS6 Professional thus accommodates new user behaviour,

Flexible window and panel Handling
ETS6 Professional can run in multiple main windows
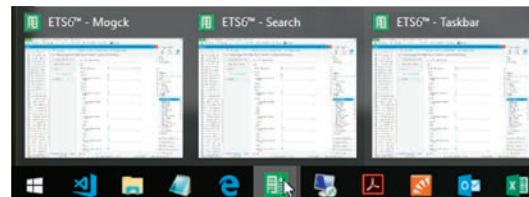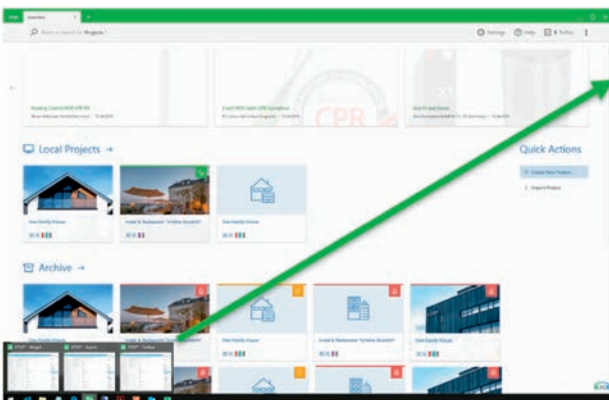
The new user interface offers flexible window and panel handling for project planning and management

Twisted Pair segment

KNX TP Device **1.1.1**

KNX TP Device **1.1.2**

KNX TP Device **1.1.3**

KNX TP Device **1.1.7**

TP Line

KNX TP/RF Media Coupler **1.1.4**

MEC RF
TP RF MEDIA COUPLER
Apricum

RF segment

KNX RF Device
1.1.5

KNX RF Device
1.1.6

RF Line
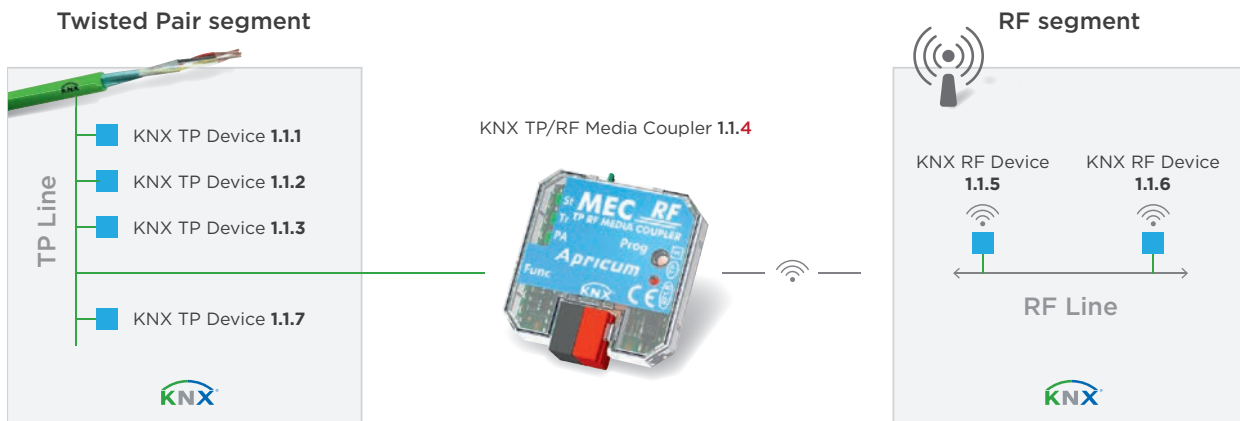
In the future, KNX lines may contain multiple segments of different types (e. g. RF, TP) keeping the addressing scheme.

supports fast configuration processes and improves project management. It is also important that ETS6 Professional will be updated regularly. To that end, its download management has been simplified. This function indicates the current version, describes any new features and prompts the user to update. This optimisation solves recurring problems found in older versions of ETS.

KNX RF Multi
ETS6 Professional has been expanded to include new KNX functions. In the future it will also support KNX RF Multi for even more reliable use of RF media. In the KNX RF Multi system, the corresponding telegram traffic changes frequency depending on the quality or interference resistance. This prevents potential frequency interference in a frequency band / channel. Several RF bands are available for so-called "frequency hopping".

KNX Segment Coupler
In the past it was only possible to expand a single KNX TP line with RF functions via a separate TP main line and RF (sub-)line. For existing TP (sub-)line installations this meant a topology reorganisation, with all TP devices being placed in the new TP main line and RF devices in the RF (sub-)line. But in future, the ETS will allow segment coupling in any KNX TP line.

KNX Secure Proxy
This new procedure will make it possible to mix secure and plain KNX applications on any line in the future. A KNX Secure Proxy will separate individual areas into a plain area (domain) and a secure area (domain). The Secure Proxy will then convert the telegrams for plain and secure communication in both directions. This practice spares the need to replace all KNX devices if only one specific area (domain) needs to be secure. A practical example would be a retrofitted KNX RF application secured using KNX Secure - for example an outdoor RF weather station. This could be connected to KNX devices that do not have KNX Secure via the KNX Secure Proxy on an existing KNX TP line indoors.

Cloud Licensing
When hopping between laptops, ETS5 provides dongle licensing for added flexibility. Now ETS6 Professional has another alternative requiring no additional hardware: cloud licensing. All you need is an internet connection. Moreover, the entire licensing process has been simplified thanks to the optimised licensing workflow.

Following the presentation of ETS6 Professional at Light + Building in March 2020, the BETA version will be tested in workshops over the course of the year ready for market launch in October 2020.

IT environment
With ever-changing IT environments, the goal is for ETS6 Professional to be supported on existing as well as upcoming operating systems in the Windows environment. ETS compatibility with those ensures smooth interaction during installation, updates and communication.

ETS6 Professional ensures that only secure operating and maintained operating systems such as Windows 10 are supported. The online help will be also integrated into ETS6 Professional.

ETS optimises performance and memory usage. This gives system integrators even more control over their major projects. Large KNX projects can be commissioned even faster. Project storage is integrated into the Windows account, which means easier project password management and enhanced project protection.

What are ETS6 Professional new features?

New functionalities for KNX and KNX IoT
- **KNX IoT:**
  Projects are enriched with additional descriptions (tags)
- **KNX system:**
  Support of KNX Segment Coupler, KNX Secure Proxy, and KNX RF Multi devices
- **UI & UX:**
  Flexible window and panel handling, improved project management
- **IT environment:**
  Supports current operating systems, enhanced update notifications
- **Licensing:**
  Simplified licensing workflow, cloud licensing

Added value from KNX IoT

KNX remains an interoperable world in its own right, but now it can interact with other worlds too

KNX IoT is the company's response to the growing challenge of (more) easily integrating external services and applications from the Internet of Things into KNX projects. Standardised KNX IoT web services are an important step towards more interoperability between KNX and widely used IT systems. With KNX IoT, KNX is tackling the new challenges of better integrating with the world of IT systems and the Internet of Things.

KNX projects are of great importance to creators and operators. The current smart home and smart building developments carry both added value, but also risks. With the application and manufacturer-independent tool ETS, installers and system integrators have created a perfectly interoperable system. Their know-how is their added value. With its data, the ETS project provides standardised documentation of all the connections between the different functions of existing devices, assigns names, numbers, purposes and locations, and can be seen as a rich data cosmos. The ETS data model is currently based on XSD (XML Schema Definition) and includes:

- Installation data generated by the system integrator, such as topology, building structure, Group Addresses, etc.
- Manufacturer data provided by the KNX manufacturer in the form of ETS product data.
- KNX "master data", which are available online, installed by ETS and updated frequently with each KNX innovation.

Investment in the future

The KNX system thus ensures that different applications using products from different manufacturers work together seamlessly. In short, installers haven't only created a perfect project, but they also have a guarantee! Nonetheless, you should reassure your customers that KNX is not a closed system. Extensions can be integrated with ease, even if they are not KNX compatible.

Smart Home residents, for example, often want to integrate smart consumer electronics and connect to external services. While functional building operators want to use facility management systems, media technology, access controls, alarm systems and internet services in conjunction with their KNX system. Although usually not directly compatible, installers want to be able to connect them to KNX.

KNX IoT

What installers and system integrators expect from KNX IoT is that once projects are handed over, their customers can use things from the internet without negatively impacting their KNX projects. However, their service also includes providing their customers with controlled access to certain data in KNX and granting them the necessary authorisations.

In the past, interfaces were used when KNX data had to be accessed from outside. For example, visualisation on a PC with USB. KNXnet/IP interfaces enable a secure connection with smartphones and tablets via VPN.

Increasing requirements

However, given that the data is only offered in "KNX style", the ETS information has to be re-entered into the external device. Or the device has to be able to read exported ETS data and convert it to its own language. Furthermore, this sort of access provides access to the entire installation data (unless KNX IP Secure is used).

In individual cases, it can also be uneconomical to equip a device or system to communicate with KNX: One cannot expect all devices to become KNX compatible one day.

The world of Internet of Things needs data in a universally understandable, machine-readable format. A REST API interface (Representational State Transfer, Application Programming Interface) can accommodate this. It enables data stored in a KNX IoT interface to be securely retrieved via https or web socket and the status of functions in KNX installations to be read or manipulated. External devices and systems can communicate with a KNX installation easily, not in a private KNX format but instead in a format that is clear and understandable across the IT industry. It's an ideal solution: KNX remains an interoperable world in its own right but can also interact with other worlds, too.
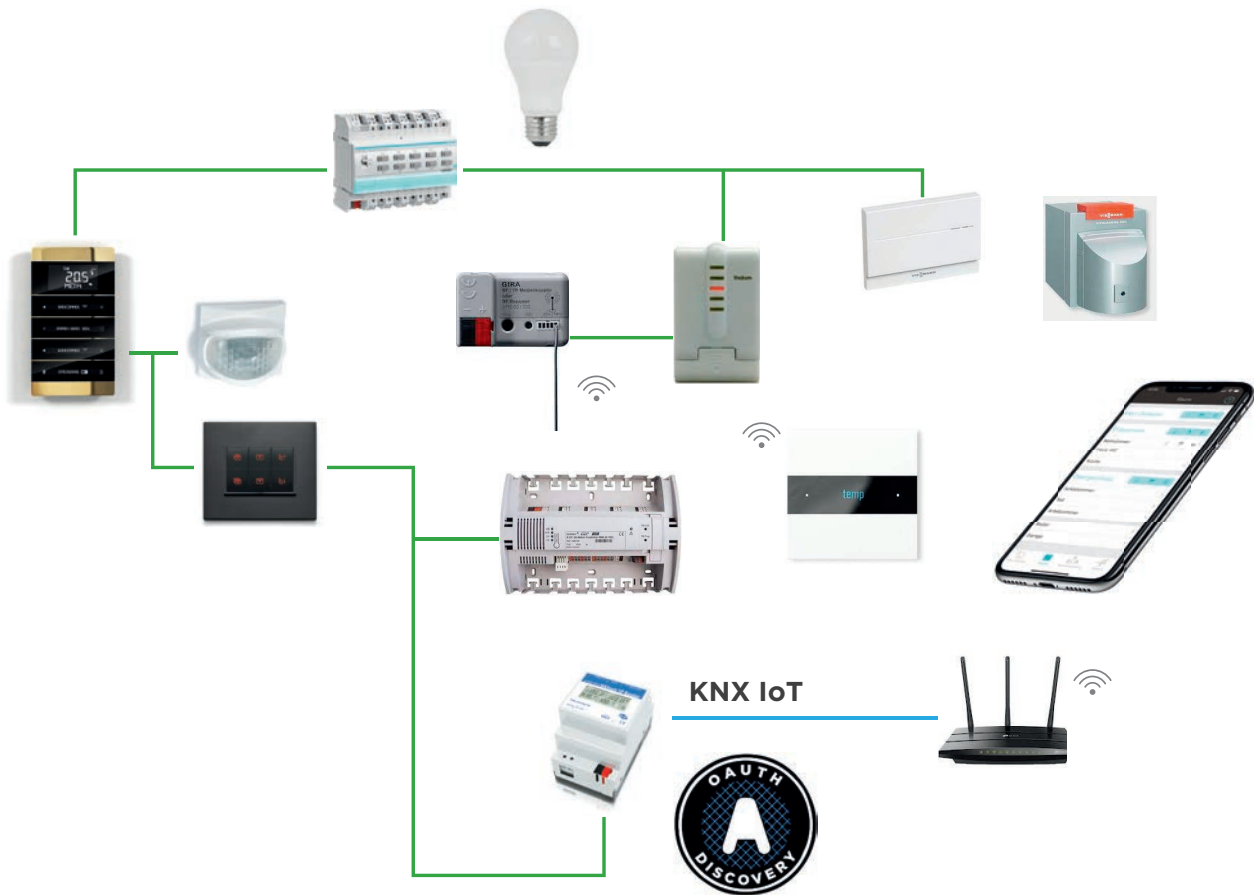
With KNX IoT, the world of IT and Internet of Things can read and manipulate the functions implemented in a KNX installation using standardised semantics, regardless of the manufacturer.

Semantic data

As a first step, KNX is developing KNX IoT based on Open API, a standardised solution applicable to all KNX manufacturers. With "RESTful Web Services", ETS data can be retrieved or accessed via topology and implemented functionality in standardised semantics. Installers and system integrators can thus make ETS data available to third parties in a targeted manner. To make this possible, when programming a new project, ETS adds the semantic information to the background of the Group Objects, channels and function points. Then, if an export is made for the KNX IoT interface, it contains all the semantic data. This creates the IoT endpoints that can be addressed by third parties. The plan is for this semantic information to be contained in new versions of the product data. For existing projects, manufacturers can add the semantics to their existing product data online using ETS.

The new ETS6 Professional provides an export file with the information required to transfer to the new KNX IoT interfaces.

KNX IoT provides added value for KNX projects

· KNX continues to provide a solid database and enables all forms of integration.
· Third parties can focus on a single KNX IoT interface
· Installers and system integrators can concentrate on their ETS projects for perfect KNX installations.
· They can offer guarantees without fear of problems caused by third-party interference.
· They can provide limited access to the KNX project data.
· The KNX IoT interface causes no additional work if KNX projects are documented properly.
· Having semantic data as part of the KNX product data makes planning and design more transparent, which benefits collaboration between planning offices and installers.

Smart Home Energy Management with KNX

Smart sector coupling with KNX – electricity + heating + transport

Energy transition, climate protection, sector coupling – these keywords point to a turning point in the energy industry. Buildings will also be affected by the transition from fossil fuels to green energy. Energy consumption must be coordinated, managed and controlled. This applies in particular to electric mobility and other large consumers. The KNX Smart Home offers specific solutions for this, including for e-car home charging stations.

E-charging stations in residential buildings are growing in prominence. This raises questions like: How much energy will they need? Can one charge one's vehicle whenever one wants? How much energy is available? Can low prices at certain times of day be used for low-cost charging?

Network-related issues

Domestic electricity connections, usually with a voltage of 3x230 volts and 63 ampere fuse, are already confronted with high battery capacities of up to 100 kWh. Commercially available charging stations offer connection capacities of between 3.6 kW (1x230 V, 16 A) and 22 kW (3x230 V, 32 A). Depending on battery capacity, charging time and number of e-cars, domestic electricity connections will be exposed to high loads. The energy required for e-vehicles can cause total household electricity consumption to more than double. External grids and the energy supply also need to be able to cope with this increased consumption. As electricity increasingly comes from wind and solar generation, fluctu-

ations in the energy supply are to be expected. Against this backdrop, e-mobility has the advantage that it can act to balance the electricity grid thanks to flexible charging times and, in future, feed-in where necessary.

Energy management with KNX IoT

To ensure grid stability in the future, energy consumers and producers must be managed across all grid levels with regard to load and time. KNX IoT services enable the integration of energy participants, such as intelligent charging stations, into the KNX Smart Home. The key to energy management is a so-called CEM (Customer Energy Manager), an interface between the intelligent power grid (S1) and the KNX Smart Home (S2). The CEM coordinates the interaction between external energy consumption specifications and its internal optimisation. Communication is based on the "Smart Grid/Smart Home architecture" standard. To ensure interoperability, international working groups at the standardisation bodies CEN / CENELEC TC 205 / WG 18, in which KNX participates, are developing appropriate data models and optimisation strategies.

Optimisation principle

The optimisation process follows a relatively simple principle. The CEM consults the energy participants on their energy needs in a given period of time. Participants include consumers such as household appliances, heat pumps and water heaters, as well as energy producers such as photo-
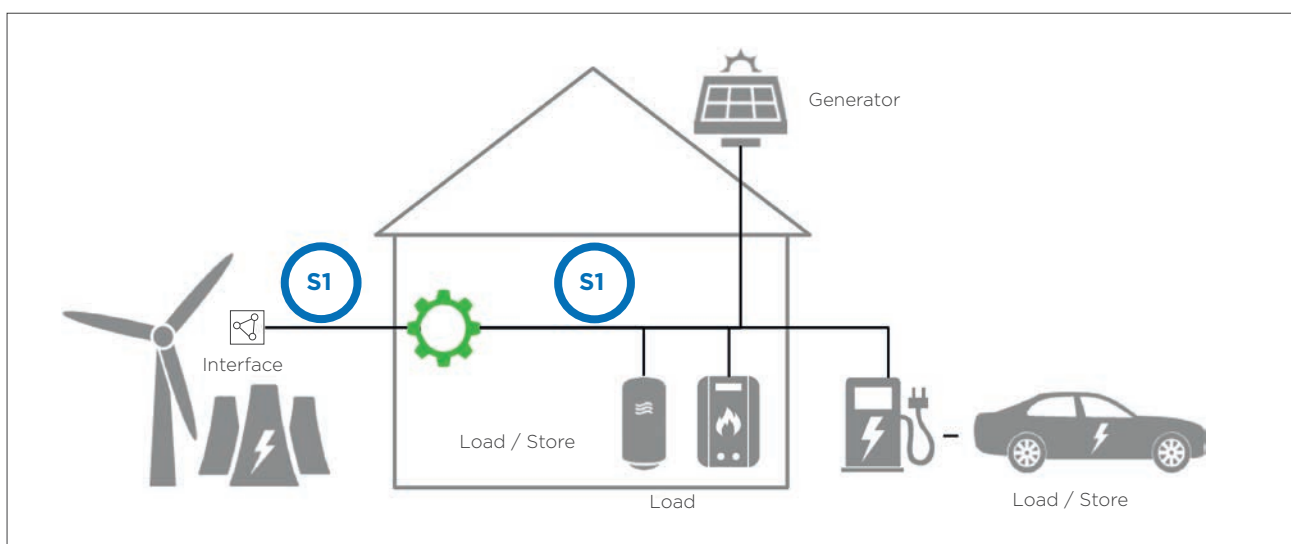

Figure 1. Energy management with internal optimisation (S2) and external specification (S1)
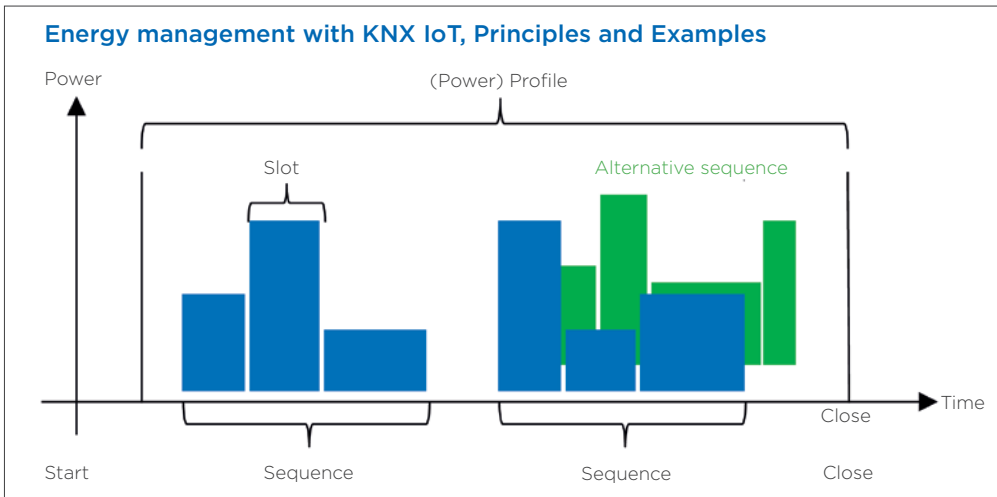
Figure 2. *Presentation of an energy profile with alternative optimisation strategies*

voltaic systems, energy storage systems or e-car charging stations. These contrasting consumption/generation energy profiles can then be optimised using the information on expected available energy and price offers. This is done by creating energy/time profiles which consist of slots lined up next to each other. Each slot defines the amount of energy required during the period.

Charging sequences

With its flexible charging possibilities, e-mobility is a clear example of the profiles process (see Fig. 3). Ideally, smart charging stations with KNX IoT services would be integrated into the smart home. The CEM has access to energy offers including their costs and times. These are HT, NT and, in future, special e-vehicle charging rates. If all vehicles attempted a full charge at NT, the network would be overloaded. Therefore vehicle 1 (green), which must be charged for a short time, begins charging in the NT but has to finish charging in the HT. Vehicle 2 (blue), whose charging process takes longer, uses an alternative charging sequence. It also partially charges in the NT but then skips the HT and completes charging in the next NT. This procedure is not only good for vehicle owners' wallets, it also compensates for over- and under-supply of electricity and thus contributes to grid stability.

Summary

Automatic energy consumption management is necessary to avoid exceeding peak loads while also using energy economically. KNX building automation forms the basis for active and complex energy management. KNX IoT services will continue to ensure the integration of as many energy participants as possible.

Intelligent charging of electric cars

Important protocols are available with smart charging stations and charging columns. This can be used, for example, to check usage authorisation, control charging processes and even to regulate the energy supply. KNX with KNX IoT services can provide the evaluation units required for this purpose. In this way, charging columns can be controlled based on individual user behaviour. A visualisation with diagrams and graphics provides an overview of chargeable energy quantities, percentage charge status and personal use. Available energy, for example from a photovoltaic system, can also be displayed.
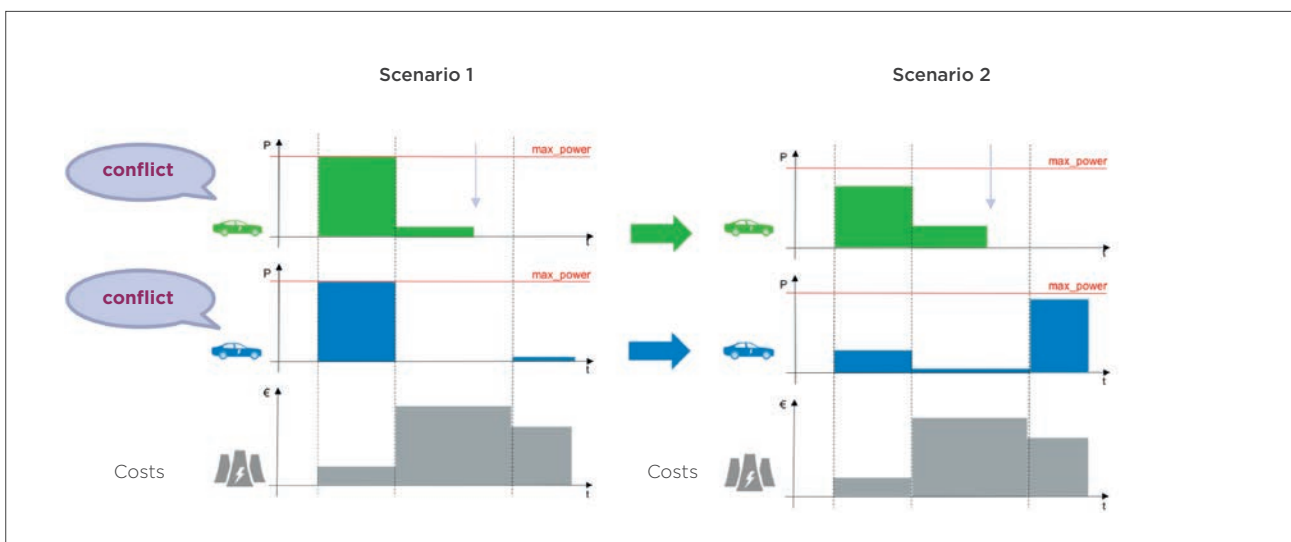

Figure 3. *Practical example of load shifting*

KNX Secure with IoT Services

for secure remote data transfer and operation

Control and monitoring of the property through external IoT service providers

Task

In functional buildings, the KNX building automation carries out a wide variety of tasks for building use, commercial processes, convenience, safety and efficient energy application. Sensors convey important parameters for automation with their physical variables. They also indicate whether technical installations are working properly or whether there are faults or even alarms. GePro Gesellschaft für Prozesstechnik mbH is tasked with securely monitoring the physical variables of properties from a central location.

Solution

In addition to system components, actuators etc., numerous KNX sensors are also installed. Measured values can be sent via intranet or internet to an external IoT service provider which itself does not have a KNX installation. This external company reacts according to defined values, sends alarms and/or carries out switching operations. KNX IP Secure ensures the secure encryption of telegrams and data.

Implementation

GePro displays the recording of physical values such as temperature (°C), air quality (VOC), carbon dioxide (CO_2) and humidity as well as the monitoring of the security technology such as smoke detectors, leakage and glass breakage sensors, earth leakage circuit-breakers and motion detectors. If critical states are achieved or alarms are triggered, they are routed to a service provider. The network is in the public domain and exposed to tampering. The connection between the properties and the service provider is therefore protected via a KNX IP Secure router.

Manufacturers and components

ABB	Analogue input, glass breakage sensor, roll gate contact
Elsner	Leakage Sensor Leak KNX
GePro	Control and alarm panel KNX4, KNX panel 16
Gira	Smoke detector Dual Q with KNX module
Jung	KNX IP Secure Router, power supply
MEAN WELL	Power supply
Steinel	True Presence Multi Sensor KNX
Theben	Room Air Sensor Amun 716 SKNX
Weinzierl	KNX IP Secure router

Functions

A KNX control and alarm panel on site indicates critical variables both optically as well as acoustically and switching operations can be carried out directly in the installation via a KNX control panel.

The service provider, which does not have its own KNX installation can exchange data securely, via the IoT services. This occurs for example using a PC and visualisation, with tablets and smartphones. It is possible to not only monitor and process physical variables as well as convert critical values into fault signals, but central functions for lighting, roller blinds, ventilation etc. can also be triggered.

Benefits

- Monitoring of properties situated in different locations by only one central service provider
- Secure data transfer with KNX IP Secure
- Quick reaction to technical errors, faults and alarms
- Remote operation of selected central functions

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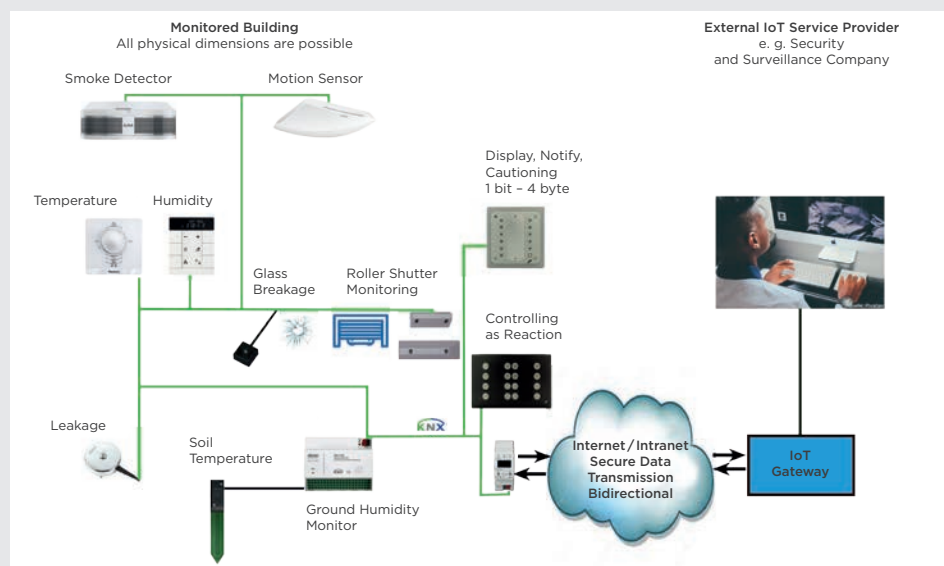
KNX Secure

with IoT Security Services

Secure connection to external security services to protect the KNX property

Task

KNX controls all the loads in the smart home. The integration of external safety applications is therefore available throughout the system. Notifications, faults or alarms can thus be routed with KNX and IoT Security Services to any manned stations and switching operations can be activated. Security breaches are however not permitted to develop. The solution shows the panel setup of HSEG (Ingenieurbüro für Elektroplanung und Gebäudesystemtechnik, Dipl.-Ing. Holger Schult) in Glienicke.

Solution

KNX Secure protects the communication between KNX and the classic intruder alarm control panel against tampering which is required for all security systems. The prerequisite for KNX applications in the security sector until now is that insurance companies do not specifically demand VDS-approved solutions. KNX Secure applications are therefore tangible arguments for the increased acceptance of KNX in this field.

Implementation

The intruder alarm system of Telenot Elektronik communicates with the KNX system via a KNX gateway. KNX Secure thus offers double the protection: KNX IP Secure with its extended IP protocol ensures the full encryption of all telegrams and data. A KNX Data Secure application is also introduced, which protects user data from manipulation through the use of encryption and authentication. The installation is implemented with KNX Secure components such as switch sensors, RF devices and actuators.

Manufacturers and components

Axis	Fixed dome camera M3026-VE with day/night function
Enertex	Line coupler Secure
ise	ACAP software ise smart app KNX Axis
Lingg & Janke	Push-button Secure 9-fold, switch actuator REG Secure and eHZ Secure
MDT	Glass push-button II Smart
PEAKnx	Touch panel Controlmini, PEAKnx with software, YOUVI Camera, YOUVI Connect
Securiton	ACAP Software IPS
Tapko	IP Secure Router, switch/push-button interface Secure
Telenot	Intruder alarm control panel with KNX module
Weinzierl	IP Secure Router, RF media coupler Secure, RF push-button Secure, TP push-button Secure

Functions

KNX receives status signals from the intruder alarm control panel and the surveillance camera. The KNX system evaluates them and sends corresponding alarms via KNX, triggers switching operations or controls the intruder alarm system. The Axis camera thus not only activates recordings but also the lighting or other loads via KNX. The sensors of the intruder alarm control system not only trigger alarms but also activate the panel of the smart home control system.

Benefits

- Integration of security technology in the KNX smart home
- Tamper protection through KNX IP Secure or KNX Data Secure applications
- Increased flexibility, increased security
- Possibility of information exchange with IoT Secure Services
- Retrofitting of existing KNX systems to a secure level with manageable effort
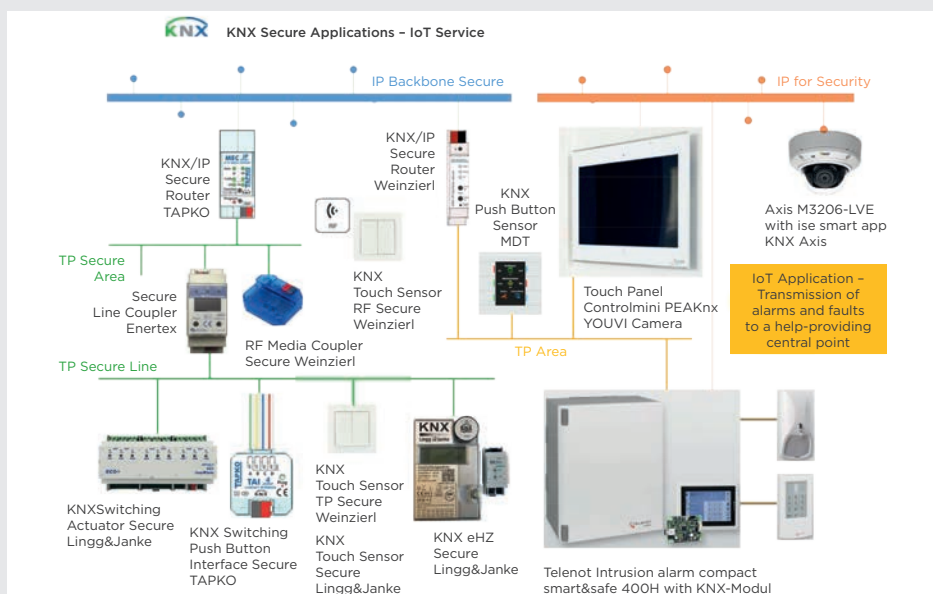
KNX Secure Applications – IoT Service

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KNX Secure with IoT Services

for IFTTT, multimedia and remote maintenance

*Perfect connectivity to different IT services
for the home*

Task

The networking and integration of a wide variety of IoT services in the KNX world is the theme of the solution offered by Elektronik Innovativ, M. Eudenbach, in Unna. This is how the KNX integration or the data exchange with different IoT hardware products from Sonos, Phillips Hue, Tado, IKEA Shortcut Button and MQTT-capable switch actuators should be established. Data points from the different technologies should be collected centrally, recorded and displayed graphically.

Solution

This task is resolved with the universal IoT gateway nomos. hub from the Swiss company nomos System AG. It is designed to link a wide variety of technologies and protocols with the KNX system. It also offers various service interfaces which enable professional remote maintenance and programming. Functions such as tracking a mobile phone, starting a robot vacuum cleaner or calling a taxi can be integrated via IoT services such as IFTTT and triggered via KNX. A local Node-RED instance moreover enables the processing and display of the relevant data of all integrated systems.

Implementation

A KNX sensor directly controls a Sonos sound system. A Tado room temperature controller can be operated via a KNX touch panel and its status values displayed. An IFTTT service tracks the position of the mobile phone and triggers a scene which affects both KNX devices and IoT devices and is displayed via IKEA Shortcut Buttons. The front door of a fictitious holiday home is opened with an eKey finger-

print via MQTT. KNX remote programming is also possible with ETS. Different possibilities (Homekit, nomos Dashboard, Node-RED Dashboard, Commandfusion) can also be used to control and display the data on an iPad.

Manufacturers and components

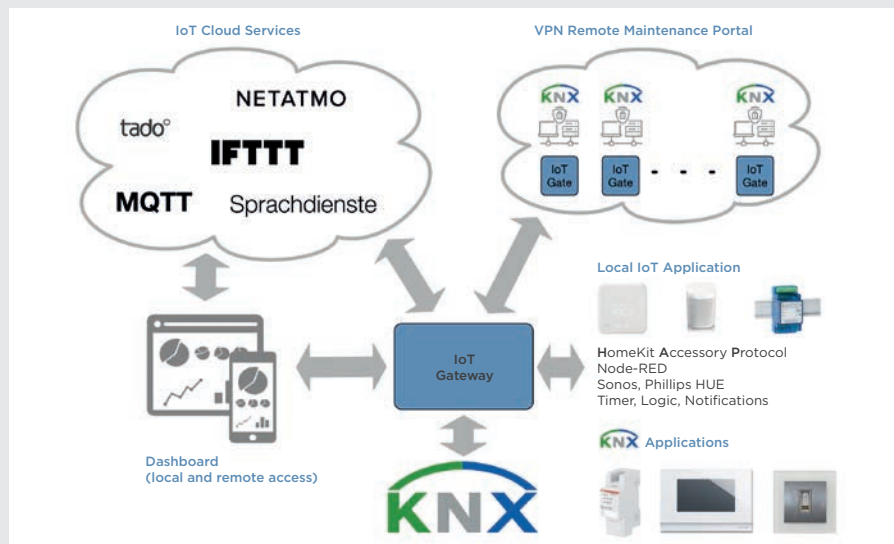|	
ABB	KNX IP Secure Router
Apple	iPad Pro
Busch-Jaeger	SmartTouch 7″, LED dimmer, roller blind actuator
eKey	KNX gateway, ekey home, Fingerprint Home
Enertex	KNX power supply
Jung	KNX compact room controller F50
IKEA	Shortcut Button
Nomos System AG	nomos.hub – IoT gateway
Phillips	Phillips Hue Stripe
Sonos	Sonos one
Tado	Smart thermostat
Wiesemann and Theis	Web-IO 4.0 Digital, 12xIn, 6xRelais Out (MQTT)

Functions

Switching and display of IoT devices via a KNX touch panel and further KNX sensors. KNX integration in Node-RED for data recording and analysis. Remote programming of KNX and remote maintenance of system-relevant devices. Different options for visualisation.

Benefits

- Use of extended IoT services and devices for the KNX installation
- Global networkability
- Maintenance and service portal for system integrators
- All-in-one solution

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IoT Cloud Services — VPN Remote Maintenance Portal — NETATMO — tado° — IFTTT — MQTT — Sprachdienste — Local IoT Application — IoT Gateway — HomeKit Accessory Protocol, Node-RED, Sonos, Phillips HUE, Timer, Logic, Notifications — Dashboard (local and remote access) — KNX Applications

KNX Secure with IoT Services

for energy and charging management

Seamless integration of external management service providers for energy and mobility

Task

Mobile charging stations in the home are large consumers and demand an intelligent management of the charging currents. The Smart Building Design GmbH in Rickenbach, Switzerland, solved this task. The KNX installation implements flexible energy and charging management. KNX also integrates third-party systems and devices using KNX gateways as well as visualisation with external IoT services. External access is secured via VPN hardware with KNX capability. This includes the task of visualising the electrical consumption, the generated energy, the capacity of the battery station, the charging state, the range of the electric vehicle and corresponding statistics.

Solution

The current generation of the energy self-sufficient home is carried via photovoltaics and wind energy. The energy is also stored. The current power consumption in the house is dynamically adapted to the charging state of the energy store and the solar radiation. The data transfer between the individual decentralised systems is carried out with KNX TP and IP. The visualisation shows the current data of the decentralised KNX devices as well as the external systems. Depending on whether there is sufficient energy available in the battery, it is charged if required or individual systems are switched in order of priority.

Implementation

A KNX electricity meter (Lingg & Janke) records the current total consumption. The use of Apricum MECip Secure guarantees the securely encrypted data communication on the IP network between KNX TP and the Eisbaer visualisation. The energy store is linked to KNX via a gateway (ise) and transmits the current charging state and further values. The remote access module (Hooc) enables secure VPN access. A further gateway (ise) secures the data exchange with the charging pole (Stöhr). The energy and charging management is undertaken by the Eisbaer software (Alexander Maier). Using adaptive calculation, it is possible to optimise the use of the electrical energy and the charging response of the energy store dependent on the weather forecast of the next 3 – 5 days.
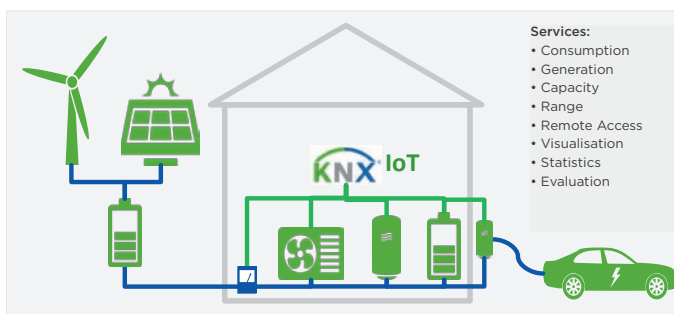
Manufacturers and components

Apricum d.o.o	MECip Secure KNX IP Secure Router
Alexander Maier	Eisbaer Visualisation Server
Elsner Elektronik	KNX pyranometer
Hooc AG	VPN Module Connect H LT M
ise	Connect module for E3DC energy store as well as e-charge module for charging pole
Lingg & Janke	REG electricity meter EMU
MDT	Glass push-button II Smart

Functions

A charging pole signals with red or green light "charged" or "not charged". This demonstrates the functionality of the complete system. It can be shown using an iPad or iPhone and influenced at the touch of a button.

Benefits

- Display of the consumption data shows users what they can save in electrical energy and where they can be cost-effective.
- Display of the data of the energy store indicates the current charging states and users can make appropriate decisions.
- Integration of external IoT services can easily be implemented using IP interfaces.

Services:
- Consumption
- Generation
- Capacity
- Range
- Remote Access
- Visualisation
- Statistics
- Evaluation

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CHRISTCHURCH
TOWN HALL

KNX used in restoration of top concert hall, bringing world-class control to last well into the future

The Christchurch Town Hall heritage building, which originally opened in 1972, is an integral part of Christchurch's identity and represents a unique piece of architecture positioned in an idyllic setting by the Avon river. It represents one of New Zealand's premiere performance venues.

The building was seriously damaged in the 2011 magnitude 6.3 earthquake – a force of nature that resulted in wide-spread damage across the city. The Town Hall required major repairs to the foundations as a result, due to liquefaction and lateral spreading of the land beneath.

After many years of debate of whether to refurbish or re-build, in 2015 the city decided on a three-and-a-half-year restoration project with a budget of 167 million NZD. The project included seismic strengthening to 100 per cent of the new building standard, new dedicated facilities for the Christchurch Symphony Orchestra and upgrades that en-sured the building transitioned into a modern, world-class facility to be enjoyed for many years to come. Christchurch Town Hall reopened to the public for the first time in eight years in February 2019.

During the refurbishment, Aotea Electrical was integral in designing a modern building control system for the Town Hall that would stand the test of time, conform to both Australian and New Zealand standards and modernise the buildings' services. This included controlling all of the light-ing and blinds and integrating with A/V equipment and the building management system.

The solution

KNX technology was chosen for its versatility, its ability to adapt to the future, and its ubiquitous integration. The final KNX solution controls all of the lighting, along with the building management system. This fully-integrated and modernised technology enhances each space further to include automated blinds and integration to projectors, screens and the sound systems.

Products and technologies used

The KNX system controls or interfaces with:
- Communication for the main lighting mixing desks.
- DALI lighting so that there is minimal 'snap off' for the performance areas.
- Wireless motor-controlled blinds provided.
- DMX lighting for the water fountain.
- Security and fire alarms.

Approximately 300 KNX devices, from a variety of man-ufacturers, also control over 2,000 heritage light fittings.

Installation

The retrofit was certainly difficult and time-consuming, as there were a lot of circuits that had to be correct and con-trollable. However, the hard work paid off. Aotea Electrical was delighted to be presented with a National Award at the 2019 KNX NZ Conference as the winner of the Commercial category.

The benefits of using KNX

Thanks to the vast amount of manufacturers supporting the KNX standard, they were able to choose the best de-vices for each particular job, which ensured that the client received the best result from a fully-capable system that will last for many decades to come.

In addition, being able to run thousands of meters of con-trol cable alongside power cable, gave KNX a huge advan-tage and made the rewire job a lot simpler than it would otherwise have been. This resulted in savings on both cable management and the penetrations required.

A project by: Aotea Electric | www.aoteaelectric.co.nz

POLICE STATION
PROJECT MAKES FULL USE OF KNX CAPABILITIES

VLAS police station project in Kortrijk, Belgium –
Winner of the KNX Innovation Award 2019

The new police station is based in Kortrijk, Belgium, and has been the home base of the VLAS police zone since last year. It houses all operational services of this police zone and includes office space, interrogation rooms, a detention centre, premises for monitoring the camera network and other facilities. The electrical engineering study was carried out by Ingenieursbureau ISTEMA, and the installation was done by the EEG Groep, with integration of the JUNG KNX system being done by Sumi Smart.

The brief was to provide the new police station with smart controls for lighting, climate, energy monitoring, visualisation and specific functions such as anti-aggression push buttons over an area of 10,000 m², spread over three floors. Special consideration was also to be given to the effects of sunlight and outdoor lighting during the night.

The solution
For the lighting, Sumi smart took into account the specific needs and flexibility requirements of the police services, such as permanent occupancy of the building, and the number of people present depending on external circumstances. Sumi also applied daylight control to LED lighting

at the height of the windows, whilst the other LED lighting automatically switches on and off over a daylight threshold. To limit nuisance caused by the sun in certain rooms, Sumi installed a motorised awning which is automatically controlled via a KNX weather station based on the solar radiation and wind speed. Together with a clock, the weather station also controls the outdoor lighting, and to limit the light pollution for the environment, the outside lighting is dimmed during the night.
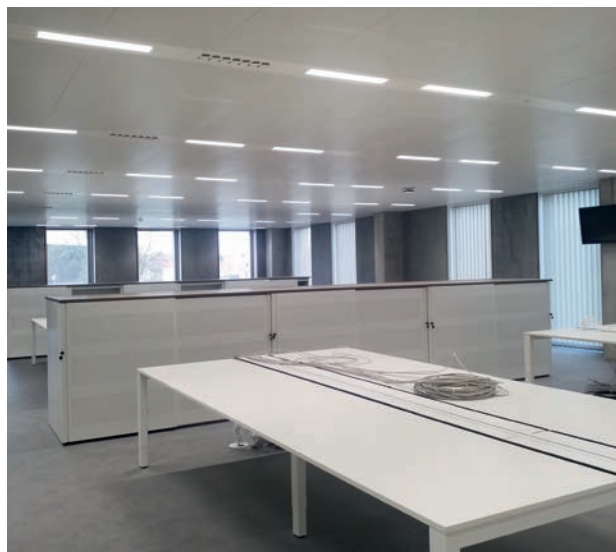
There are 373 presence detectors within the building that control various functions. In the common areas, the presence detector controls the light on and off, whilst in the individual offices, the detectors only switch off the lighting automatically in the event of a longer absence.

Presence detectors have also been placed in the interrogation rooms and cell complexes to indicate the occupancy of the rooms. Anti-aggression push buttons in these rooms are connected to KNX and indicate with acoustic and visual warnings in which interrogation room assistance is needed. For climate control, integrated thermostats in the KNX push buttons transmit the room temperature to the building management system. The CO_2 level in the room, the relative humidity and the presence of people are passed on to the building management system in a similar way, which controls the room temperature on the basis of this data.

Products and technologies

Products and technologies used KNX installation functions as the backbone of the building, and is responsible for, among other things, controlling the lighting via switching actuators and DALI gateways. This is done with the help of 373 presence detectors in function of a rational use of energy and optimum comfort through the use of daylight control. The outdoor lighting is controlled via a clock and the JUNG KNX weather station. The building is also equipped with 120 CO_2 detectors that ensure an optimal indoor climate in which the heating, cooling and ventilation are controlled automatically.

Visualisation software allows building users to view the status of the various KNX functions, alarms are centralised and operating hours such as time clocks for outdoor lighting, can be adjusted. The architects on the project, Goedefroo + Goedefroo Architectenbureau opted for the JUNG LS 990 switches in alpine white with accents in Les Couleurs Le Corbusier.

The benefits of using KNX

Thanks to KNX, VLAS police station has been transformed into a smart building on both an energy and functional level. The energy consumption and comfort of the building is continuously monitored. All relevant KNX and building management system variables go to the cloud via the ByNubian data acquisition system, and analyses can be used to determine whether there is room for improvement in energy efficiency. The visualisation of this complete KNX installation provides a perfect overview of energy consumption and all relevant parameters, resulting in an ideal building management system.

A project by: Sumi Smart | www.sumismart.com
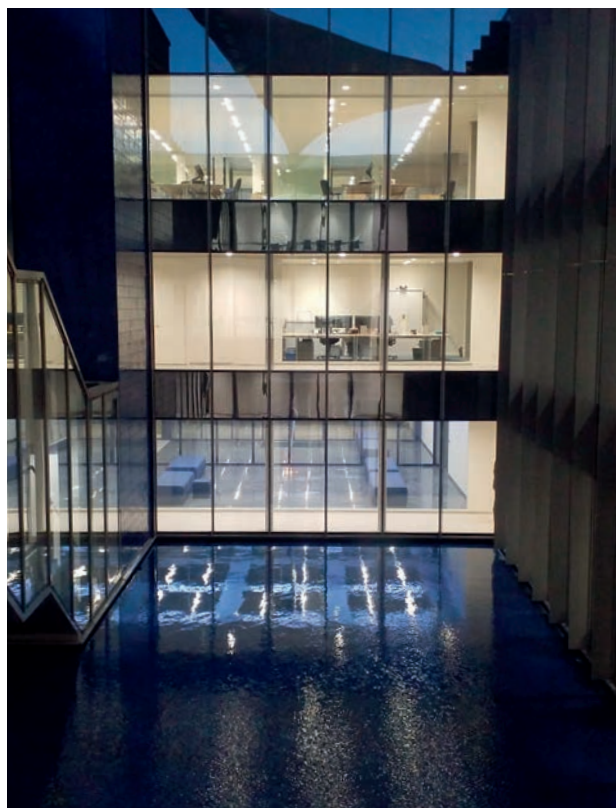
INTERNATIONAL
CONVENTION CENTRE SYDNEY

KNX provides over-arching control of world-class complex for complete reliability

The International Convention Centre Sydney (ICC Sydney) was an initiative by the NSW Government to update the precinct to deliver Australia's global city with world-class facilities. The 20-hectare precinct, AU$1.5 billion redevelopment provides for a diverse range of convention, exhibition and entertainment events via its three dedicated and purpose-built venues which all seamlessly link together via a common internal walkway. The project was completed at the end of 2016 and is located in the Sydney CBD (Central Business District).

The NSW (New South Wales) Government commissioned Lend Lease as the builder, and Ecoview as the electrical contractor. Ecoview is the integration arm of Stowe Australia, one of the largest privately-owned electrical contracting businesses in Australia. Boosting 100 years of continual service in September 2010, Stowe's annual revenues is over AU$500 million and employs over 1,500 people.

The brief was to create world-class facilities using the best technologies available. The complete precinct needed to be controlled as one facility. Having high-end meeting rooms demanded high-end connectivity. This meant full integration with the AV system for control not only of all aspects of the lighting but also the motorised blinds etc. The venue is truly a multipurpose facility, so reliability is paramount. Among its facilities are the 8,000-seat ICC Theatre that can be adapted to host pop and rock concerts, tennis matches and world renowned comedic performers, the 32,600 m² ICC Exhibition Centre, Australia's largest grand ballroom, an open air 5,000 m² event deck and 2,000 m² of dedicated meeting and hospitality rooms.

There are strict abatement clauses in place with this facility whereby if there were any significant system outages, massive fines are in place to recoup lost ticket sales etc. This meant that we needed to not only monitor the health of the system but also the luminaires as well.

The solution

It was apparent that KNX was our only option. The KNX system not only controls Front of House areas but also monitors individual spaces and luminaire run times. This covers the lamp and ballast failures of well over 10,000 individual luminaries for the reactive as well as predictive maintenance of the facility.

With 4,788 luminaries just in meeting rooms, theatre spaces and exhibition spaces, they decided to use DALI luminaires for their control and monitoring capabilities. This means that the overarching head-end KNX solution is constantly monitoring, and provides an alert if a single luminaire or field KNX device fails, as well as passing this information to the BMS via BACnet should there be an alarm.

Careful consideration was given to the design of the network topology because, being a public venue, we needed a solution that was flexible yet robust. We decided not to be completely reliant on the ICN (Information Centric Networking) infrastructure and adopted the silo effect. Each building was broken into quarters and each entry-level zone was supported via Ethernet. From there, a dedicated twisted-pair backbone was created for each vertical quarter, with Line Couplers used to provide independent level isolation. This was then supported by Logic Modules which were programmed to revert to a fall-back condition, depending upon what mode the building was in, should there be a circumstance that required it.

Products and technologies used

As this is an international facility, any user-initiated interaction with the system had to be linguistically neutral. Hence lighting control panels in user-occupied spaces had internationally recognised symbols and text explaining the functions for non-English speaking hirers.

Depending on the individual spatial requirements, either password-protected touchscreens, lighting control panels, PIR motion detectors, microwave motion detectors or a combination, have been employed to ensure the space meets the specified requirements.

The only tools we needed for planning and system design were ETS and standard design, CAD and BIM modelling procedures.
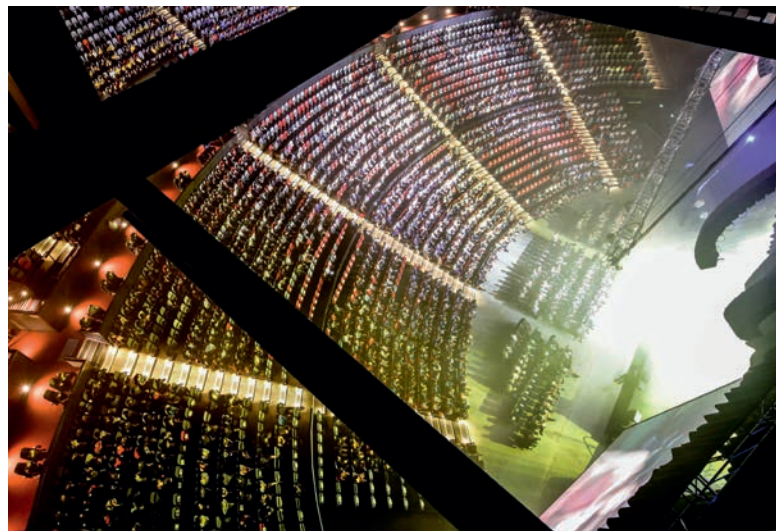
Installation

A team was located onsite for the duration of the project in order to handle all of the installation queries, numerous meetings and required commissioning tasks. They had dedicated DALI commissioning crews as well as KNX commissioners. The builder's programme was staggered so that services would move around the precinct.

Design started late 2013, construction started early 2014 and completion was in late 2016.

The benefits of using KNX

The fact that they could select the best technologies from multiple vendors and combine them seamlessly into one native system was seen by the business as the major benefit. Compared to other propriety systems, commissioning is simplified via ETS that is used for the whole KNX installation. *A project by: Ecoview | www.eco-view.com.au*

SAVING CARS
FROM WATER DAMAGE

SC-401 Square Corporate is located in Florianópolis in the South of Brazil. Conceived by CFL Constructions, it is a commercial complex with seven integrated towers holding 630 stores.

Integrating automation, security and access control under one BMS

It took from 2015 to 2017 for 14 year-old automation company, Smart Homes, to complete the project. Smart Homes specified and installed all of the systems involved. The greatest challenge in this project was to integrate the automation with security and access control in a single Building Management System (BMS). We chose the TYCO CCURE BMS integrated with TYCO CCURE 9000 platform.

Long cable lengths

The second challenge was the long connection distances involved, which necessitated the use fibre optic cable. We chose the Furukawa Laserway GPON (Gigabit Passive Optical Network) comprising 700 ONUs (Optical Network Units) on 40 km fibre optic cable.

Prepared for Mother Nature

This was a dream project that successfully automated a wide range of functions including water pumps, water levels, water consumption, sewage treatment, lighting control, electrical consumption, electric generator control, HVAC, access control, security, and fire prevention. We used 80 KNX devices from HDL, ABB, Siemens and Hager, as well as over 1,000 fire detection devices that were all networked and supervised. In addition, the installation included 192 Hikivision IP cameras, 3 Exacq Vision NVRs (Network Video Recorders), 60 RFID readers and 15 TYCO Software House iStar controllers.

Thanks to the agility and reliability of the technology used in this project, the speed at which the system is notified of an error in an electric pump, or an emergency protocol starts, is particularly impressive. For example: in this region of Brazil, there are periodic floods each year. The SC-401 Square Corporate building has an underground automated gate that sensed a high water level last winter and automatically closed, saving hundreds of cars from being water damaged.

Smart Homes is currently contracted to take care of preventative maintenance, and is able to observe everyday routines and how well systems cope with their particular responsibilities.

KNX makes huge savings

This kind of special solution by itself pays for the initial investment (CAPEX), on top of which are the savings on operating expenses (OPEX), including a reduction in the number of people required to walk around and check the security and automation status in a building of this size.

A project by: Smart Homes | www.smarthomes.com.br
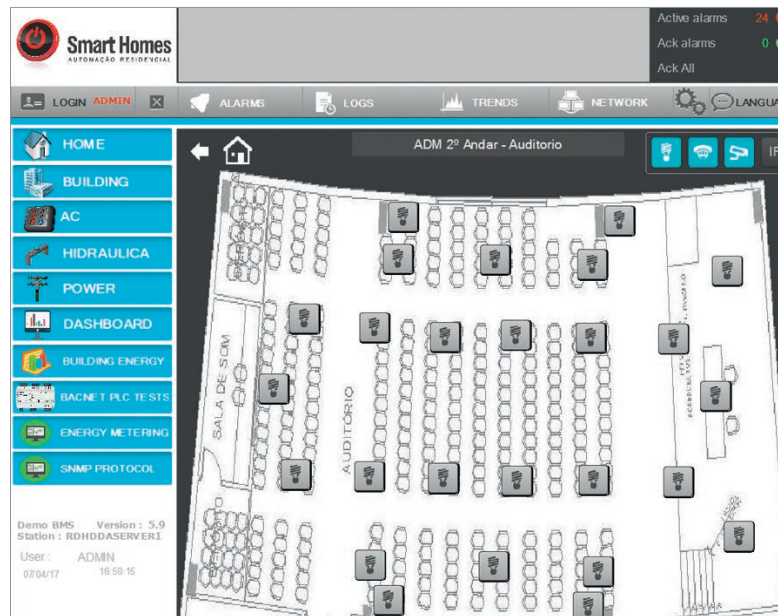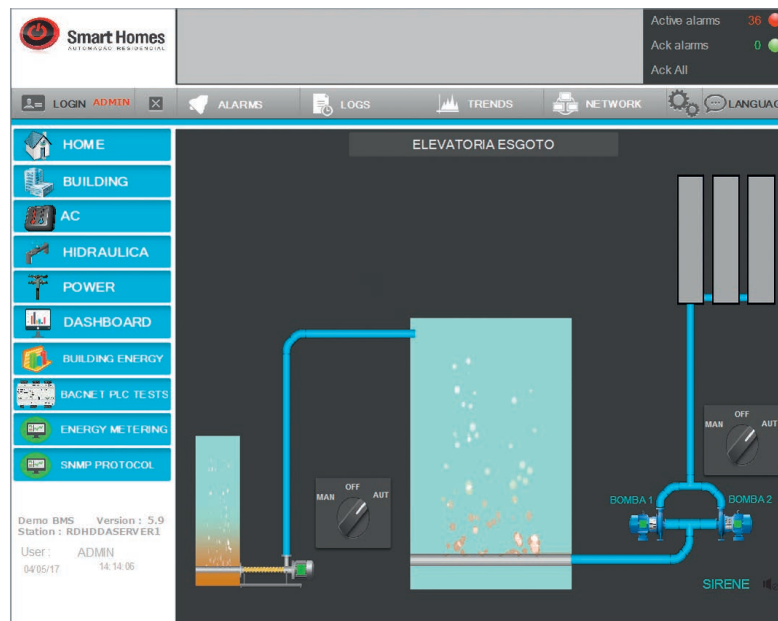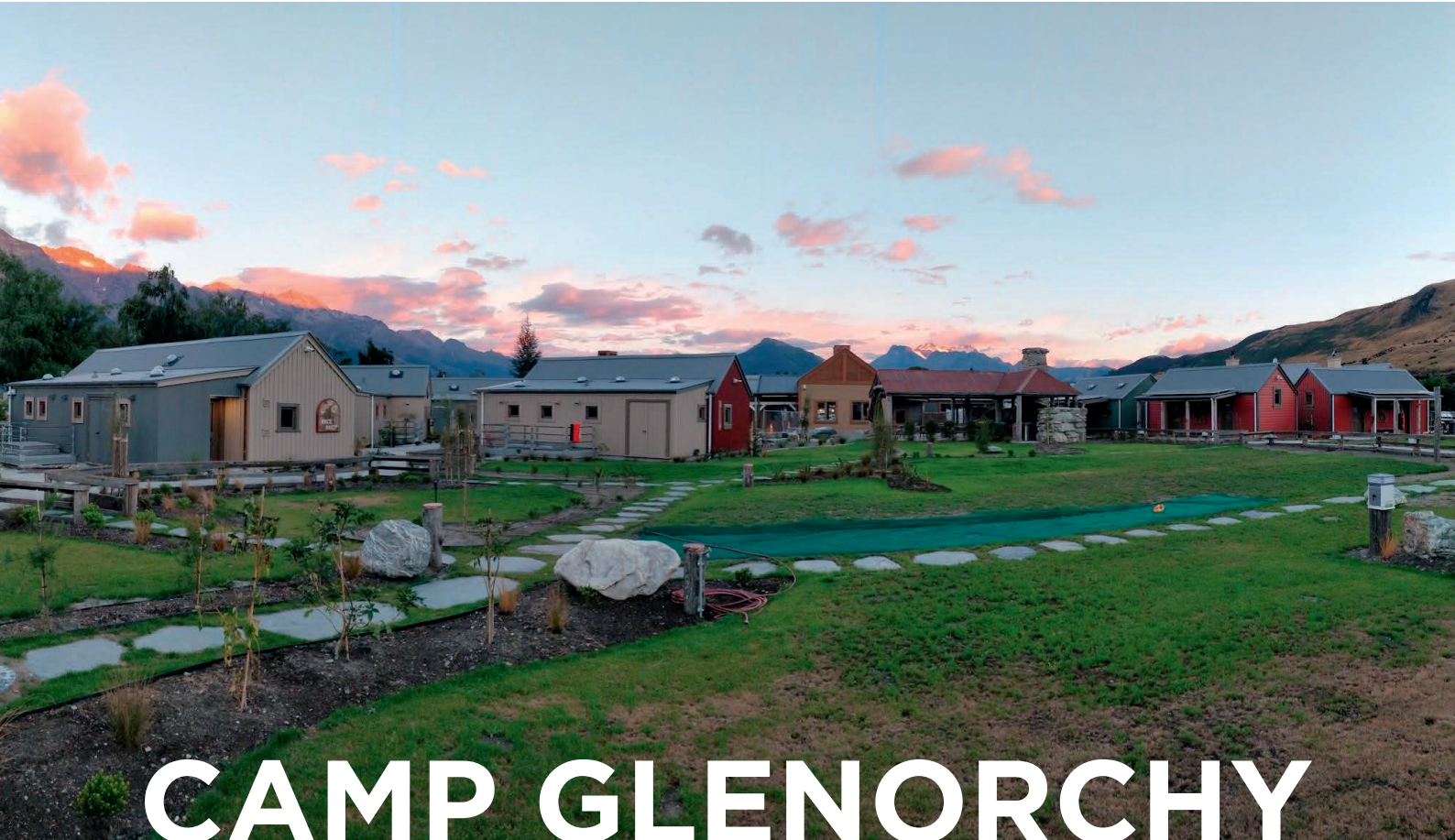
CAMP GLENORCHY
SAVES ENERGY

KNX provides inspirational guest experience and control of zero-carbon tourist accommodation in New Zealand

Camp Glenorchy Eco Retreat is an accommodation facility located at the head of Lake Wakatipu, New Zealand. Revolve Energy is a building automation integrator and renewable energy consultant focused on high-performance buildings in New Zealand. The clients had the target of building a zero-carbon tourist accommodation facility that used half of the energy and water of a similar facility, whilst inspiring and delighting its guests.

The system was to integrate various systems including lighting, heating including a stratified thermal store, heat pumps and solar water heating, ventilation, water management including potable and grey water, EV car charging, composting toilets and guest timed showers.

Involving guests in the drive to save energy

Revolve Energy provided an extensive solution to manage energy, water, and most importantly, guest comfort and experience. The system controls the heating/hot water plant, underfloor heating, lighting, shading, irrigation and waste water discharge. Furthermore, integrating the system with the guest booking system, ensures that energy is only used when required by heating the rooms and water, based on bookings.

The buildings also provide guests with displays in each room to help them learn about and control their own energy and water use during their stay, and to see how it compares with others on site, and with previous guests who have stayed in that room.

KNX products are extensively used throughout the building for switches, motion sensors and lighting control. KNX was chosen thanks to its functionality, ease of integration, wide range of products and ability to be serviced in the future.
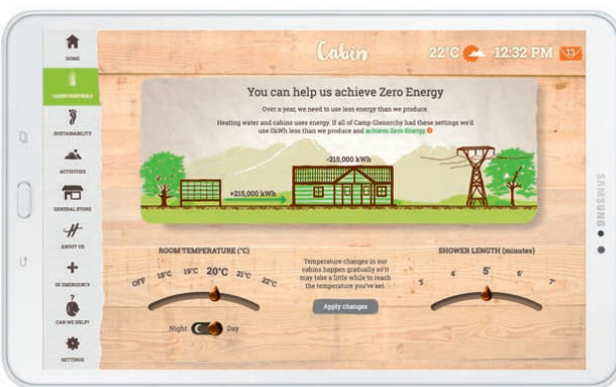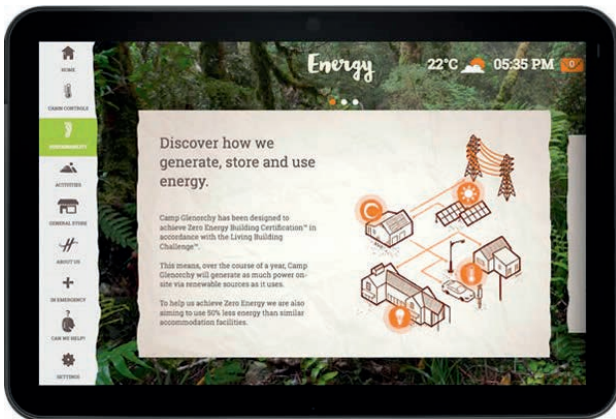
As the control system integrated with most of the key systems on site, extensive coordination with the design team, suppliers and contractors was required to ensure a successful outcome. In addition, a very systematic and structured approach was taken to the documentation of the system, its components and assembly.

Dealing with such a remote location

One of the key challenges was the remote location of the site. Camp Glenorchy is nestled in the mountains; a two-hour flight from Auckland and a further one-hour drive. Hardware was labelled and programmed offsite in order to increase the efficiency of the commissioning process. Revolve Energy operated a proactive program of fine-tuning for six months after opening in order to fix bugs and improve the operational efficiency of the system. Part of the solution included the implementation of an online data management platform for storing time series data for 1,600 unique data points in the cloud. This platform has been powerful in allowing ongoing analysis of the site's performance and system tuning.

KNX delivers a unique guest experience

KNX is instrumental in delivery the high levels of sustainability and a high quality unique guest experience. It demonstrates the flexibility, and power of a control solution based on an open protocol.

One of the key aims of the project is to educate people about how technology can be used to improve operational efficiency, comfort, and well-being. Guests can experience this first hand by staying at Glenorchy or by attending one of the regular tours of the site. People who cannot visit can learn from the online resources and live streaming data.

A project by: Revolve Energy | www.revolveenergy.co

ART GALLERY
COMPLETE CONTROL

KNX brings together mutliple subsystems

The Institute of Greek Artists & Scientists of the Diaspora is an art gallery building complex which is located at Magoula Achaias in Greece. It consists of three buildings that provide exhibition rooms, storage areas, a maintenance and restoration workshop, restaurant, comercial kitchen, guest rooms, sheltered parking spaces, and external gardens.

The project started in July 2013, and was completed in three phases by the end of 2018. The building complex occupies a total of around 2,500 m² sheltered surface area on a 5,000 m² plot.
Innob Systems Integration was responsible for providing a solution that combines enviromental control and monitoring, lighting, security, audio/video and other subsystems into a single central managment system in that is energy-efficient, easy to maintain, and future proof.
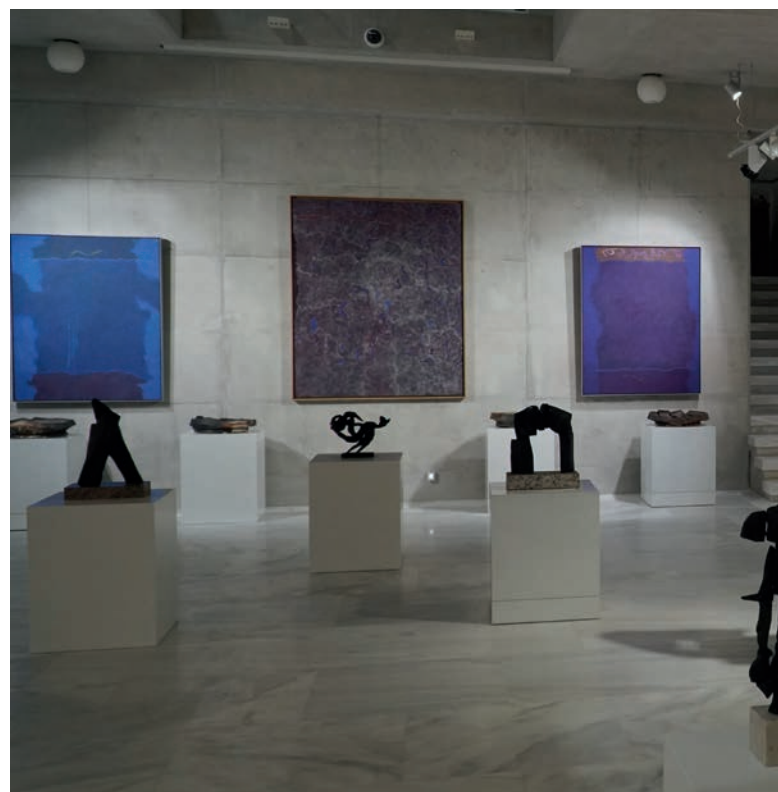
KNX as the multi-protocol backbone

For temperature and humidity control, heat pumps and fancoil units were used, plus special dehumidifiers in combination with various enviromental sensors. The security system consists of a Grade 4 alarm system, access control and more than 80 IP cameras. Lighting requirements were met using a variety of solutions and technologies.

Due to the fact that all of the subsystems were based on different protocols including KNX, DALI, Modbus, DMX, JSON, and XML, and the top priority was to have a central management point, KNX was chosen as the main field bus protocol due to its proven stability and the plethora of KNX devices and gateways available.

A growing system

The challenge was to accomplish the installation at the same time as the construction, so that as each individual building was completed, it was is fully operational.

With the first building that was completed and fully operational in January 2014, the installation consisted of one KNX line and aproximately 30 KNX devices. By the time the project was completed in December 2018, the installation had grown to five KNX lines with more than 800 KNX devices.

The whole project was a continuous process that grew with each new part of the construction, and there were frequent changes to the original design, resulting in the need for constant adjustments and testing on site.

KNX offers the flexibility to continuously evolve

Using KNX as the main technology helped us to have a robust base that gave us tremendous flexibility in choosing the right devices, even when they were provided by different manufacturers using multiple protocols.

After several months of full operation of the complex, having already overcome the basic requirements of the project, thanks to KNX, they know that they can easily and quicly implement additional building services in an already impresive installation.

Key products and technologies used

Main automation server: Embedded Systems Logic Machine that acts as a cross-standard gateway and intergates every subsystem into one central managment system.

HVAC (KNX, Modbus): Mitsubishi, Carel, Dantherm.

Lighting (KNX, DALI, DMX): Artemide, Iguzzini.

Security: Paradox, Optex.

Environmental sensors (KNX): Arcus-EDS, Elsner Elektronik.

Energy metering (KNX, Modbus): Lingg & Janke, Circutor.

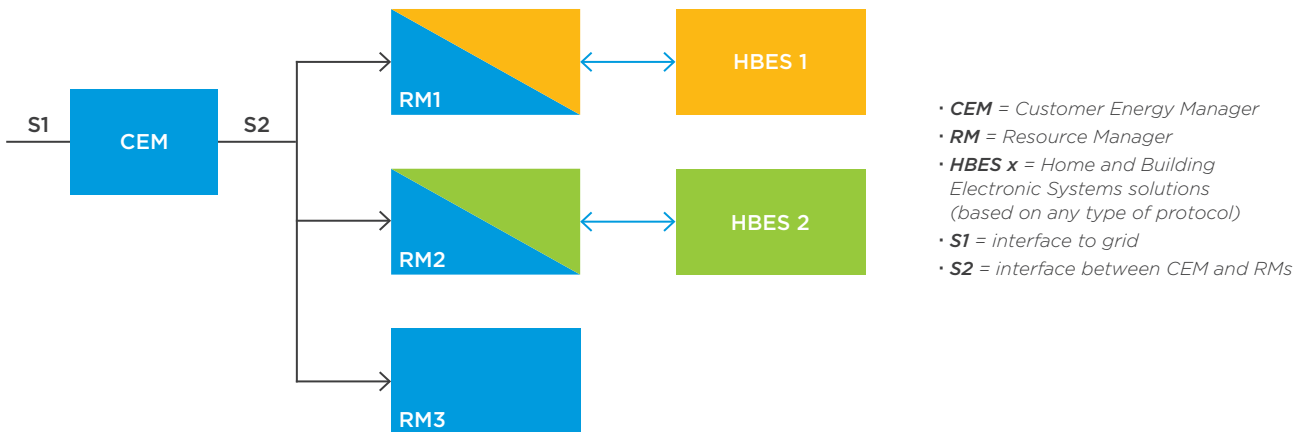**Audio/video (KNX, json, xml, pjlink):** ThinKnx, Yamaha, Epson.

Systems devices (KNX): ABB, MDT.

Operation devices (KNX): MDT, Schneider Electric.

A Project by: InnoB Systems Integration | www.innob.gr

Energy Management Standardisation

- **CEM** = Customer Energy Manager
- **RM** = Resource Manager
- **HBES x** = Home and Building Electronic Systems solutions (based on any type of protocol)
- **S1** = interface to grid
- **S2** = interface between CEM and RMs

As already explained in the beginning of this Journal, KNX is actively involved in helping shape the EN 50491-12-x standard series. Part 2 of this standard will specify which data will be exchanged between the Customer Energy Manager (CEM) and the Resource Managers (RM) at the premises. This standard is being developed by the Working 18 of the CENELEC Technical Committee TC205. The Customer Energy Manager (CEM) is the central brain in the installation, aware of the energy needed by devices (in case only consuming) or the energy made available by devices in the building (in case producing). Examples of devices consuming could be e.g. heating/cooling systems or an e-car, of devices producing e.g. photovoltaic systems. Storage systems can also be included in the Energy Management of the CEM.

The energy flexibility of a device (or even a collection of devices) is abstracted towards the CEM as RMs. In other words, the RM informs the CEM about the possible energy consumption/production patterns over time, after which the CEM controls the available RMs according to different strategies. Such strategies could be optimized according price information received from the grid or could be optimized so as to consume a maximum of own produced energy, before energy is drawn from or injected into the grid. For this and depending on the type of RM, the CEM can use different control types, i.e. :

- **Power curtailment-based control:** restrict power or consumption to a hard limit;
- **Power profile-based control:** shifting the power in time;
- **Operation mode-based control:** restricting power or consumption to a number of different levels (operation modes);
- **Fill rate based control:** for devices that have the ability to store or buffer energy

In view of the multitude of existing protocols that could be used to communicate between a device and the respective RM or between a RM and the CEM, the EN 50491-12-2 only lays down the data exchanged between the CEM and the RMs. The standard thus does not lay down the protocol to be used nor how the data shall be coded (e.g. XML, JSON, …). This is left up to the market.

In sum, there are a number of different ways the EN50491-12-2 standard could be implemented based on KNX:

- A KNX controlled heating or cooling system could continue to be operated as is currently the case (e.g. based on Twisted Pair and using KNX Group Communication). However, for instance, a resource manager module could be included in a KNX control panel that could calculate the energy profile of the KNX controlled heating or cooling system based on the received group communication and communicate this via KNXnet/IP to a KNXnet/IP enabled CEM.
- A KNX IoT Gateway could include a resource manager functionality, which abstracts the entire underlying KNX installation as regards needed energy. Via the KNX IoT Type 3 interface this energy need could be communicated to the CEM, also including a Type 3 interface. The data could be encoded as KNX standardized JSON-LD data.
- A charging station could include a KNX IoT Type 3 interface, which communicates the KNX standardised JSON-LD data directly the KNX IoT CEM.
- ….

KNX Secure becomes International Standard

---- *standardisation bodies*   ---- *developed standards based on KNX*
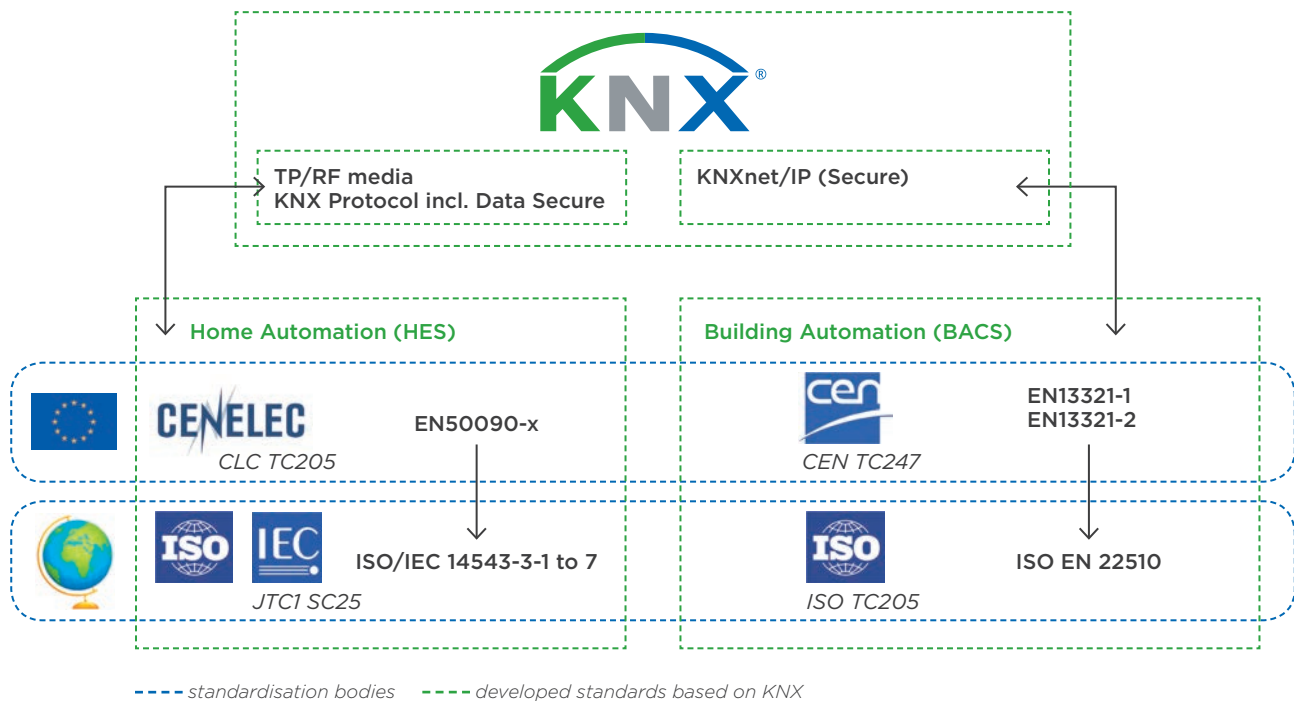
As is probably well-known to anyone dealing with KNX, KNX has been a worldwide standard for more than a decade. This standard, ISO/IEC 14543-3-1 to 7- documenting the KNX media (TP/RF) as well as the protocol - has been approved in the Joint Technical Committee between ISO and IEC, i.e. JTC1 and in its Subcommittee SC25. This standard bases on the European Standard series EN 50090-x, as was originally developed by the European Standardization body CENELEC. The scope of the SC25 subcommittee is however limited to Home Electronic Systems (HES), strictly speaking the standard is thus only applicable to home automation, so not to the building automation domain, in spite of the fact that KNX is also a popular system in the commercial building market.

Since the early days of KNX, KNX has also been active in European Standardisation for Building Automation. In the Technical Committee TC247 of the European Standardisation body CEN, KNX became a standard as early as 2003. For making KNX also a standard for Building Automation and Control Systems (BACS), the CEN Technical Committee decided to simply reference the EN50090-x series as EN 13321-1. In this committee, also other technologies like LON and BACnet have been standardized as respectively EN ISO 14908-x and EN ISO 16484-5 and -6.

At the time when KNX developed the KNXnet/IP technology, i.e. created the possibility to encapsulate KNX information also in IP messages, KNX decided to standardize this directly in CEN TC247.

It was felt that this technology could perfectly bridge in building automation the world between the KNX technology used at room automation level with the world of superordinate building management and energy management systems. The KNXnet/IP technology thus became a building automation standard in Europe as EN13321-2, enabling such applications as remote configuration, remote operation, fast interface from LAN to KNX and vice versa and WAN connection between KNX systems.

Since then, attempts were made to also internationalise this EN13321-2 standard.

The international counterpart of CEN TC247 committee is ISO TC205, where only the BACnet protocol has been standardised as ISO 16484-5 and -6.

KNX however convinced the Technical Management Committee of ISO to allow the national committee of Germany to submit the KNXnet/IP technology for international standardisation, which has now resulted end of November 2019 in the publication of the EN ISO 22510 standard. This finally rubber stamps the situation in the field, where BACnet and KNX are unquestionably the most popular protocols used in the building automation sector, often used side by side in projects, both having their individual strengths.

As icing on the cake, during the internationalisation of the KNXnet/IP Technology, KNX extended the EN13321-2 standard with the latest evolutions of the technology to become KNX IP Secure, i.e. the KNX solution to authenticate and encrypt messages on IP using AES128 encryption algorithms. By doing so, KNX can now flaunt the first manufacturer and application independent security standard for building automation.

Introducing a New Generation of Couplers

Combining outstanding security with state-of-the-art ease of use

KNX Association is once again raising the bar for security and ease of use in the world of smart homes and smart buildings. With the introduction of the new KNX Segment Coupler and the KNX Secure Proxy functionality, KNX is underlining it is technically always one step ahead.

The current situation
Until now, a KNX installer has the choice of the following coupler types:
1. Couplers between identical media, the most typical example being a TP/TP coupler. With such a coupler, a KNX installation can be split up in different lines and areas. Couplers can filter group and point-to-point communication.
2. Couplers that allow coupling different media, the most common solution being a KNXnet/IP Router coupling an IP network to a TP line or area. Another example is the TP/RF Media coupler, which couples a TP line to a RF "line".

One specific example of a coupler of the first type is a TP Line Repeater. A repeater used to be mandatory for extending a TP line segment of 64 devices with another segment of the same amount of devices. A TP repeater has however become somewhat redundant, if all 256 devices in a line can be fitted onto the allowed maximum line length of 1,000 m.

The current stumbling blocks
With the current couplers, it is not possible to:
- Extend an existing TP line with some RF devices, as the current media coupler requires to be mounted as a Line Coupler. This is an obstacle for the use of RF in existing TP installations, unless the installer takes the burden of completely re-assigning the correct individual addresses to the already installed products.
- Couple a secured KNX RF section to an unsecured TP section, e. g. protecting the RF section against a hacker, eavesdropping the communication on the open RF media.
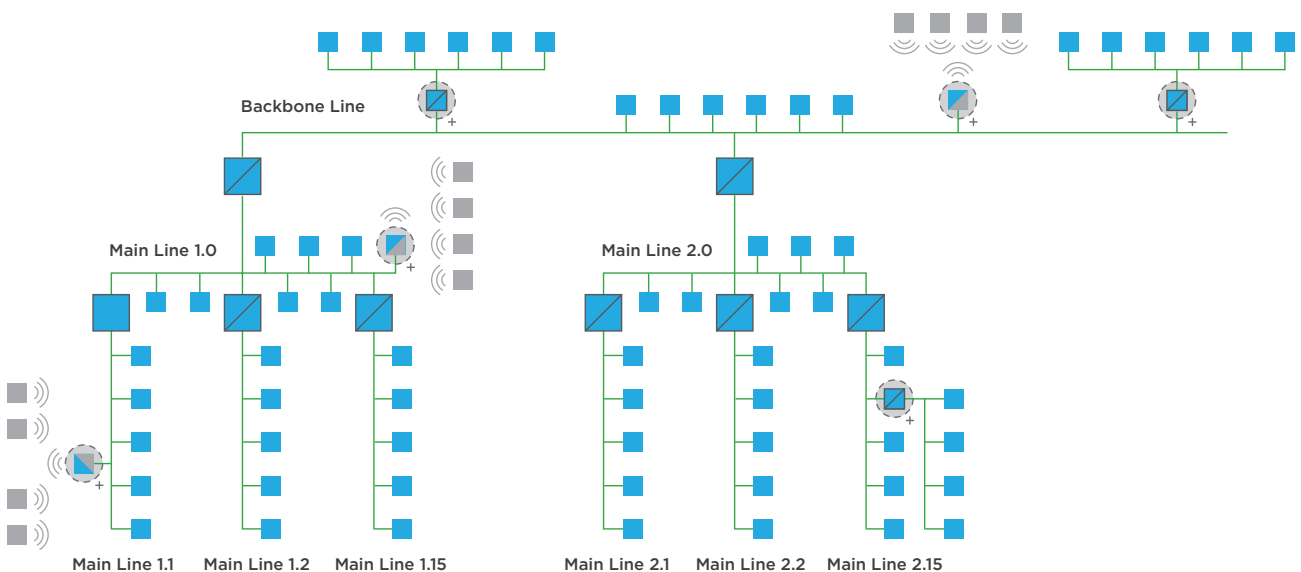
Adding a segment coupler can be anywhere in the topology
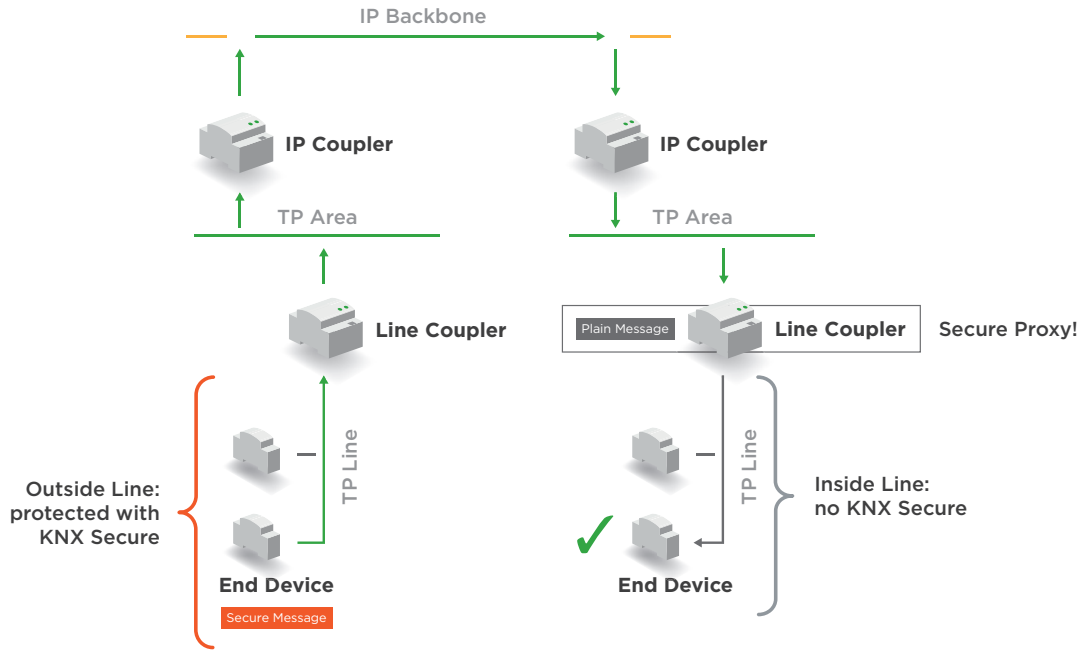
A Secure Proxy translating a secure into a plain message

The solution

Any of the above Coupler Types can now be extended with two new functionalities that are introduced in the KNX Standard, i.e. the KNX Segment Coupler and the KNX Secure Proxy.

- A Secure Proxy functionality can be added to any type of coupler to allow the coupling of a secured network segment to plain network section. This solution is ideal if wanting to couple a KNX RF network with secured traffic to a plain TP network. Such a secure proxy acts as a middleman and adds or removes the KNX Data Security to or from the KNX message, as otherwise the TP and the RF device would be unable to communicate, even if using the same Group Addresses.

- A Segment Coupler allows branching a KNX line at any point in the topology (line or area), creating a segment with any number of devices and also allowing filtering. A Segment Coupler can couple same media (e.g. TP/TP) or different media (e.g. TP/RF). This solution is ideal when needing extensions of existing KNX TP installations with a new RF segment. The Segment Coupler can have any device address, naturally taking into account that the number of devices in a line may never exceed 256.

KNX Secure

The new KNX Secure pages offer you all information and material about security measures, which are implemented in the KNX Standard. KNX Secure guarantees you the highest security, which is available in the market for home and building control.
https://KNXsecure.knx.org

Security Flyer

Different flyers to this topic can be downloaded from:
www.knx.org
(section downloads)

ETS Inside
now available for Linux

Free open system is popular by developers and programmers

The ETS Inside extended the reach of smart homes and smart buildings to a broader audience, allowing the commissioning and programming of a whole KNX installation with the tip of a finger. Never has it been easier to realise a KNX installation, thanks to the intuitive user-interface of the ETS Inside, which requires no training. Project commissioning was furthermore made available with tablets and phones, running on iOS, Android and Windows. Not only skilled integrators, but also non-skilled end-users can turn their home smart at any time.

KNX Association is proud to announce the next big step in the development of ETS Inside – The release of the ETS Inside for Linux!

ETS Inside: Smart, Simple, Safe
ETS Inside opens up the world of home and building control to more potential users.

Smart – By making the transition from PC to commonly used mobile devices, ETS Inside is reshaping how KNX installations are designed and commissioned. As the software can be a permanent part of the installation, only the ETS Inside app is needed to configure your KNX installation. This app is downloadable from all app stores.

Simple – The user interface is easy-to-understand and lowers the barriers for anyone wishing to benefit from the interoperability of KNX across products of different manufacturers and applications. Without the need for extensive training, newcomers to the smart home market now have the possibility to put a real KNX installation into action, be it in a home, shop or office.

Safe – With support for KNX Secure devices using the worldwide encryption standard AES 128, ETS Inside comes with the highest security features in home and building control. With KNX Data Secure communication between devices is protected, with KNX IP Secure, communication across IP is encrypted and authenticated.

Linux – Open Source and free OS for ETS Inside

"Linux comes in various forms and offers various benefits. One of the most important attributes of Linux is that it is available free of charge. This does not only save money, it also helps the further distribution of KNX worldwide.", says Franz Kammerl, President of KNX Association. "Being now available also for further platforms, such as Raspberry Pi and other single-board computers (SBCs), the hardware input for realising a KNX project with the ETS Inside has been considerably lowered."

Simplifying the entry for programmers and developers

Due to its openness, Linux is the chosen operating systems for many programmers and developers in the embedded world. With ETS Inside now being available for Linux, developers do not have to switch computers but can continue working with the ETS on their originally installed OS. Also, with the use of further KNX tools, which are available for Linux, KNX Association opened itself even further for IT developers and programmers. Examples for Linux based solutions could be the reading of telegrams with Wireshark, as well as the development of visualisation solutions, thanks to the availability of the Falcon Library for Linux.

A warm welcome to the first ETS Inside device!

BAB TECHNOLOGIE putting the ETS Inside on the DIN-rail!

With further development of the ETS Inside including the availability on Linux, KNX Association is happy to announce another milestone: The release of an ETS Inside server, by the KNX Member BAB TECHNOLOGIE, as part of the firmware of the APP MODULE. As simple as enabling a checkbox on the ETS Inside tab within the configuration, this opens the door to the immense ecosystem of thousands of KNX certified products.

The ETS Inside device consists of a hardware platform (Linux or Windows) hosting the ETS Inside server, which is the cornerstone of the ETS Inside:

1. Offers the server connectivity for the ETS Inside App to communicate with the KNX products, which require any kind of configuration.
2. Stores the project file.
3. Allows further collaboration with ETS Professional, so that certified system integrators (KNX Partners) can perform more advanced configurations.
4. A big difference to current ecosystems: the ETS Inside device is not a hub device, which is required for runtime. The installation, once it has been configured, will not be affected by the internet connectivity (it does not need connection with any cloud service).

BAB TECHNOLOGIE additionally confirmed that this feature will be extended to the following portfolio of devices such as: CUBEVISION MODULE, AUDIO MODULE, LINK MODULE, DATA LOGGER and KNX CONVERTER.

For more information about the ETS Inside device by BAB TECHNOLOGIE, please visit this link:

https://www.bab-tec.de
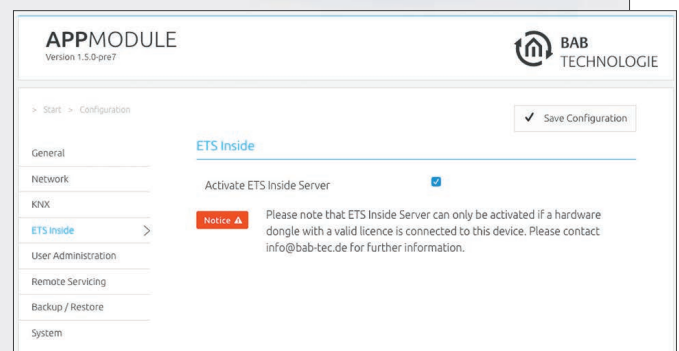
A quick start into the world of KNX: Thanks to KNX Virtual, it's easier than ever!

KNX launches a free virtual solution

Driven by the many advantages of a smart home or smart building, the demand for comprehensive, intelligent and safe automation of buildings using KNX is increasing worldwide. An increasing number of system integrators, installers and craftsmen are joining the world's leading standard for intelligent building networking. KNX already has more than 90,000 partners in 167 countries across six continents. With KNX Virtual, a significant increase in users is to be expected.

From now on, you can jump on the KNX train even faster

Thanks to new software, KNX makes it even easier for users to enter the KNX world, enabling them to implement ambitious smart home and smart building projects faster. The focus is on KNX Virtual, an unprecedented solution that allows users to quickly and easily familiarise themselves with the KNX system and how to use it. The application enables the simulation of real, physical KNX devices and their interaction. The innovative solution is based on the operating system Windows.

Particularly simple operation

In order to map all important KNX application scenarios as realistically as possible, users of KNX Virtual have the same requirements as users of physical KNX products. This means that the ETS system software is also used for the operation of the simulated KNX product. However, instead of having to connect a real device, the user's computer is simply connected to KNX Virtual via a virtual KNX/IP interface. Then – as with a physical device – only the operation of the programming button is required and all the required configuration (e. g. Group Address / Channel assignment between devices) can be downloaded. After all settings have been made, the user then enters the real world of KNX and does not need any additional hardware such as power supply, cable, USB or KNX/IP interface. Air conditioning, lighting and blinds control and many other important applications from the KNX world can now be easily tested by the user.

The world of KNX is at hand: start now!

At https://my.knx.org, KNX Virtual can be downloaded for free and then used anytime, anywhere. An Internet connection is not required for the actual use. For an easy introduction, the KNX website offers a comprehensive collection of materials, including a step-by-step guide to using KNX Virtual. Depending on your needs, interested parties can access free online training (ETS eCampus), videos, webinar recordings and FAQs for further input.

New ETS Apps

You can find all ETS Apps at
https://my.knx.org ▸ Shop ▸ ETS Apps

ABB IoT Dashboard ETS App

ABB The IoT Dashboard ETS App enables one to export the complete building structure and all Group Addresses from ETS into the IoT Dashboard. This dashboard provides the user with preprogrammed frames to get fast and high quality results. It makes it possible to realise changes very quick and easy. Thanks to this app one can load all data back into ETS very quickly.

Contact: *www.abb.com/knx*
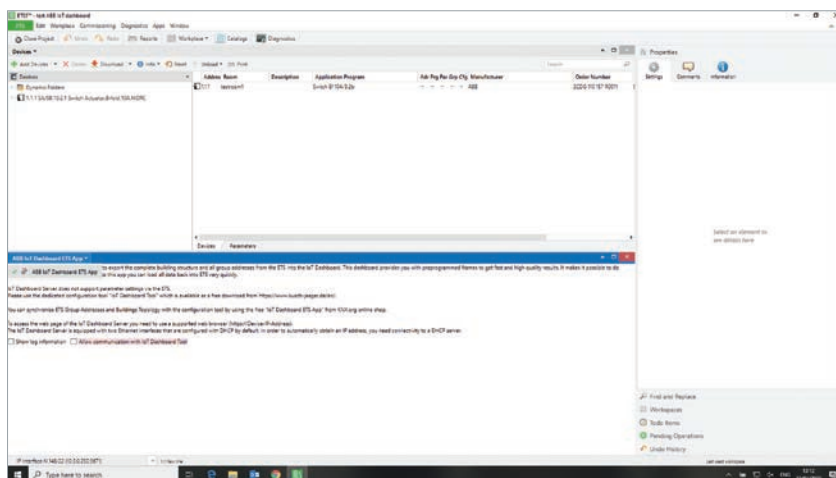
MDT RF+ Range Check

MDT The APP MDT RF+ Range Check is a useful tool for the analysis and planning of KNX RF installations according to the KNX RF S-Mode standard. The tool helps you to plan the installation location for new installations as well as to analyse and correct problems in existing RF installations. The MDT RF+ Range Check shows in a simple graphical matrix which connections are critical. Long-term analyses is also possible to identify external interference sources. The repeater functionality of the KNX RF devices can also be examined and evaluated with this tool. *Contact*: *www.mdt.de*
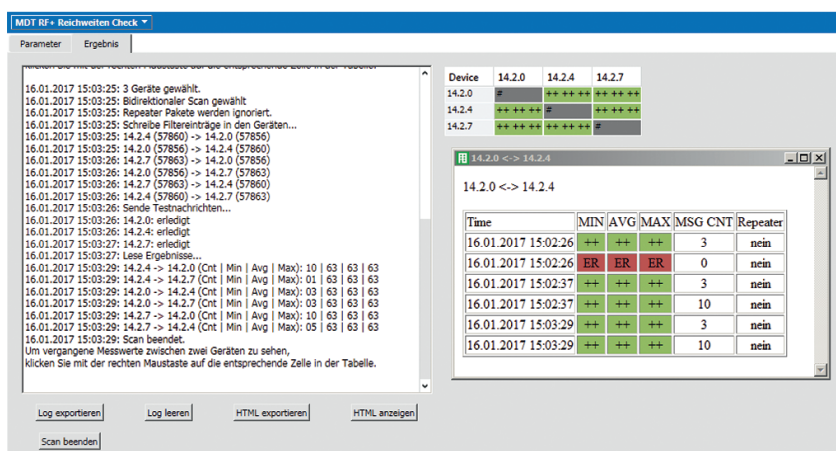
New Members

ABB Xiamen Smart Technology Co., Ltd.

CHINA ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader with a comprehensive offering for digital industries. With a history of innovation spanning more than 130 years, ABB is today a leader in digital industries with four customer-focused, globally leading businesses: Electrification, Industrial Automation, Motion and Robotics & Discrete Automation, supported by its common ABB Ability™ digital platform. ABB operates in more than 100 countries with around 147,000 employees. *Contact: https://new.abb.com*

alfanar Co.

SAUDI ARABIA alfanar operates in the construction, manufacturing and energy industries, catering to clients and customers across the world from its headquarters in Riyadh, Saudi Arabia. Its manufacturing division supplies a comprehensive range of high-quality electrical products designed and produced in Alfanar Industrial City. Its projects development and EPC division is one of the trusted electrification partners for mega projects in the global market with interests in the power, water and infrastructure sectors. It has an impressive portfolio of over 1.7 GW renewable energy development achieved in a very short period.
Contact: www.alfanar.com

Aurolite Elecrical Panyu Guangzhou Limited

CHINA Since its foundation in 1999, Aurolite has become a major leading manufacturer of infrared sensor and sensor lighting in China. All the Aurolite products pass international certifications such as the CE, UL,CUL, ASS, PSE, etc. which fullfill the consumers' requirements for safety, health and enviromental protection. Through the efforts of their courteous, enthusiastic and diligent team, their products have spread all over the global market. They plan to apply KNX technology to their sensors and lighting products with sensors. *Contact: www.aurolite.net*

Bee Controls by Arrow Engineering LTD (a Brand of ADGSC GROUP)

BULGARIA Bee Controls by Arrow Engineering LTD in Bulgaria, is a brand of the ADGSC Group, specialising in providing innovative products and solutions in the IoT field for buildings and smart cities. Bee Energy & Smart Cities alongside Bee Controls provide a comprehensive range of solutions that focus on automated, intelligent, intuitive, convenient and green technologies. They also specialise in automatic devices and appliances that connect everything – humans, animals, plants, objects – to the internet, with no need for human intervention, thereby saving time and costs. By promoting a safe economy through the provision of smart cities & smart building solutions that optimise the use of energy efficiency, Bee Solutions help and contribute to the ecosystem while ensuring that you consume only what you need. This ultimately allows for better efficiency, cost-effectiveness and maintenance.　*Contact: www.bee-solutions.tech*

Berghof Automation GmbH

GERMANY Berghof Automation GmbH is part of the 350-strong Berghof Group and develops system solutions for demanding control tasks. Leading automobile manufacturers, the food industry, manufacturers of special machines and machine tools, agriculture and many other industries rely on Berghof's sophisticated control solutions and their product safety. They all appreciate not only the extensive product portfolio consisting of compact controllers, modular controllers, display controllers and control panels, but above all the sophisticated, standards-based and well-engineered software solutions. As a CODESYS partner from the very beginning, Berghof supports its customers with extensive know-how. The Berghof PLCs offer a wide range of field buses and communication protocols.　*Contact: www.berghof-automation.com*

CasaTunes

UNITED STATES CasaTunes, a US company, was founded in 2008. The company offers a complete line of innovative multi-room audio systems for residential and commercial use. The company offers a 2, 3 and 5 stream music server, which can be paired with the company's own CasaTunes 6X6 matrix amplifiers, or alternatively, with many 3rd party audio distribution systems. You can use the CasaTunes multi-room audio products to add music to, and control the music, in your KNX projects. CasaTunes offers robust features, including advanced capabilities such as custom scenes, allowing complex control of your music at the simple press of a button.　*Contact: www.casatunes.com*

Cezamat PW Sp. z o.o.

POLAND The Centre for Advanced Materials and Technologies (CEZAMAT) is one of the largest investments in Poland in the field of high-tech research and development. Co-funded by the European Union, the project envisages the establishment of the network of five laboratories equipped with state-of-the-art R&D tools. Laboratories of the Center will allow to carry out new marketable technologies with commercial potential which are supposed to contribute to economic development. A large and technologically advanced project as this one requires involvement of the greatest and most prestigious scientific centres in Poland. The project is therefore being implemented by the Consortium comprised of many institutes.　*Contact: www.cezamat.eu*

CoolAutomation LTD

ISRAEL CoolAutomation LTD is an Israeli-based design and development company specialising in Heating, Ventilation and Air Conditioning (HVAC) integration solutions. The company's products offer plug-and-play virtualisation and connectivity for all types of HVAC systems and from all vendors, coupled with an out-of-the-box, cloud-based solution for control and optimisation for these systems. The company is led by a unique team of seasoned entrepreneurs and software, hardware and HVAC experts. The company's vision is one of creating an interoperable world, where connecting, controlling and optimising HVAC is simple and cost-effective. *Contact: www.coolautomation.com*

DNAKE

CHINA As the leading provider of smart community solutions and devices, Dnake (Xiamen) Intelligent Technology Co., Ltd. is a national high-tech and certified software enterprise specialising in R&D, manufacture, sales and service of building intercom and smart community systems. The company also acts as the chief editor of international standards for building intercom systems and the editor of national and industry standards. Since its establishment, the company has been working to "create the best life" and to make an intelligent living environment for "safety, health, convenience and comfort". The company is planning to devote R&D expenses and human resources to the development of KNX protocol products. Staring from the R&D of smart products, they will maximise the use of KNX protocols, such as on building intercom systems. *Contact: www.dnake.com*

Dorbas Electric Jiangsu Co., Ltd.

CHINA Dorbas Electric has been committed to the technical development and production of automatic control systems and low voltage electrical appliances, covering transportation, power, automation and control, public buildings and civil housing and other fields. Dorbas Electric is a practitioner of green energy efficiency management in urban construction. It has been devoted to energy conservation, emission reduction, environmental protection and sustainable utilisation of resources. Dorbas Electric intends to develop a series of equipment for needle housing and building automation under the framework of KNX, and expects to complete the development of equipment for building automation, intelligent lighting, energy management and other related systems. *Contact: www.dorbas.com*

DOVIT s.a

LUXEMBOURG DOVIT was created in 2016 from an encounter with one of the leaders on the European property development market. The result of the above was a product range that was even more optimised for mainstream use in large property developments. At the crossroads between design and innovation, DOVIT offers to improve its life experience, while simplifying the use of technology to make its homes more comfortable, more secure, more economical and more fun. DOVIT's ambition is to support, through products and services, the construction of modern systems, adapted to the customer's technological preferences, where different brands and technologies work together in complete harmony, providing an integrated system that is in synergy and constraint-free. *Contact: www.dovit.com*

DUOTECNO bvba

BELGIUM Duotecno bvba offers an extremely user-friendly home automation system, enhancing comfort within the home in multiple ways. You can control virtually any feature in your home with its home automation solution: lighting, heating, electrical appliances, roller shutters, audio, video, alarm and video intercom. You ensure your own safety and prevent wasting energy. Above all, the system is very flexible: you can set your entire home to your liking with a single touch of a button. Duotecno bvba intends to develop products on the KNX platform to further extend possibilities in their own projects. At a later stage they are planning to manufacture interfaces, push buttons and detectors compatible with the KNX system. *Contact:* www.duotecno.be

ETA Heiztechnik GmbH

AUSTRIA Heat economically and in an environmentally friendly way? It all depends on the heating boiler. Efficiency and environmental sustainability are the top priorities for Upper Austrian heating boiler manufacturer ETA. And they have the right heating solution ready for any requirement. Logs, wood chips or pellets: enough to heat a residential house as a whole office building. But the heating boiler must fit. One of the most innovative manufacturers of boiler heaters is located in Hofkirchen an der Trattnach in Upper Austria: ETA Heiztechnik GmbH has specialised in heating systems based on renewable energy since 1998. Only fuels from sustainable sources, i.e. wood or miscanthus (elephant grass, Miscanthus sinensis) are used for heating. The company has about 230 employees and produces over 10,000 boilers per year. *Contact:* www.eta.co.at

European Cable Service SRL

ITALY Founded in 2010, ECS is a specialist in the management, production and marketing of cables in the field of safety, anti-theft and video surveillance, signalling, control, data transmission, instrumentation, radio frequency and digital TV or satellite, as well as special and/or custom. Thanks to the dynamism, professionalism and competence of the staff, the quality of the products, the service and the warehouse, ECS affirms its activity in Italy and abroad, offering a range of products suitable to cover every type of material and every request of the customer. It operates in a constantly evolving market from a technical and normative point of view, while also making use of structured and certified partners. *Contact:* www.europeancableservice.it

Foshan Qite Technology Co., Ltd.

CHINA Ai Chu Healthy Human Kitchen (Foshan Qite Technology Co., Ltd.) is a brand of Elairsar (Australia) PTY LTD, which focuses on a healthy human kitchen. Ai Chu has developed a human healthy kitchen suitable for Chinese people by using the Australian health concept. Professional design, production, sales and supporting services are all part of the comprehensive AI Chu product strategy. Focusing on the realisation of consumer demands, they make a perfect combination of functional design, artificial intelligence, health and comfort, visual taste and geomantic tradition to create a healthy kitchen with high quality, dignity, safety, comfort and environmental protection. The company sees the future in KNX and will start product application development and devote itself to smart homes. *Contact:* www.aichu88.com

grandcentrix

GERMANY grandcentrix is the leading provider of high-quality IoT solutions for smart products, Internet of Things, smart homes and smart energy. With over 150 experts in-house, we cover the full range of expertise in technology and user experience for future-proof, large-scale IoT production. As a reliable cooperation partner for their customers and a passionate driver of innovation for the market, they position themselves at the forefront of the digital transformation. Operating across various disciplines, their teams consist of over 150 experts from the fields of Interaction and interface design, engineering (electronics, embedded, platform, frontend, cyber-physical security, distributed ledge technology) as well as system integration, maintenance and operation. Their employees live and experience the entire course of the development. They thereby reproduce all the sections and processes of the project for their customers and partners - from the initial objective to the finished product. *Contact: https://grandcentrix.net*

GreenConnect Solutions SA

SWITZERLAND GreenConnect Solutions SA is a Swiss company founded in 2016, organized in the form of an agile and highly digital platform, offering a free but perfectly coordinated framework for passionate experts in the fields of smart living and building automation, always keeping human beings at the heart of its concerns. To guarantee high quality level while optimising time and costs, the company develops and tunes a methodology and software combination for designing and monitoring automation projects allowing customers and partners to easily master even complex projects. In order to connect with the ETS world more closely, GreenConnect applied for membership as a KNX member. Green-Connect Solutions SA is also an approved KNX training centre and devotes a lot of time to teaching, sharing and transmitting knowledge and thus contributes to the digital transformation of buildings. *Contact: www.greenconnect.ch*

Hangzhou Binthen Intelligence Technology Co.,Ltd

CHINA Hangzhou Binthen Intelligence Technology Co., Ltd. is located in Hangzhou, China and is committed to creating high-quality professional and cost-effective sunshade products, including motorised curtain systems, motorised lifting systems, electric Roman poles and other indoor sunshade products; among them, the motorised curtain track and lifting system has obtained patent certification. The track can be assembled and the product can be conveniently transported and packaged in a box with a size of 1053 x 229 x 75 mm; the company has a complete product testing process, professional experimental equipment and ageing test program. Every production process uses monitoring, precise design, elaborate production, careful inspection and perfect creation to ensure that each factory product has passed the strictest possible quality inspection. *Contact: www.binthen.com*

Hangzhou BroadLink Technology Co., Ltd.

CHINA BroadLink takes pride in being the pioneer of smart home solutions, having achieved remarkable growth over the past five years and managed to lead the industry through advanced technologies, excellent user experience and flexible connectivity. Since the launch of their first smart plug in China in 2013, BroadLink is continuously focusing on electrical gadgets, lighting control and universal remote solutions. It also provides various kinds of accessories to build your ideal smart life. In the consumer sector, BroadLink is always leading the market with proven sales record and trusted OEM partnership with world's famous brands like Whirlpool, Electrolux, Honeywell, Mitsubishi,... They are also quite open with integration to third party platforms like Alexa, Google and IFTTT to enable controlling and automating your home in the smartest way. *Contact: www.ibroadlink.com*

Hangzhou Shendu Technology Co., Ltd.

CHINA DeepSmart (Hangzhou Shendu Technology Co., Ltd.) comes from Paradise Silicon Valley – Hangzhou Binjiang High-tech Zone. Focusing on intelligent HVAC, DeepSmart is a one-stop central air conditioning, fresh air, heating, water purification, KNX Internet of Things solution provider. DeepSmart provides Daikin, Hitachi, Toshiba, Mitsubishi Electric, Mitsubishi Heavy Industries, Samsung, Gree and other brands of central air conditioning intelligent solutions. They also provide environmental panel intelligent solutions, KNX intelligent control system solutions, intelligent solutions for purifying air, purifying drinking water and underfloor heating.   *Contact: www.deepwiser.com*
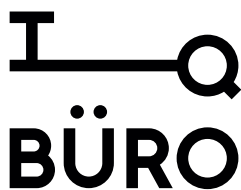
Honeywell Automation Solution Control (China) Co.Ltd.

CHINA Honeywell Home and Building Technologies products and services provide energy efficiency and security in homes, buildings and communities. Honeywell's comprehensive portfolio of building automation systems gives owners and managers the opportunity to select the best solution for their specific needs. These scalable solutions are the foundation of an integrated energy management and security plan for over 100,000 buildings worldwide. Honeywell plans KNX product lines for smart grid, microgrid and on-site power generation, integrated security, smart home and building controls, automation, and management, system service, maintenance and optimisation.   *Contact: https://honeywell.com*

Instalighting GmbH

GERMANY The lighting division of Insta is now known as Instalighting GmbH. The German company develops and manufactures LED project luminaires and the appropriate control system for modern architectural lighting. The manufacturer offers individual product concepts and optimum process integration for the OEMs of the lighting industry. Being a solution provider, InstaLighting places a person in charge for each project who is able to combine all the facilities and interfaces so that management, assembly, lighting design, commissioning and service can smoothly engage with one another.   *Contact: www.instalighting.de*

IQ Büro

RUSSIA The Moscow-based integrator company was founded in 2012 and consists of young and ambitious engineers. Having worked for a long time with a huge number of KNX devices from different brands, they realised what the Russian market lacks. Therefore, it was decided to form a department to develop their own devices. They do not just want to release KNX equipment like everyone else – they want to release a product that will fully meet the needs of Russian integrators.   *Contact: www.iqburo.ru*

J2 Innovations

UNITED STATES J2 Innovations is a fast growing, innovative software development company based in California that created FIN Framework, the state-of-the-art open framework for building automation and IoT applications. Furthermore, J2 is a founding member of the Haystack standard. FIN Framework comprises both building management and controls functionality in one software and with one tool and is the first building automation software that is entirely based on Haystack tags. FIN Framework is aimed at OEMs which provide products or systems that are used in buildings. FIN is designed to be highly customisable, so that their partners can bring a unique solution to market, tailored to their exact requirements. *Contact: www.j2inn.com*

LAPP Asia Pacific PTE LTD

SINGAPORE The company was founded in 1957 by Oskar Lapp with ÖLFLEX®, the first industrially produced signal cable in the world. Today LAPP produces cables and conductors for different industries and markets: mechanical and systems engineering, the automotive industry, MSR technology, electrical and installations engineering, EDC and more. LAPP products are primarily produced in the LAPP's own production plants. They currently supply 40.000 standard items from stock. They also develop and produce cables and conductors to customer specifications. LAPP has about 39 sales companies, 17 production sites and approx. 100 national partners worldwide and employ 3.770 people. *Contact: https://lappapac.lappgroup.com*

Lunatone Industrielle Elektronik GmbH

AUSTRIA Lunatone Industrielle Elektronik GmbH was founded in 2000. From the start, they offered customer-specific solutions in the area of DALI lighting systems, electronic information technology and industrial electronics. Customer satisfaction was and remains their main goal. From the concept to mass production, they meet all the highest requirements of the market. Particularly in the area of DALI systems, we are the undisputed market leaders in terms of product versatility and application solutions. Lunatone has been developing and manufacturing products in-house for over 20 years. The close link between development, production and output test offers essential benefits. In recent years, in addition to the development of its own devices, Lunatone has also implemented projects for many noteworthy customers. This includes small and medium-sized companies as well as large corporations. *Contact: www.lunatone.com*

Nanjing Taijiesai Intelligent Technology Co., Ltd.

CHINA Nanjing Taijiesai Intelligent Technology Co., Ltd. is a high-tech enterprise specialising in the research and development of intelligent control systems. The company is committed to providing customers at home and abroad with comprehensive solutions in building automation, intelligent lighting, building energy conservation, environmental monitoring, hotel room control, smart home and other fields. Over the years, the company has insisted on continuous innovation around customer needs. In 2017, the company launched a new generation of building automation products, striving to build a new generation of energy-efficient building systems. *Contact: www.techsel.cn*

Neuberger Gebäudeautomation GmbH

GERMANY Neuberger Gebäudeautomation GmbH, founded in 1968 and based in Rothenburg ob der Tauber in Germany, is one of the leading suppliers of building automation, room automation, clean room technology and process technology. The company currently employs around 540 people at its headquarters, numerous locations in Germany and an independent subsidiary in Weiningen, Switzerland. The DIN EN ISO 9001 certified company under the management of CEO Dipl.-Ing. Klaus Lenkner has been a member of the Weishaupt Group since 1995, which consists of Max Weishaupt GmbH in Schwendi and Baugrund Süd Gesellschaft für Geothermie mbH in Bad Wurzach. Neuberger's corporate philosophy is characterised by an exceptionally strong customer orientation. Neuberger supplies everything from a single source. *Contact:* www.neuberger.net

Ramcro S.p.a.

ITALY Ramcro was founded in 1979, as a family company producing special cables. The Croci family owns 100 % of Ramcro S.p.a.. In over 35 years, Ramcro has successfully expanded its presence in various countries and in a few different but important segments: oil and gas, fire, signal and control, BMS and optical cables. Ramcro production capacity is 4,000 km/month and 50,000 km/year. Production dpt is 18,000 m², of which 3,000 m² is for stock, allowing extremely high flexibility in delivery, with also 1,300 m² of offices and 750 m² for the laboratory. The Ramcro laboratory provides certificates for tests carried out acccording to major international specifications and is ready to be certified ISO 17025. It is also recognised by the international body as a "third party laboratory". Ramcro solves any kind of technical issue in the cables area, ensuring the client's satisfaction thanks to high quality and personalised solutions. *Contact:* www.ramcro.it

Samson Electric Wire Co., Ltd.

CHINA – HONG KONG SPECIAL ADMINISTRATIVE REGION Samson Electric Wire Co. Ltd. is a privately held company found in 1976 with over thirty years experience of electrical cable manufacturing. Samson is a global wire and cable service provider which provides proven, economical and customer focused supply solutions. With our manufacturing base and experience, Samson Electric Wire Co. Ltd. can provide industry recognised standard and custom-built cable types covering many applications across a wide market range. Their cable products and solutions are used in many high-technology products and services vital to modern life, including: communication networks, medical equipment, power generation, domestic equipment and everyday business. *Contact:* www.samsoncable.com.hk

Schnick-Schnack-Systems GmbH

GERMANY Schnick-Schnack-Systems GmbH has been producing media-controlled LED effect lighting for professional and premium use since 2004. A great variety of modules for indoor and outdoor use give lighting designers and integrators great flexibility. High quality components ensure the best performance and easy integration. The technologies provide RGBW, RGB, tunable White or 20 different fixed colour LED (2000 K – 6500 K + different colours). Applications range from TV shows (>10 x "Eurovision Song Contest"), premium exhibition booths (examples: VW, Audi, Mercedes, BMW, Heidelberger, Siemens, …), media facades, corporate headquarters, museums, art, theatres or premium private installations. These systems usually utilise 100,000+ channels driven in realtime. With their new KNX Gateway these systems are globally controlled via KNX in types of intensity, colour or standby functionality and also provide feedback via KNX. *Contact:* https://schnick.schnack.systems

Senfficient

MALAYSIA Senfficient drives efficiency on the foundation of goodness by providing affordable IoT solutions that enable their clients to achieve higher efficiencies in energy usage, operational efficiency and data availability for better sustainable living. Senfficient created an ecosystem around Building Management System with the architecture to enable monitoring and control in the cloud and mobile application. The architecture is readily integrate into larger context in Smart Government and Smart City. Senfficient solutions are ready to work with open protocols to communicate with plethora of industrial standards including KNX, and other systems. KNX is an important piece to Senfficient to incorporate more possibilities into the ecosystem. Consumers with KNX capabilities can integrate to the cloud system via Senfficient architecture to achieve centralized remote monitoring and control in the web and mobile application.

Contact: https://senfficient.io
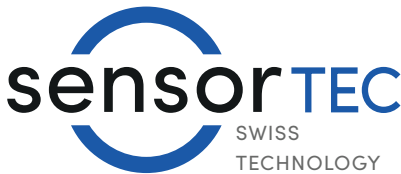
sensortec AG

SWITZERLAND The company Sensortec stands for innovative sensor technology in building automation. As an independent manufacturer and developer, the company supplies all the sensors and actuators that meet all the requirements of building management systems. Through the selection of high-quality materials and components, they manufacture products which fulfill the highest specifications. In addition to their comprehensive basic range, Sensortec also develops and produces customer-specific products such as room operating devices for highly modern interiors. *Contact: www.sensortec.ch*

Shanghai NOKE eps-technologies Co., Ltd

CHINA NOKE, founded in 2010, is committed to the commercial value of leisure water system projects, involving the design and development of devices for swimming pools as well as the construction and decoration of swimming pools. Based on business requirements, they are investing in the following fields of expertise: energy-saving product research and development and intelligent control system application. They rely on these new fields to provide customers with better technology. *Contact: www.shnoke.com*

Shanghai Rajayasa Co., Ltd

CHINA Shanghai Rajayasa Co., Ltd., located in Shanghai Jiading High-tech Industrial Zone, is committed to providing customers with smart and healthy living solutions, leading the industry to create a smart home ecosystem. Through the Internet of Things, cloud computing, big data and artificial intelligence services, they give users a "smart" healthy and comfortable life experience, achieve multi-party participation, and create a win-win situation.

Contact: www.rajayasa.com

Shenzhen Enlighten Industrial Co. Ltd

CHINA Shenzhen Enlighten Industrial is a company which is dedicated to the perfect combination of cloud computing, AI and IoT technology. Through the application of products and technology in the actual scene, it realises the concept of "technology makes life better". The intelligent interconnection of lighting, air conditioning, curtains, audio, access control, security and other equipment is realised by IoT technology. Intelligent and integrated solutions are provided for commercial buildings, hotels and families. Cost savings and efficiency improvement are achieved for enterprises, and more energy-saving, comfortable and convenient experiences are brought to customers and families.

Contact: www.aprstern.com

Shenzhen landccomTech co.ltd

CHINA Shenzhen landccomTech co.ltd is a leading intelligent building and energy saving service provider in China. It was established in 2012. With the business of "making buildings smarter and making life more energy-efficient", the company provides intelligent life-saving and energy-saving services and smart city top-level planning and design and overall solutions through the Internet of Things and intelligent technology. Shenzhen LandccomTech has excellent independent innovation capabilities. It professionally develops optimal construction plans and provides technical support for the project. The company has obtained a number of patents and software copyrights. *Contact:* www.ljrhtech.com

Stork AS

NORWAY Stork AS is a nationwide total supplier of components and control systems within the business areas of electrical lighting and automation. The company started up in Oslo in 1983. They have developed into a solid company with 24 employees with headquarters at Kolsås in Bærum and district offices in Larvik and Narvik. Stork AS offers a wide range of products from reputable suppliers in Europe and Asia and gives their customers advice and good solutions. The products they supply are innovative and functional, but also in terms of design and user-friendly installation, they are at the forefront. They want to challenge service and deliver a little more than you expect. Combining good delivery precision, high quality and the right price has so far given them a strong position in the market. *Contact:* www.stork.no

SUZUKI Corporation Pte. Ltd

SINGAPORE With its headquarters in Singapore, the co-founders of SUZUKI Corporation Pte. Ltd envisioned SUZUKI as an export-oriented company with "value for money" and "customer service" as its main positioning pillars. The company placed a high value on the importance of the brand image and invested heavily from the onset to make SUZUKI a recognised name in technology, security and building control industries. The company's philosophy is to select and operate through strategic partner companies in the marketing, distribution and manufacturing areas of the business. While the company works with a number of well-established and world-renowned manufacturing houses for some of its products, it still keeps an element of in-house final assembly whenever this adds value to the company and subsequently benefits its customers. *Contact:* www.suzuki.sg

Total Automation and Controls GmbH

SWITZERLAND Total automation and Controls GmbH is specially focused on developing new KNX products that are currently in demand, but not available on the market. The company makes use of the latest technology to define the best quality of flush-mounted KNX products such as switch actuators, dimmers, DALI gateways and room controllers for simplified installation and easy integration. Total Automation has over 20 years of experience as a system integrator in the Middle East and in India. The company has executed over 400 projects under KNX-based home and building automation systems. It is the only company to win KNX awards three consecutive times. *Contact: www.tac.swiss*

T-Touching

TAIWAN The T-Touching intelligent panel in all ranges includes controllable lighting, sunshade, heating and ventilation, audio and other functions. The unique technical principle is to transmit instructions through bus, wireless or power line carrier. In every scene control panel, pressing the scene key for five seconds saves the current scene state. Solve the complexity of programming by providing consumers with scenarios according to their own lifestyle. *Contact: www.t-touching.com*

xD Technologies GmbH

GERMANY xD Technologies GmbH is a classic system integrator and works as an IT service and integration company. Started as a one-man business, one now resorts to an experienced staff of permanent employees and freelancers. The company was partially integrated into the X-Direct Group in 2018. Working with highly innovative technologies in information technology, application development, databases and microcontroller programming is therefore no problem. The classic services such as installation, administration and integration of IT systems in companies and the support of mobile solutions are core business. In addition to services, the delivery of any IT products is possible. **Contact:** *www.xd-tec.com*

Xi'an Zhiyuan Control System Engineering Co. Ltd.

CHINA Xi'an Zhiyuan Control System Engineering Co. Ltd. is a special engineering company which has the ability of combining with developing, designing, manufacturing, selling the products and installing, the engineering task, and which nowadays has four departments under the company's direct control. At the same time, which has six sub-companies. Since the establishment of the company, it is involved in applying advanced technology to designing and manufacturing the new products, the company has produced the high-tech "bone-product" Automan AM Hotel room control system, which is the best-seller since it was put into the market. *Contact: www.automaneng.com*

New Products

1Home KNX bridge

1HOME SOLUTIONS GMBH 1Home is launching a state of the art device, based on an established KNX/IP interface that will bring your customers closer than ever with remote management. The 1Home bridge cuts down on your customer visits and lets you work more efficiently. Offer your clients the latest smart home technology such as voice control with any popular voice assistant (Amazon Alexa, Google Home and Apple Siri), with some of them offering offline and local device control. It is Apple HomeKit and KNX-certified. The bridge's local connection allows for the fastest device execution time on the market. It can be connected in the electrical cabinet directly or with PoE. *Contact:* www.1home.io

ABB i-bus® KNX combi switch actuators

ABB The new ABB i-bus® KNX combi switch actuators combine flexibility with compact design and offer switching and shading functionality in a device half the size. Ideally suited to dynamic requirements found in residential projects. These components allow future software extension for a smarter tomorrow.
Contact: https://new.abb.com

ABB EQmatic energy analysers for KNX

ABB The new ABB EQmatic energy analyser is a compact solution for monitoring, logging, visualising and analysing energy and consumption data from electricity, gas, water or heat meters via KNX, M-Bus or Modbus RTU. The web-based user interface is individually configurable to the respective requirements and makes it possible to identify energy thieves and optimise energy costs sustainably.
Contact: https://new.abb.com

New push button interface supports Data Secure and LED outputs

APRICUM D.O.O. At Light & Building 2020, Apricum appears as an independent brand for the first time. Various KNX Secure products are shown. One presented highlight is the new 4-fold binary input TIO4-Sec with KNX Data Secure support. Activation of "Secure commissioning" in ETS enables encrypted downloads to TIO4-Sec and runtime communication can be protected. In this way, manipulation and unwanted access are made impossible. To drive loads like status LED, channels can also be operated as outputs. LED brightness and night/day operation can be parameterised. Suitable for sensing potential-free contacts, TIO4-Sec provides the standard input functions for connecting push buttons, conventional switches and contact sensors to KNX. This product is available as OEM.

Contact: www.apricum.com
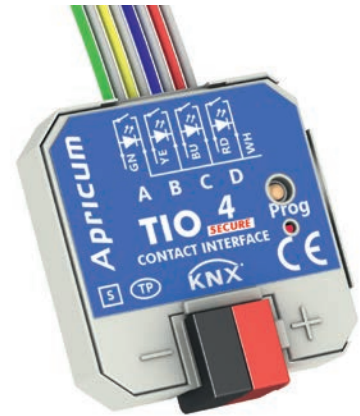
KNX presence detector

AUREX INDUSTRIES INC. The new OS-508i-KNX comes integrated with motion and light sensors. It is designed with 360° and Ø 12 m detection coverage and supplies not one, not two but four outputs for lighting and HVAC automation control applications. All the control parameters of the detector including lux, time, detection range and standby light levels can be configured via its specifically designed IR-11KNX remote control. On top of that; a special function enables the learning of the ambient lux value for greater flexibility when it comes to the settings. Additionally, the installer can use the IR-11KNX remote to program the detector conveniently without the need to open its housing for easy and quick installation.

Contact: www.aurex.com.tw

Super flat KNX occupancy detector

B.E.G. BRÜCK ELECTRONIC GMBH The innovative occupancy detector PD11-KNX FLAT-DX from B.E.G. for ceiling installation is almost invisible: Despite its only 0.85 mm building height, the detector has an impressive detection area of 9 m (diameter) at a mounting height of 2.5 m. The detector offers almost all functions of the B.E.G. KNX Generation 6 (DX), e. g. the short presence with shortened follow-up time after short occupancy of the room or the offset function for up to three lighting zones for creating a uniform lighting level throughout the room. A logic module is also supplied.

Contact: www.beg-luxomat.com

Blumotix Qubik Collection

BLUMOTIX SRL Qubik and Qubik Glass are the new capacitive keyboards in KNX technology designed by Blumotix. The innovation of Qubik Collection is represented by the option to activate the device both at the touch and in delayed mode, making it inactive at the touch and sensitive to the sliding action. The rockers can be configured with ETS. The devices are on white or black base, in square or rectangular version, equipped with eight capacitive buttons and four RGB LED that can light up with seven different colours. The collection is equipped with a temperature sensor and is customisable.

Contact: www.blumotix.it/en

MCU-04X-Box – blind actuator for decentral installation

BMS GMBH The MCU-04X-Box has four blind channels and eight binary inputs for standard blind push buttons. All connections are pluggable – that makes installation a breeze – with a size of only 145 x 190 x 30 mm. The shading products are protected from damage by wind and frost at any time via safety objects and priority management. The automatic runtime measurement and the preconfigured product libraries ensure precise positioning for sun tracking. All operating and diagnostic functions are available via Bluetooth inside of the service app. The end user controls from the WLAN via the Smart Home app. The end user conveniently controls via the Smart Home App. **Contact:** *www.bms-solutions.de*

KNX combi switch actuators

BUSCH-JAEGER ELEKTRO GMBH With a new generation of KNX combi switch actuators for use in residential buildings and functional buildings, Busch-Jaeger offers the installer more flexibility in equipping control cabinets. The devices for the Busch Installation Bus® KNX provide up to 24 channels on 12 TE for switching and shading functions – for maximum flexibility in the distribution cabinet. Due to their compact design, the combi actuators are also recommended for subsequent function extensions, for example as a reaction to structural changes.

Contact: *www.busch-jaeger.de*

SMART HOME OS 3 – personalisable UI

CONTROL4 Smart Home OS as easy-to-use visualisation. Room-related icons of the functions can be determined directly on the touch screen and / or on the app. This makes usage very easy and reduces the number of operating steps. For example, the lighting context for the selectable individual lamps or as a symbol for self-created lighting scenes can be reached directly with one touch. The same applies to room comfort, security and entertainment functions. Smart Home OS runs on a local controller which is connected to the KNX bus via IP using the Control4 KNX/IP router. **Contact:** *www.control4.com*

KNX glass touch sensor console (tabletop)

CONTROLTRONIC The tabletop device of the CONTROLtronic glass touch series Living Emotions® offers innovative technology and superior design. The unique freestanding KNX Glass Touch Sensor Console allows a very fast and direct operation of any KNX building function without having to search for a distant wall-mounted switch by simply placing the device on the desk, conference table or bedside table. The support of KNX Data Secure makes it possible to set up a secure and protected KNX installation. **Contact:** *www.controltronic.com*

Everything unter „Control"

DIALOGIC SYSTEMS The latest generation of the HomeCockpit Touch Panels has been completely redesigned and rebuilt – with the only 13 mm deep housing, they fit in all GIRA Control 9 Client and Control 19 Client flush-mounted device boxes. And that, without sacrificing the usual power features, such as the Intel Core i5-7200U processor, up to 32 GB of RAM and up to 480 GB SSD hard drive. This means that not only KNX-Applications, but also the multi-compatible HC-Navigation for third-party software integration, the HC-CamViewer for seamless camera monitoring and the SIP-compatible VideoPhone module for door communication run smoothly in parallel. And if you want more, watch a film on the HC-TV module. *Contact: www.home-cockpit.de*

New dimming and switching actuators

DINUY S.A. presents four actuators within its KNX portfolio: RE KNT LE3: 1-channel RLC+LED dimmer in compact housing, RE KNT 008: 8-channel RLC+LED modular dimmer, IT KNT 008: 8-channel switching or 4-channel blind control actuator 16A with 12 inputs, IT KNT 016: 16-channel switching or 8-channel blind control actuator 16A with 24 inputs. Due to the countless years manufacturing dimmers with the highest quality components and software, an incomparable functionality and reliability is ensured. The full range is optimised for perfect control of any dimmable LED lamp. Their design features a front control panel which allows a manual control via buttons, even if KNX bus is not connected. *Contact: www.dinuy.com/en*

PIKO

DOMOTICA LABS S.R.L. PIKO is the ultimate mini-server for small and medium KNX installations. Powerful inside and small outside, with its integrated KNX, RS485, USB and LAN, in just two DIN-rail modules. Configuration is made easy by a rich set of templates and tools, with high customisation of widgets and pages. The supervision can be built in minutes starting from KNX Group Addresses, giving the final user the opportunity to customise scenes, schedules, notifications, and more. An integrated multiprotocol, LUA-based logic module with graphical editor, completes the toolkit for system integrators. PIKO is natively integrated with Alexa and Google Assistant, so you can control it with voice, app for IOS / Android, or web browsers. *Contact: www.domoticalabs.com*

MULTI SENSOR KNX

EELECTRON SPA The range of presence sensors suitable for ceiling mounting consists of four versions: three suitable for mounting up to 4 m height and a version called "HIGH BAY" for installation up to 17 m height. The STANDARD, MULTI and HIGH BAY versions include a brightness sensor for environmental lighting control. The MULTI version also includes humidity and temperature sensors with the relative control algorithms and a sound sensor that can be used in rooms with parts that are less visible for the infrared sensor. All versions have a rear connector with three digital inputs that can be connected to buttons or switches and used for ON / OFF commands, dimming, shutters or blinds / scenarios, sequences, step commands, etc. *Contact: www.eelectron.com*
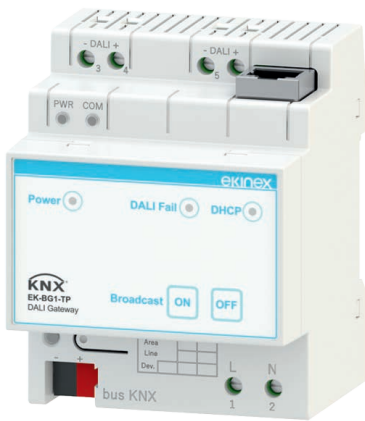
Ekinex DALI Gateway EK-BG1-TP

EKINEX SPA The Ekinex DALI Gateway EK-BG1-TP is a KNX-certified device and modular, panel-mounted DALI 2 able to connect a DALI network with a KNX network. The gateway controls up to 64 DALI devices in a maximum of 16 groups and can handle up to 16 complex scenes. The extended functionality offers new possibilities for configuring lighting scenarios. Various dynamic lighting sequences and effects can also be stored and recalled. Using Ekinex DALI converters any fluorescent, high-intensity and LED lamps can be controlled regardless of where they are installed. *Contact: https://en.ekinex.com*

Cala controllers and buttons

ELSNER ELEKTRONIK GMBH Intelligent interfaces to the KNX smart home as easy to install as a light switch? This is possible with the Cala KNX series from Elsner Elektronik. The room controllers, sensors and push buttons are installed in the switch series of the building. The components are available for 55 mm systems used in Germany and for the Swiss 60 mm system and can be easily combined. The simple and elegant glass surface in jet black or pure white connects all Cala devices, from touch displays with room climate control to switches with integrated temperature sensors. *Contact: www.elsner-elektronik.de*

Recording wind direction

ELSNER ELEKTRONIK GMBH The Suntracer KNX pro weather station provides all data relevant for building control, including brightness, precipitation, wind speed and direction, temperature, air humidity and pressure, dew point, time and position of the sun. The ultrasonic wind measurement has a short reaction time and also records the direction. In this way, facades exposed to wind can be protected, while automatic shading and ventilation is continued on the sides facing away from the wind. In the application, the data is used to control 12 facades. Among other things, the position of the sun, visual protection, time functions, set positions and priorities are taken into account. *Contact: www.elsner-elektronik.de*

LogicMachine Spyder

EMBEDDED SYSTEMS SIA Instant smart home with reliability of KNX TP1 and CAN FT. Optimised for integration with products freely available in your closest shop. LM Spyder connects two worlds – DIY and professional smart home based on KNX and other systems. Easy to create, easy to expand, step-by-step smart home. Built-in temperature, humidity, pressure, air quality and CO_2 sensors measure and control the environment around you. *Contact: www.logicmachine.net*

EmCom KNX presence detector

EMCOM TECHNOLOGY INC. EmCom KNX presence detectors bring energy savings and automatic lighting control to KNX home and building control system with ease and comfort. The wide range presence detector covers a 360° detection range up to diameter of 24 m; the high bay presence detector meets the requirement of 15 m installation height; and the corridor presence detector takes care of a 40×5 m aisle detection range. The whole product line-up is available for intelligent lighting management, offering superior energy efficiency and living comfort. *Contact:* www.emcom.com.tw

Enertex® ENA²

ENERTEX BAYERN GMBH The new Enertex ENA² gives you an easy-to-use remote access to your KNX bus and network devices without a Cloud service. Everything is configured directly on the device. Control user remote access with KNX telegrams. Enertex provides a forwarding service ("DNS") to allow remote access independently of the type of service (IPv4, IPv6, DS-Lite) and without changing the local network configuration. The data transferred can only be decrypted by the user himself. Our ENA² can also manage a secure IP network for your building infrastructure. Unlike other KNX remote access devices, the ENA² can prevent LAN/IoT devices with Cloud connection from accessing and interfering with your building infrastructure. *Contact:* www.enertex.de

Powerful IoT-ready interfaces with KNX interface

EXOR INTERNATIONAL S.P.A. EXOR International JSmart HMI products, with powerful dual-core or quad-core ARM CPU, are the ideal interfaces suitable for residential and industrial installations for energy efficiency and automation applications in connection with KNX/IP. JSmart devices are ready for Internet of Things (IoT) applications thanks to their advanced communication capabilities and EXOR Corvina Cloud service. With the use of EXOR JMobile and Corvina Cloud, JSmart devices, available with displays from 5" to 21.5" and suitable for installation without a cabinet, seamlessly connect KNX networks to the cloud using the OPC UA and MQTT services. Connection to other systems make these devices an integration tool of simple use and great efficiency. *Contact:* https://exorint.com

2 pair KNX cable with CPR class Cca

FS CABLES LTD FS Cables 2 pair KNX-certified cable is increasingly being used in both commercial and high-end residential applications for complete building control. This distinctive 2 pair 0.8 mm KNX green LSHF (Low Smoke Halogen Free) cable has been independently tested in the UK to BS EN 50575 for CPR compliance and is now classified to Class Cca, s1a, d1, a1. It is also tested and certified by KNX Association for guaranteed compatibility with KNX devices and equipment. A 1 pair version is also offered, as well as a 2 pair KNX white cable for internal installations. An external duct grade and SWA (Steel Wire Armour) versions are stocked for outdoor installations. All are KNX-certified and CPR-compliant to Class Eca. *Contact:* www.fscables.com

Energy management devices

GEWISS With the energy management solutions by GEWISS, including the KNX energy meter, the KNX P-Comfort and the KNX 3-channel actuator with energy measurement, it's even easier to keep electricity consumption in the home under control. Even remotely, thanks to the Smart Gateway app. The KNX energy meter measures and displays the total consumption in the house. The KNX 3-channel actuator manages up to three channels and measures the consumption of each of them. Finally, the P-Comfort KNX manages up to three channels and measures the consumption of each of them. ***Contact:*** *www.gewiss.com*

SEAWIN SC-TP400-4G8F

GUANGZHOU SEAWIN ELECTRICAL TECHNOLOGIES CO., LTD. SEAWIN SC-TP400-4G8F, with 4 inch, full-colour touch panel and 8-fold push buttons, can be used for switching, dimming, shutter control, value sending, air quality display, HVAC, background music, floor heating, ventilation, events, logic, etc. Each button has an LED background light for status signal and human-sensing night light. With a customisable user interface designation and shell colour, it is the ideal choice for your integration and decoration. 1/2/4/6/8-fold push button types are available. ***Contact:*** *www.seawin-knx.com*

KNX SMART TOUCH V50

GUANGZHOU VIDEO-STAR INTELLIGENT CORP., LTD As the latest KNX device presented by GVS on its 20th anniversary, the KNX Smart Touch V50 is equipped with a 5″ IPS display which offers true colours and high definition. It has integrated all the basic KNX functions of lighting, shutter control, HVAC control, RGBW control etc. It also contains a built-in sensor to help adjust the temperature automatically. The weekly timing and logic functions also allow users to set more complicated and specific scenarios. Meanwhile the installation design which has considered all standards, permits an installation in any wall box worldwide, vertically or horizontally. ***Contact:*** *www.gvssmart.com*

Granite Display

HDL AUTOMATION HDL Granite Display is a multifunctional touch-control panel with a 4-inch high-resolution display. You can quickly access the most frequently used functionality or scenes by the shortcut buttons on the home screen. As you explore more on the user interface, you may find it different but comfortable controlling your home devices on Granite Display, including lights, curtains, modes, HVAC, music, primary air system, etc. Instead of installing a row of switches on the wall, you can just use one Granite Display to control all the electric devices and maintain a minimal look at the same time.

Contact: *https://www.hdlautomation.com*
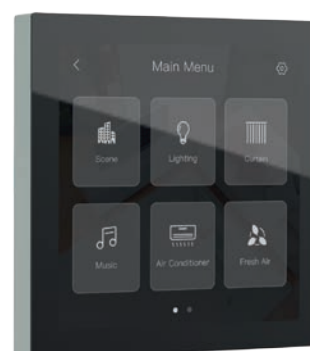
New Intesis Modbus RTU to KNX gateway

HMS INDUSTRIAL NETWORKS S.L.U. Intesis presents its new Modbus RTU to KNX for the integration of Modbus RTU Slaves, like energy meters, to KNX systems. This new product extends the already wide range of Intesis KNX protocol translators. The gateway has direct connection to KNX TP from one side and to Modbus RTU (RS485) from the other side, offering bi-directional control and monitoring of the integrated data. Its reduced dimensions help its installation anywhere required. Moreover, it is easily configured via ETS.

Contact: www.intesis.com

Buzzer Müller AS 10.00 KNX

HUGO MÜLLER GMBH & CO KG With the KNX buzzer AS 10.00 KNX, Hugo Müller expands his KNX product range with a buzzer for the KNX bus. You can set three different sound levels and with the adjustable tone sequence it's possible to generate a continuous tone or a specific tone sequence. The buzzer can be used in private areas e.g. as a confirmation sound on leaving the house or as a warning buzzer if the windows are opened. Due to the compact housing, the AS 10.00 KNX can be easily mounted on the wall or with the help of a mounting angle also outside. The buzzer is set up via ETS. *Contact:* www.hugo-mueller.de

Verso indoor unit
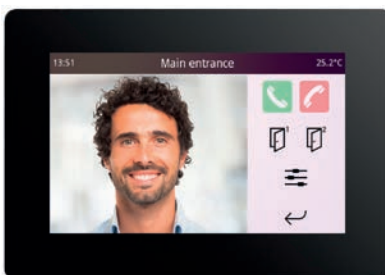
IDDERO The new Verso indoor unit is the latest addition to the Iddero Verso family of 4.3″ capacitive touch panels. This model retains the elegant design, attractive visualisation, and advanced functionality from the Iddero Verso series (including support for remote control from smartphones and tablets through the Iddero Mobile app), and also doubles as an indoor monitor for SIP-based door phone systems. Compatible with SIP door stations from main door phone manufacturers. The device features an integrated loudspeaker and microphone, and can handle real-time true colour video and full-duplex audio with acoustic echo cancellation. *Contact:* www.iddero.com

EVE X1 server for home and building automation

ILEVIA S.R.L. ILEVIA EVE X1 server is the hardware platform of the EVE system, a multi-protocol gateway equipped with KNX, RS485 and LAN ports, which guarantees interoperability between devices with different communication protocols. The gateway allows the supervision of the system and all the automation functions connected in an extremely simple and intuitive way, both locally and remotely, with the free EVE client app for mobile and desktop. The well-designed user interface automatically adapts to any device. EVE X1 server also acts as a gateway for Google and Amazon voice control systems. The EVE software allows you to design the interface, scenes, timers and much more depending on the version installed. *Contact:* www.ilevia.com

Analog Io 0 – 10 V Module

I-LUXUS GMBH The I-Luxus 0 – 10 V module with eight analogue outputs can be used for 0 – 10 V LED drivers for dimming operations or 0 – 10 V operational valves for HVAC operations. It has four analogue inputs, PT1000, NI1000 sensors and 0 – 10 V voltage. 0 – 20 mA current via 500 Ohm shunt connections are supported. Four digital inputs are included can be connected as dry contact. Eight analogue output channels DC010V. Four analogue input channels four digital input channels Dimming operations HVAC operations. KNX certified product and therefore configurable via ETS. *Contact: www.i-luxus.de*

TA-Slider 160 KNX

IMI HYDRONIC ENGINNERING TA-Slider from IMI Hydronic Engineering is a digitally configurable proportional actuator with KNX communication; available with or without 24 V relay. TA-Slider 160 KNX and KNX R24 are suitable for valves requiring up to 160N adjusting force, making them ideal for HVAC applications that call for advanced hydronic control. Thanks to numerous setting parameters configurable through ETS, TA-Slider allows for optimal on-site adaptability. For accurate diagnostics, 5 different errors (low power, signal out of range, valve clogging, stroke detection failure, cyclic timeout) can be reported on the KNX bus. It features IP54 ingress protection in all installation orientations. *Contact: www.imi-hydronic.com/sites/EN*

Cubik-VH

INGENIUM In order to meet the needs of the market, BES launches a push button for hotel room doors: Cubik-VH. It has two signalling icons for MUR and DND modes, as well as a door bell, which is only available in MUR mode. Besides the room number, it is possible to customise icons, labels, colours, hotel logo and background image / plain colour. In addition, an extra version called CUBIK-VHD is available, and it includes a colour TFT display. Room number and messages (14 bytes), such as welcome or check out info, can be shown on the screen. It is also possible to modify colours on it. An elegant solution that fit to every type of hotel solution thanks, greatly, to its availability of customisation. *Contact: https://besknx.com/website/en*

KNX DALI Gateway 2 x 64 WEB

INTERRA Interra proudly presents newly developed KNX-DALI Gateway. The device has 1 x 64 Ch and 2 x 64 Ch versions. Each channel controls 64 devices, 16 groups and 16 scenarios. Each DALI device can controlled individually, group and broadcast additionally emergency and tunable white (Type 8). There is field addressing and control over ETS without extra software. Installation, control and monitoring of DALI line via KNX and Ethernet provide flexibility. Visualisation and control of the DALI devices via web server and defective ballasts monitored by notifications. Manual operations and control of the DALI line can be changed with the manual button. Remote update feature will keep your device always up-to-date. *Contact: www.interra.com.tr/En*

Updated iRidium KNX server UMC

IRIDIUM MOBILE presents a controller for automation systems, including KNX and IoT devices. Now the device allows you to program any Function Block Diagram (FBD) logic, i. e. without JavaScript knowledge. You can create unique project interfaces and integrate different systems in iRidium. Using the server you get the following functions to KNX projects. Secure remote control; does not require port forwarding and a white IP address and is easy to install, BYOD; gives a person temporary access to control automation and audio / video equipment from his mobile device. It is often used in hotels and conference rooms. Voice control; uses Amazon Alexa and Google Home voice assistants.

Contact: www.iridi.com

ISE SMART CONNECT KNX PANASONIC

ISE INDIVIDUELLE SOFTWARE UND ELEKTRONIK GMBH With the ISE SMART CONNECT KNX PANASONIC, the integration of up to four Panasonic TV sets into KNX is possible. The functionality of displaying IP camera pictures on screen is an innovative feature. Looking at your TV and find out whether guests are already at the door. Your smart washer has finished? Movement in the garden? Display self-defined message texts on your TV. Controllable functions are: on / off (standby), volume, programme and source selection. The system can be completely configured via ETS and is extendable via firmware updates. *Contact:* www.ise.de

Recorder

IT GMBH Recorder is a very powerful tool suite for KNX telegram recording. With the independent recording module, KNX telegrams can be recorded and stored unattended, reliably and permanently, tailored to the task. The files created by the recording module or other sources (e. g. ETS) can be further processed with the recorder in a variety of ways. The recorder user interface can evaluate recorded telegrams and analyse them with powerful filter functions.

Contact: www.it-gmbh.de/en

Lime KNX Universal Dimmer

LIME INTERNATIONAL The Lime KNX Universal Dimmer is a compact 230 V dimmer with one dimming output and two binary inputs. The dimming actuator can be used for dimmable electric lights supplied with 230 V mains. To cover a wide range of usable electric lights, the universal dimmer 7625530 can operate with trailing or leading edge dimming. Besides controlling the light by switching, relative dimming and dimming value, several optional functions are integrated including scenes, automatic slumber function, staircase lighting and sequencer.

Contact: www.lime-smart.com

MDT room temperature controller smart 55 with colour display, SCN-RTR55S.01

MDT TECHNOLOGIES The room temperature controller has an active colour display and is equipped with a temperature and humidity sensor. The setpoint shift is set with the upper two keys +/-. The lower two keys are used either for the Comfort / Stand-by / Eco / Antifreeze operating mode, the integrated ventilation function or for any two switching functions. The room temperature controller also has four binary inputs for connecting window contacts or conventional push buttons. The brightness of the colour display can be adjusted via a brightness or day / night object. *Contact: www.mdt.de*

MDT push button lite 55 2-fold with temperature sensor, BE-TAL55T2.C1

MDT TECHNOLOGIES Innovative group control, the new multi-tip function, RGBW status LED and integrated temperature sensor. With these new functions / features, the push button presents itself on the market and fits seamlessly into the 55 mm range. The extensive application enables functions such as switching / dimming lighting, blinds, value and scene control. The push buttons can be set as a pair of push buttons or as individual push buttons. The integrated temperature sensor is used for room temperature measurement and, together with the heating actuator, enables efficient room temperature control. *Contact: www.mdt.de*
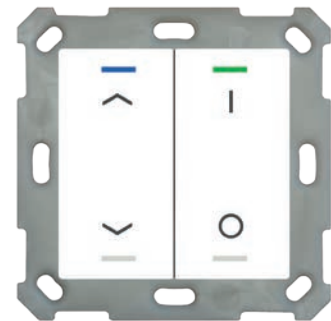
## KNX 60 W / 120 W LED driver with PWM output

MEAN WELL ENTERPRISES CO., LTD. PWM-60/120KN series is a 60 W / 120 W AC/DC LED driver featuring the constant voltage mode with PWM style output, which is able to maintain the colour temperature and the brightness homogeneity when driving all kinds of LED strips and the KNX interface to avoid using a complicated KNX-DALI gateway. PWM-60/120KN offers 12 V and 24 V output models. Thanks to the high efficiency up to 90 %, with the fanless design, the entire series is able to operate for -40°C ~ +90°C case temperature under free air convection. The minimal dimming level is 0.5 % and the output frequency is changeable between 200~4000 Hz using ETS settings, providing great flexibility for LED lighting applications. *Contact: https://building.meanwell.com*

New reporting module for NETx BMS platform

NETXAUTOMATION SOFTWARE GMBH The NETx BMS platform now includes a sophisticated reporting module. The generated reports include chart and table elements that show trending and historical KNX values as well as data from other BMS functions. Typical examples are trending reports, alarm reports and KNX/DALI test reports. Reports can be generated manually or automatically (daily, monthly, weekly, yearly reports). The report files can be stored as PDF, MS Excel and many other formats. The reporting module also includes an enhanced reporting designer. Using this web-based designer, the user can create their own report designs and templates. *Contact: www.netxautomation.com*
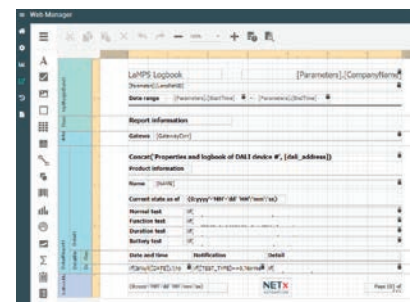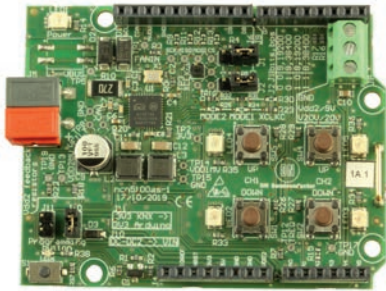
## New KNX development tools

ON SEMICONDUCTOR Quickstart your next KNX project with the new family of Arduino shield compatible evaluation boards from ON Semiconductor (NCN51xx-ASGEVB). The Arduino Uno V3 connectors ensure compatibility with a wide variety of development boards, enabling rapid prototyping with your microcontroller of choice. All external components necessary for operating the transceivers are included on the shield. The ON Semiconductor NCN51xx series of KNX transceivers handle the low-level communication necessary to comply with the KNX standard. The high level of integration, like the multiple DCDC convertors and LDO, allows for an industry-leading small design footprint.

Contact: www.onsemi.com

Touch panel Controlmicro

PEAKNX The slim Controlmicro celebrates its premiere at Light + Building 2020 (Hall 9.0, Stand D80). With its 8-inch screen, it is ideally suited for room control and can be installed flexibly in portrait or landscape format on a standard switch box. The Controlmicro can be operated with the PEAKnx YOUVI software or other common visualisation programs for room and home control – the Windows 10 based system makes it possible. Despite its compact design, the Controlmicro is equipped with high-quality features. Depending on the used software it has the same application options as the larger PEAKnx touch panels Controlpro and Controlmini. *Contact: www.peaknx.com*
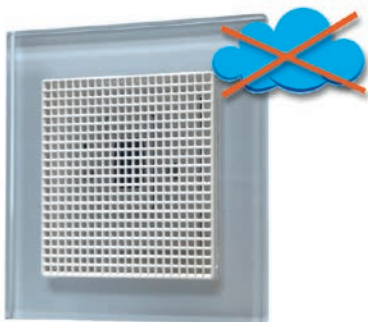
ARAGON, plug and talk with KNX

PROKNX SAS Voice control without the Cloud in the switch box. The computer for the evaluation of spoken data, as well as microphones and loudspeakers: Everything integrated in a device that fits seamlessly with all switch ranges (55 x 55 or all JUNG series). As inconspicuous as it is, the functionality is so powerful. After plugging in via the PoE line, the configured devices and room names are read from the popular visualisation servers like ProKNX (realKNX Air, realKNX O-two) or JUNG (Smart Visu Server) and trained via AI. Immediately thereafter, the system is ready to work, a real plug and talk! ARAGON is compatible with the previously supplied servers without any update required.

Contact: www.proknx.com

KNX-BSA12L / KNX-BSA-12H

SATEL SP. Z O.O. KNX-BSA12L and KNX-BSA12H are two-channel blind actuators designed to work with devices supplied, respectively, with 24 V DC and 230 V AC (current up to 6 A). They offer a very high control resolution (in the order of milliseconds) even for very small loads (KNX-BSA12L: 30 mA, KNX-BSA12H: 160 mA). They have mechanisms for the automatic recognition of endpoints and current position of the window covering. They allow you to control the movement of the shutters / blinds (horizontal and vertical blinds, roller shutters or awnings) and windows with electric drive. They perform functions: central, intermediate position, scenes, security, and weather alarms. *Contact: www.satel.eu*

KNX Secure IP router

SCHNEIDER ELECTRIC The new SpaceLogic KNX IP router DIN rail MTN6500-0103 from Schneider Electric is certified KNX IP and Data Secure. It belongs to a KNX Secure family containing an IP and USB interface and a coupler. The 18 mm width housing saves space and the device does not need power over Ethernet or an auxiliary power, thereby saving money and energy. 10/100 MHz makes IP switch selection easy. It can be used as an IP router or IP interface with up to eight tunnelling channels. There are two push buttons to transmit all groups or individual address telegrams for a test. Three LED show the device and communication status. QR codes enable a KNX Secure configuration with ETS and a quick product information access. *Contact: www.schneider-electric.com*

Presence detectors WIDE

SIEMENS AG Buildings are increasingly intelligent. Ensuring that the rooms in buildings are perfect places to be, require intelligent devices – like the new presence detectors WIDE, which combine five functions for a pleasant atmosphere and energy savings in the room. The new presence detectors with a wide detection range capture data on CO_2, temperature, humidity and brightness and thus control not only the illumination systems, but also ventilation and heating systems. This creates optimal ambient conditions in the room – for maximum comfort and the highest energy efficiency. *Contact: www.siemens.com*

Seven senses for KNX

STEINEL VERTRIEB GMBH Apart from identifying true human presence, the True Presence® multisensor KNX from STEINEL also detects brightness, room temperature, humidity, air pressure, the concentration of volatile organic compounds (VOC) as well as the level of CO_2 actually measured in a room. This means that besides saving energy, the focus is also on providing a good indoor climate. And, as a 360-degree multisensor, it can watch over up to 177 m² with absolute precision. Extending the range of KNX applications, True Presence® supports over 170 Group Objects. Combined and grouped together, they are already capable of delivering the information for digitalising the automation of tomorrow's intelligent building today. *Contact: https://truepresence.steinel.de*

Line coupler with integrated KNX power supply

TAPKO TECHNOLOGIES At Light + Building 2020, TAPKO will highlight an exceptional product innovation – the combined system device MECps640. It combines the functionalities of two different KNX system devices. As a combination of a TP line coupler and 640 mA bus power supply, MECps640 connects TP lines and simultaneously powers the line on its secondary side. MECps640 requires only two units space on the DIN-rail. Using the ultra-slim device instead of two separate larger ones leads to a remarkable advantage. Installations become more compact and projects become more cost-efficient. All filtering and special functions of TAPKO's highly appreciated line coupler MECtp are present. This product is available as OEM. *Contact: www.tapko.de*

Android touch panel E10W

TCI – GESELLSCHAFT FÜR TECHNISCHE INFORMATIK MBH E10W is a 10 inch touch panel with KNX connectivity. It provides IP54 protection and was developed for cost-sensitive applications in building technology and energy management. Thanks to the Android operating system and the HTML5 browser, it is compatible with all common web applications and can be used universally. The widescreen display with capacitive multitouch (PCT) offers a native resolution of 1024 x 600 pixels. It can be operated intuitively, just as the user is used to doing from his smartphone or tablet. Without rotating parts and fans, the panels are particularly robust and durable. *Contact:* www.ambiento.de

Integrated KNX switch

TENSE Tense expands its product range with the Intensity Integrated: an architectural switch solution for every situation. The Intensity Integrated of Tense is a capacitive touch switch which can be made fully integrated in the wall finish of your choosing. Tense provides the electronics which can easily be placed behind a stone, wooden or Corian wall. The Integrated has four touch zones with integrated colour LED which provide tactile and functional feedback. As all other functions and behaviour of the Intensity, the LED's individual behaviour and colour can be set via ETS. The Intensity switch supports switching, dimming, setting scenes. It also has a scene module, timer, programmable logic ports. *Contact:* www.tense.be
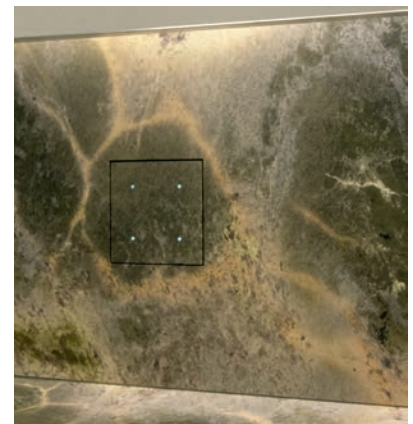
KNX Data Secure wireless actuators for flush mounting

THEBEN AG Theben AG is expanding its range of KNX RF products with new KNX RF flush-mounted actuators and media couplers. Encryption through KNX Data Secure ensures communication is optimally protected against tapping and manipulation. KNX RF flush-mounted actuators support secure communication and therefore effectively prevent interpretation of the transmitted data. This guarantees maximum data security for the customer and effective protection against tapping and manipulation. The portfolio comprises a universal dimmer (DU 1 RF KNX), a blind actuator (JU 1 RF KNX) and a switch actuator (SU 1 RF KNX). All actuators have two external inputs for connecting buttons, a signal contact or a temperature sensor. *Contact:* www.theben.de/en

Viavai: Access control

THINKNX Thinknx Viavai is a fully integrated access control system that permits you to enhance the level of automation and security where it is applied. It has many benefits in terms of flexibility and integration as it is natively compatible with KNX systems. Viavai communicates directly with KNX through ThinKnx servers and takes advantage of the KNX bus enabling the use of standard KNX keypads, RFID or biometric readers as components of the system. Viavai offers a convenient solution in many practical cases: it can be adapted to fields where codes with long-term expiration are required as in service or industry fields, but also to hospitality where credentials are usually short-term and remote management is required. *Contact:* www.thinknx.com

WAREMA KNX SMI actuators

WAREMA RENKHOFF SE The KNX SMI actuators by WAREMA as DIN rail-mounted devices each control 16 SMI or SMI LoVo motors (depending on the actuator) independently in up to 16 groups. At only 3 TE wide, the highest flexibility is given for the installation of the actuators. Access to the emergency / manual control is easy either by means of a switching mat on the actuator, ETS or smartphone app (Bluetooth LE). Just as easy: commissioning by SMI Key ID via ETS or motor search / allocation by app. The smart SMI motors provide feedback on the position of the sun shading system and send any error messages.

Contact: www.warema.de

Match-55: Wireless and secure

WEINZIERL ENGINEERING GMBH Two-in-one in the Match-55 series: KNX RF / ENO push button 440 secure wireless push button for EnOcean and KNX RF in one device. Without configuration, the push button works in EnOcean or EnOcean Secure mode. Through configuration with ETS®, the push button switches to KNX RF mode with optional support of KNX Security. The push button is suitable for numerous switch ranges available on the market with an internal dimension of 55 mm. With soft and quiet keystroke, it is available as a single and double rocker. The sister model KNX TP push button 420 secure offers a solution with integrated bus coupling unit for the KNX bus.

Contact: https://weinzierl.de/index.php/en
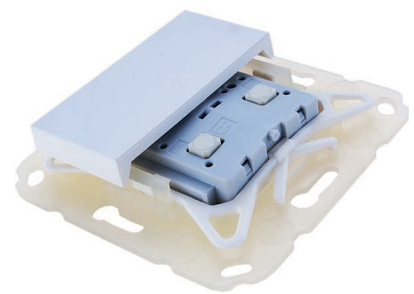
NV Embedded® – An adaptable solution

WINDOWMASTER INTERNATIONAL A/S NV Embedded® sets the stage for the future of indoor climate control. With focus on IoT, BMS adaptability and flexible fieldbus communication, the solution presents new, unmatched features that will alleviate the obstacles that previously prevented building professionals from opting for automated natural ventilation. The system fits all building types, as the solution doesn't require a specific fieldbus technology. It can use all open standards including KNX depending on the preferred level of BMS integration. As a result, the new NV Embedded® is both flexible and scalable. Furthermore, NV Embedded® benefits from an app and cloud solution allowing building administrators to access building data. *Contact: www.windowmaster.com*

NarrowDIM X4

ZENNIO AVANCE Y TECNOLOGÍA SL Universal dimming actuator (RLC, LED, CFL) for DIN rail (4.5u) with four channels for up to 210W@230VAC (160W@110VAC). It allows double channel connection, up to 400W@230VAC (300W@110VAC) and quad channel connection to control up to 750W@230VAC (600W@110VAC). Auto load type detection (RLC). Configurable dimming curves for LED and CFL. It allows manual control of its outputs thanks to the push buttons on the cover. It includes 10 independent logical functions. Error detection: short-circuit, voltage surge, overheating, anomalous frequency, supply voltage failure, parameterisation error. *Contact: www.zennio.com*

KNX RF training kits

ZF FRIEDRICHSHAFEN AG ZF Friedrichshafen, TAPKO Technologies and Voltus are cooperating to offer a KNX RF S-Mode training kit as a perfect basis for KNX training centres to start with KNX RF. The partners have composed a basic kit (Voltus part number: 1692969), which consists of a KNX RF switch with programming adapter from ZF, compatible design parts and a KNX RF media coupler. A supporting extension kit (Voltus part number: 1692970) is offered which contains in addition to a KNX RF USB stick, also a KNX RF socket to enable the training of additional functions. Both sets are directly available from Voltus.

Contact: www.voltus.de

KNX Secure – IP interface and IP router

ZIDATECH AG KNX Secure offers effective protection according to banking standards in smart homes or smart buildings. KNX devices are connected with a computer, central visualisation or other data processing devices via IP using the JUNG KNX IP interface. The KNX IP router can also be used as an area or line coupler. IP Secure encrypts the data communication in the IP network. Thus, the communication to visualisation is safe. KNX Data Secure ensures that KNX telegrams selected independently of the medium are authenticated and encrypted. Thus, the communication between sensor and actuator can neither be interpreted nor manipulated. In Switzerland, the JUNG IP interface and IP router are available exclusively from ZidaTech. *Contact:* www.zidatech.ch

KNX IS YOUNGER THAN EVER

30TH ANNIVERSARY

Join the celebration with the KNX Community in 160 countries!
Be part of our success, be part of KNX.
Celebrate with us the 12 months of 2020 with new activities and actions.
http://knxis30.knx.org/

Save the date for the big celebration day!
20. 10. 2020

National Groups

KNX Australia gets social

AUSTRALIA KNX National Group Australia is taking advantage of social media by enhancing its online presence with ads and dedicated articles, and offering its members a platform that reaches everybody at any time. KNX Australia is proud of the exposure this brings to KNX and its Australian members have never been higher. They are a role model for other KNX National Groups to follow its example.

Contact: Peter Garrett | peter.garrett@mysmart.com.au
www.knx.org.au

KNX Australia's LinkedIN appearance

Focus on assisted living

AUSTRIA Thanks to the cooperation between KNX National Group Austria and Technikum Vienna, people with disabilities can now enjoy an easier life in their own home. Having already caught the eye of the local Austrian TV-channel 'W24', which dedicated a report to assisted living.

Contact: Robert Marzy | robert.marzy@hager.com | www.knxaustria.at

Dr. Prof. Prauß explaining the advantages of KNX for assisted living

Networking and security

BELGIUM On 10 October 2019, KNX National Group Belgium organised a KNX network meeting under the theme 'Innovations with KNX and how to interact with smart energy meters'. Participants were treated to an exhibition, as well as presentations in Dutch and French, including one on the latest available devices in the market.

Contact: Rob Van Mill | info@knx.be | www.knx.be

Hands-on in Belgium

KNX Days in Brazil

BRAZIL With nine speakers and a sold-out venue, the KNX Days in Sao Paulo were the best KNX event yet in Brazil. Examples of the various KNX solutions for different kinds of homes and buildings were particularly useful in helping the audience appreciate why KNX is the technology of choice for any application. The attendance exceeded all expectations, and surpassed the already-impressive numbers from 2018, by far.

Contact: Gustavo Vazzoler | gustavo.vazzoler@br.abb.com
www.knx.org/br

Audience of the KNX Days

2019 KNX forum in Beijing

CHINA The '2019 KNX Home and Building Control Technology' forum in Beijing underlined why KNX is the leading technology in China. With a spotlight on the growth of KNX in the country, as well as the numerous KNX installations already in place, attendees were once again reminded why KNX was rightfully approved as a GB/T standard in China.

Contact: Shen Pu | knxchina@knx.org | www.knxchina.org

Shen Pu opening the forum

KNX Days Colombia

COLOMBIA As soon as the KNX Days in Bogota started, there was a palpable feeling of change and success in the event hall. With an impressive line-up of speakers, KNX National Group Colombia showed why it has a leading position in Colombia for building automation, and a strong position in Latin America as a whole. The next KNX Days for 2020 are already being planned and promise to be the best yet.

Contact: Juan Palomino de los Santos
palomino.juan@palominosolutec.com | www.knxcolombia.org

KNX Days exceeded expectations

Impressive proof of successful strategy

CROATIA The KNX National Group Croatia educational event in Zadar was a great success and helped to engender a strong sense of community. By focussing on its core values, KNX Croatia consolidated its leading role in creating a path for the future. Future events have already been scheduled, so stay tuned for more!

Contact: Olivera Tomic | olivera.tomic@apricum.com | www.knx.hr

Opening of educational event

AMPER – just one out of many events

The Train was well received

CZECH REPUBLIC With six #KNXTrain events, a presence at the leading Czech trade fair, AMPER, and strong market growth, KNX National Group Czech Republic can not only look back at the most active year in its young history, but its most successful one. Among the activities already planned for 2020 are participation in AMPER 2020 and KNX training workshops all over the Czech Republic.

Contact: Josef Kunc | eibsyst@volny.cz | www.knx.org/cz

From Lapland to Helsinki

FINLAND KNX National Group Finland successfully organised the biggest KNX Roadshow that Finland has ever seen. With eight stops all over Finland, local communities were able to learn all about new KNX developments without having to make long journeys within their own country. Under the theme 'KNX for all', participants were treated to the latest news on KNX Secure and other KNX solutions.

Contact: Kiia Einola | kiia.einola@sahkoinfo.fi | www.knx.fi

One of eight stops

Attendees from all over France and beyond

Training focus in France

FRANCE Training is a hot topic for KNX National Group France, so it came as no surprise that its KNX training event sold out. The agenda included presentations by various KNX members, as well as an unforgettable touch-and-feel experience which not only showcased KNX in action, but demonstrated its potential, simplicity and professional future, which is offered to everyone.

Contact: Amel Karim | contact@knx.fr | www.knx.fr

Evening@KNX

GERMANY With a diverse audience from all over Germany, the Evening@KNX in Frankfurt was destined from the outset to be spectacular. The event provided a unique opportunity for participants to learn from informative presentations and lively discussions in an outstanding venue – once more underlining how KNX is present and dominant in Germany.

Contact: Hajo Deul | knx@zvei.org | www.knx.de

Outstanding venue

KNX Hungary and EMOSZ focussing on smart homes

HUNGARY KNX National Group Hungary has two reasons to celebrate. First, KNX Hungary came to an agreement with EMOSZ, the leading association for installers in Hungary. The second reason sprang as a result, namely a whole-day conference on smart homes using KNX. Needless to say, the conference exceeded all expectations and underlined the great potential of this new cooperation.

Contact: Zoltan Balogh | bz@berker.hu | www.knxhungary.eu

First joint event with EMOSZ

KNX Ireland moving up

IRELAND People travelled from all over Ireland to participate in the KNX Ireland event at Citywest Hotel, Dublin, and it was clear what a positive effect it had on everyone. Participants came way with so many positive messages, and the KNX National Group Ireland set goals for the near future, including strategic plans and upcoming events, which will not only promote KNX as a technology, but as a platform, which will grow together with its members.

Contact: Gerard Galligan | gerardgalligan@me.com
www.knxhungary.eu

Gerard Galligan opening the KNX conference

KNX Italy celebrates

ITALY Not only did the KNX National Group Italy organise its most successful KNX Italia award ceremony to date, it also had a special anniversary to celebrate, namely 25 years of KNX Italy! Unsurprisingly, the award ceremony was a day full of achievement and pride. Having become one of the world's largest markets for smart home and smart building technologies, Italy has seen KNX elevated to top-scale status.

Contact: Francesca Talamo | segreteria@knx.it | www.knx.it

The Board of KNX Italy

KNX Japan at JECA fair

JAPAN Japan Electrical Construction Association (JECA) opened its doors to its annual fair, at which KNX Japan participated with great success! Being one of the supporting associations, the KNX National Group Japan was hosting various events and conferences during the fair. Being under the star of growth, the participation at JECA Fair underlined the correct strategy of KNX Japan.

Contact: Takayuki Shintani | knxjapan@itrco.jp | www.knx.org

KNX Japan at one of Japan's leading shows

Daniel Lee explaining the benefits of KNX

KNX Korea boosting training

KOREA The #KNXTrain stop at the KNX National Group Korea event in Seoul was memorable not only for the excellent educational content, but for the lottery of a free KNX Basic Training course. In addition, the audience was treated to the latest news and important topics such as energy management with KNX, KNX Virtual, and other issues.

Contact: Daniel Lee | info@knx.or.kr | www.knx.or.kr

KNX Luxembourg reborn

LUXEMBOURG Eighty people joined the #KNXTrain event organised by the KNX National Group Luxembourg, which included an exhibition as well as a comprehensive forum with presentations from various companies about the most important topics. The event not only provided the opportunity to share knowledge, it was a clear demonstration of success, welcoming new members and registrants for the next KNX training courses, and exceeding all expectations.

Contact: Thomas Plein | info@knx.lu | www.knx.lu

Young audience for new solutions

KNX Days in Mexico a success

KNXDays in Mexico

MEXICO KNX National Group Mexico's whole-day event covered various topics that were presented by some famous speakers! The audience was clearly impressed by the high quality of the event, as well as recent developments in KNX, especially in terms of security and IoT. In addition, the press was left in awe about the technological advancements of KNX.

Contact: Maribel Pacheco | mpacheco@knx.mx | www.knx.mx

KNX dominating Light Middle East

MIDDLE EAST During the Light Middle East trade event, which took place from 15–17 October 2019, the KNX National Group Middle East took yet another major step towards a great future for KNX in the Gulf region. On the second day, they gathered the support of more than ten companies from all over the world to focus on the next challenges in the region. With a clear focus on security in hospitality, the KNX National Group Middle East is ready for an exciting future.

Contact: info@knx.ae | www.knx.ae

KNX Middle East Community

KNX – the most secure technology

Cyber security meetings

NETHERLANDS The KNX National Group Netherlands organised the first series of three meetings on cyber security. Attendees were informed about the risks of smart automation systems, and one of the presentations also dealt with the application of KNX Secure. It turned out to be a popular topic and a wake-up call, which attracted almost 150 installers and systems integrators.

Contact: *Rob van Mil | info@knx.nl | www.knx.nl*

Happy Kiwis

NEW ZEALAND With four events all over the island, the KNX National Group New Zealand set the bar to a new high. Supported by various KNX manufacturers and a strong national team, the Kiwi KNX community gathered in order to learn more about KNX and the latest solutions. Needless to say, the audience did not only benefit from a great atmosphere, but from an impressive update on all the latest from KNX.

Contact: *Julia Roberts | secretary@knxnz.org | www.knx.org.nz*

Presentation of Theben Asia at KNX New Zealand event

Learning more about the future

#KNXTrain in Gliwice

POLAND The #KNXTrain made a stop in Poland, inviting KNX installers and integrators from the industrial region of Silesia to learn more about the current status of KNX. The event took place in Gliwice, and covered presentations, workshops and a small exhibition. With a focus on topics such as KNX RF and KNX Secure, the KNX National Group Poland clearly demonstrated how it is tackling topics of the highest priority.

Contact: *Jan Worobiec | jan.worobiec@targetpress.pl*
           www.knxpolska.pl

KNX Portugal Awards

PORTUGAL The second KNX Portugal Awards on October 25th attracted almost 50 entries, from which the six best projects were chosen. Showing great creativity and professionalism, these projects impressed the judges with their outstanding quality, and demonstrated why KNX is the leading technology in the Portuguese market.

Contact: *Rui Horta Carneiro | rui.carneiro@knx.pt | www.knx.pt*

Proud winners

KNX Secure in Romania

ROMANIA Under the banner of 'Security on Board', the #KNXTrain took a stop in Romania, where the KNX National Group Romania was again able to fill its venues with participants eager to learn about the highest security standard for building automation installations. This was so successful that the KNX National Group Romania is already preparing for the next event in Cluj.

Contact: *Rafael Marculescu | presidente@knx.ro | www.knx.ro*

KNX Secure all over Romania

KNX Roadshow in Russia

RUSSIA The KNX Russia Roadshow had an impressive itinerary that took in Kazan, Ekaterinburg, Sochi, and St. Petersburg. With more than 300 participants from all over the largest country in the world, the roadshow not only far exceeded expectations, but heralded a new era of KNX events in Russia.

Contact: *Andrey Golovin | golovin@konnex-russsia.ru
www.konnex-russia.ru*

Stop in St. Petersburg

KNX in book of records

SOUTH EAST ASIA A new record was set when 25 students got together and displayed the words 'MALAYSIA BOOK OF RECORDS powered by KNX' in illuminated letters. The challenge was to program the parameters for the letters, download the settings with ETS and light up the letters. The outstanding accomplishment made it into the Malaysia Book of Records and was achieved using 2 areas and 25 lines.

Contact: *Peng Wha Siew | pw_siew@yahoo.com | www.knx.asia*

KNX Students setting a new record

Second Smart Home Technology Forum

SPAIN 200 participants gathered at the two-day 2nd Smart Home Technology Forum in Barcelona. The main focus was on the intelligent and connected apartment, for which the interaction between KNX and voice-control-assistants is gaining popularity. In order to demonstrate the full potential of KNX, members of KNX Spain encouraged feedback from estate agents, and showed how their needs can be addressed through real-life projects.

Contact: *Michael Sartor | info@knx.es | www.knx.es*

Second edition of successful forum

*KNX Secure presentation
at the booth*

KNX Sweden at ELFAK

SWEDEN Having enjoyed impressive market growth, the KNX National Group Sweden made the headlines with an outstanding performance at ELFAK – the Nordic trade fair for the power and electricity industry. In addition to showcases of KNX solutions and new developments, the daily presentations on KNX Secure drew constant attention. The great success of KNX Sweden at ELFAK underlines how smart buildings are coming to the forefront of the public's lives, and how KNX is leading the way.

Contact: *Jan Hammersköld | info@knx.se | www.knx.se*

KNX at AIE Conference

SWITZERLAND Energy and climate change were the focus of the KNX installers' summit. The conference framework centred on 'Sector Coupling with KNX', which perfectly fitted this year's agenda and showed how energy management in KNX-based smart homes and smart buildings is leading the way to saving the planet.

Contact: *René Senn | knx@knx.ch | www.knx.ch*

Visitors from all over Switzerland

VIP Visit at the KNX Booth

KNX Thailand at THBF

THAILAND The KNX National Group Thailand participated for the third consecutive time at the Thailand Building Fair. Thanks to KNX, the whole topic of building automation is reaching new levels of awareness and possibility. With all members of KNX National Group Thailand participating, the show was a great success and highlighted how KNX Thailand has evolved from a small group to a direction-giving Thai association.

Contact: *Benoit Guillerey | benoit.guillerey@phuket-technology.com*

KNX UK out in force

UNITED KINGDOM The KNX National Group UK had a busy year and was out in force at various trades shows, presenting a vision for a better future and explaining how KNX can meet today's challenges. Among the great successes was the stand at the Smart Buildings show, which was supported by a large number of KNX UK members and was very popular with project builders.

Contact: *Tara Garland | admin@knxuk.org | www.knxuk.org*
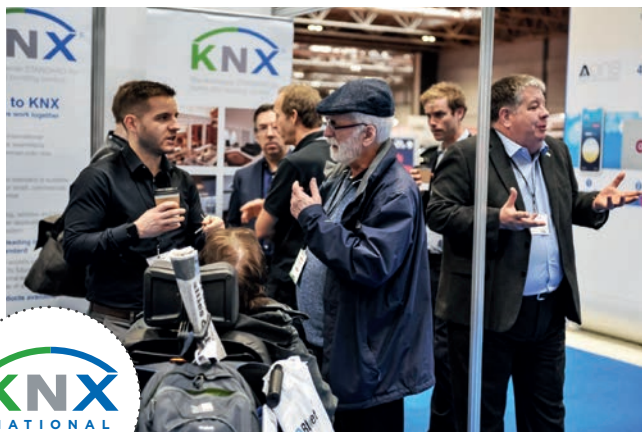
*Popular booth
at Smart Buildings show*

Userclubs / Professionals

KNX Innovation Award 2019 won by SUMI Smart

BELGIUM The integrator SUMI Smart won the KNX Innovation Award 2019 presented by KNX Belgium during a network meeting. The company won the prize for the integration of smart KNX installations in the new police station in Kortrijk. In addition to this project, three others were nominated for the award, including two by Casa Domotic and one by Domotechnology.

Contact: *Rob van Mil | info@knx-professionals.be*
www.knx-professionals.be

SUMI Smart proud winner

Winter Meeting in Freiburg

GERMANY KNX Professionals gathered from all over Germany (and beyond) in order to discuss the year as well as upcoming activities, such as the participation at Light + Building 2020 in Frankfurt and IFA 2020 in Berlin. With a strong focus on sustainability, the KNX Professionals committed to a more sustainable approach in order to promote a greener future inside and outside the building.

Contact: *Dirk Müller | info@knx-professionals.de*
www.knx-professionals.de

KNX Professional meeting at "Fach-großhandel Elektrotechnik Zander"

Professionals Networking

NETHERLANDS Security is not only important on trains, but especially for your smart home. With this in mind, the #KNXTrain made a stop in the Netherlands at the KNX Professionals Networking meeting. The event was a great success, with excellent presentations on how KNX is leading the way to a smarter and more secure way of living.

Contact: *Ineke van Erp | info@knx.nl | www.knx-professionals.nl*

KNX brings the people together

Russian Plugfest

RUSSIA KNX Userclub Russia and Messe Frankfurt organised four Plug-Fests all over Russia. With more than 800 participants in total, the Russian KNX community can not only marvel at a major achievement, but consider themselves to be at the forefront of technical developments. Special thanks go to the ten KNX members who helped to make this event unforgettable.

Contact: *Dmitry Sass | dmitry.sass@knx-user-club.ru*
www.knx-user-club.ru

New devices for interested audience

Smart Technology Awards

SPAIN The Smart Technology Forum 2019 incorporated the Smart Technology Awards, which crowned the best smart home and smart building projects in Spain from among 20 submissions. The winner was once again a KNX project, which this time highlighted the flexibility of KNX by combining it with voice control assistants.

Contact: *Michael Sartor | michael.sartor@knx.es*
www.knx-professionals.es

Congratulations to the winner

First KNX Userclub in Africa

TUNISIA KNX Association is proud to announce its first KNX Userclub in Africa – KNX Userclub Tunisia. With almost ten members from various direction-giving institutes and companies, KNX Tunisia is already busy shaping the marketing in Tunisia and beyond, with KNX training having been identified as a key to success. Adding to this exciting news is the fact that more African countries are following the example of Tunisia and are about to join the ever-growing KNX community.

Contact: *Amin Messaoud | amin_messaoud@yahoo.fr*

KNX Association welcomes
KNX Userclub Tunisia

ETS eCampus available in 18 languages

Since its contents have been updated to ETS5, the ETS eCampus has once again proven a great success. Thousands of new users have joined this free online training, making it at the same time a unique community of ETS5 students. The tool is available in Chinese, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Italian, Japanese, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish and Turkish.   *https://my.knx.org*

New Training Centres

2CTRL ApS
Denmark
simon@2ctrl.dk
www.2ctrl.dk

Brno University of Technology, Department of Electrical Power Engineering
Czech Republic
batora@feec.vutbr.cz
www.vutbr.cz

Casa Domotic SPRL
Belgium
quentin.pierre@casadomotic.com
www.casadomotic.com

Centrum Automatyki Budynkowej Paweł Linard
Poland
p.linard@knx-polska.pl
www.knx-polska.pl

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https://esnord.dk

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FEGA & Schmitt Elektrogroßhandel

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Guangzhou Letour Life Technology Co.,Ltd.

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Jung Korea Electric Co., Ltd

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https://jung-korea.com

Kabouni Electrical Engineering

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www.kabouni-elec.com

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https://matt-massimo.com

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elmarchoum@gmail.com
www.knx-training.ma

Merkesystem AS

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www.merkesystem.no

Mirage Group

Tunisia
amin_messaoud@yahoo.fr
www.miragegroup.pro

MNT Smart Home Schulungszentrum

Austria
office-mnt@gmx.at
https://knxschulung.pro

KNX National Group Japan

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www.ojeaelectronics.ch

Siemens Smart Infrastructures
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david.thurow@siemens.com
www.industry.usa.siemens.com

smart training center of iran
Iran, Islamic Republic of
stcenter.ir@gmail.com
www.stcenter.ir

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www.srcglobal.com.my

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www.termicont.hu

V. KAFKAS S.A.
Greece
anmichalis@yahoo.com
www.kafkas.gr

KNX books now available as ebooks

Until now, the KNX books were only available in
paper format. Due to the number of smartphones
and tablets used worldwide, KNX Association
offers now most of its books in ebook format like
KNX Handbook, Basic Course and
Advanced Course. The ebooks are
available via the Amazon website.

If you want to see a list of the KNX books,
have a look on this link:

https://my.knx.org/en/shop/ebooks

New Scientific Partners

Cooperativa Sociale Nuova Scuola a r.l. – Liceo Leopardi

Italy
knx.leopardi@gmail.com
www.istitutoleopardi.lecco.it

Hochschule Furtwangen

Germany
gmi@hs-furtwangen.de
www.hs-furtwangen.de

IPM – Hochschule Mannheim

Germany
s.haupt@hs-mannheim.de
www.ipm.hs-mannheim.de

Istituto Professionale Statale I.A. Pacinotti

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www.ipsiapacinotti.it

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juergen.rossmann@rif-ev.de
www.rif-ev.de

Universidade de Coimbra

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vgraveto@dei.uc.pt
www.uc.pt/fctuc/dei

Università di Cagliari

Italy
ricciu@unica.it
www.unica.it
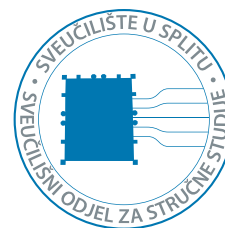
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University of Warwick

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https://warwick.ac.uk

GET STARTED WITH KNX

KNX
Smart home and building solutions.
Global. Secure. Connected.

KNX.ORG

Get started with KNX

Are you looking to expand your knowledge about KNX? "Get started with KNX" offers an overview of the various training options, accompanying material and identifies how teaching materials and methods can effectively be used in order to increase knowledge about KNX. Find all info at

https://start.knx.org

ZVEI Kolloquium in Frankfurt

GERMANY The ZVEI Kolloquium in Frankfurt was another highlight for the German KNX community. The biggest KNX players gather on one spot and give an exclusive outlook on the upcoming developments in the market. The various presentations furthermore perfectly underlined that the future belongs to KNX and IoT. With this perfectly organised event, the German KNX community is looking forward to a bright future. *Contact:* www.knx.org

Biggest German Smart Home gathering

KNX @ Austrianskills

AUSTRIA Almost 400 competitors were participating at Austrian-Skills, held in Salzburg. Thanks to the many advantages KNX delivers, the choice for the used technology for the skill of Electrical Installation was immediately made for KNX. KNX Association sincerely congratulates the winners Stefan Prader (Gold Medal), Stefan Bader (Silver Medal), Florian Riss (Bronze Medal). *Contact:* www.knx.org

Highly motivated participants

KNX Japan Forum putting focus on IoT

JAPAN With around 100 participants, KNX Japan organised its annual KNX Forum. Highlight was the guest presentation by Dr. Takashi Akimoto, President of the Association of Building Engineering and Equipment. The topic of highest importance, even in a country as advanced as Japan, is and will be IoT. Once again, the Japanese KNX Forum proved the point that KNX is again a step ahead on a global scale. *Contact:* www.knx.org

Attentive audience at the KNX Forum

Annual Meeting KNX Swiss

SWITZERLAND KNX Swiss invited to the Annual National Meeting 2019 in Zug, Switzerland. The KNX Secure presentation by Mr. Hänel was only one of the many highlights, which was witnessed by more than 100 participants. KNX Association would like to congratulate KNX Swiss for this outstanding success. *Contact:* www.knx.org

The KNX Swiss Tag kicking off

KNX Professionals Germany at eltefa

GERMANY eltefa, the biggest German fair for the electrics industry, was held for the 20th time last year. The Stuttgart fair could again count on the presence of the KNX Professionals Germany with a booth showing new KNX products and solutions. The booth was very well visited, with particular interest for the free ETS lottery held at the stand. ***Contact:*** *www.knx.org*

Selection of the lottery winners

KNX Czech Republic at AMPER 2019

CZECH REPUBLIC KNX Czech Republic had a remarkable performance at AMPER 2019 in Brno from 19th – 22nd of March. Next to a busy booth, KNX Czech Republic also hosted their annual National KNX Award Ceremony, which was again a pool of emotions. Congratulations from the worldwide KNX community for this outstanding success! ***Contact:*** *www.knx.org*

The KNX booth at AMPER 2019

KNX Romania bringing KNX to Transylvania

ROMANIA KNX Romania hosted its KNX Day in Transylvania and can proudly look at the best possible success! With the latest presentations by KNX as well as heated discussions during the whole event, the passion for KNX has never been higher! No surprise that the next edition of the KNX Day has been scheduled. Follow them on social media, in order to be the first one to learn about the next Romanian KNX Day. ***Contact:*** *www.knx.org*

Participants of the KNX day in Transylvania

KNX at the Smart Building Conference in Madrid

SPAIN The Smart Buildings Congress is the most known event for Intelligent Buildings and technologies in Spain. During the 5th edition of the event event, a delegate from KNX International in collaboration with Taj Kollara, managing director of Total Automation, had the opportunity to present the International Dubai Airport, one of the biggest projects in Dubai made with KNX. ***Contact:*** *www.knx.org*

Marketing Manager Casto Canavate presenting

45th WorldSkills Competition in Kazan under the star of KNX

RUSSIA 40 nations gathered at the 45th edition of the WorldSkills Competition in the skill of Electrical Installations. The world's best competitors underlined again why they were chosen to compete against each other. The results were the most likely best installations concentrated at one place. Therefore, KNX is once more proud to be the chosen technology for the world's leading skill competition.

Contact: www.knx.org

The world relying on KNX

KNX at SIBT 2019 – A Great Sign of KNX Growth in China

CHINA At the Shanghai Intelligent Building Technology fair, 31 KNX members exhibited at the KNX booth demonstrating their newest KNX products and solutions. The presence of KNX was never better in the Chinese market. The KNX Seminar during the fair was again the main highlight. Hosting high-class senior speakers, the agenda contained first-hand impressions of the smart home and building market.

Contact: www.knx.org

A big crowd at the SIBT KNX booth

International KNX Training Centre Conference 2019 in Stresa (Italy)

ITALY This year's Training Centre Conference was attended by more than 90 representatives from various KNX training centres/member companies. Some of the main subjects were the MyKNX training centre tool / training documentation updates, the challenges with regard to KNX Secure training, ETS Professional and ETS Inside. In the afternoon, 10 KNX Italian member companies showed their product novelties. *Contact: www.knx.org*

All present Training Centre representatives

Hi-Tech Building Russia lifting KNX

RUSSIA If one has ever thought that KNX was not successful in Russia, then they must have missed the performance of KNX at Hi-Tech Building in Russia! Underlining once more its leading role in the market, KNX exceeded all expectations. The visitors once more confirmed that smart homes require KNX. After concluding the 3-day event, KNX Association is looking forward to the next shows in Russia.

Contact: www.knx.org

Hi-Tech one of the highlights in Russia

KNX connects worlds

JAPAN | SPAIN The Japanese Association for Building Engineering and Equipment (ABEE) visited Barcelona to learn about the European situation in regards of smart homes and smart buildings. Together with KNX Spain, ABEE's delegates received a presentation about KNX IoT and its linking to sector coupling. Although Japan is known for its technological advancements, KNX was able to surprise with its strategy. *Contact: www.knx.org*

Building bridges between Spain and Japan
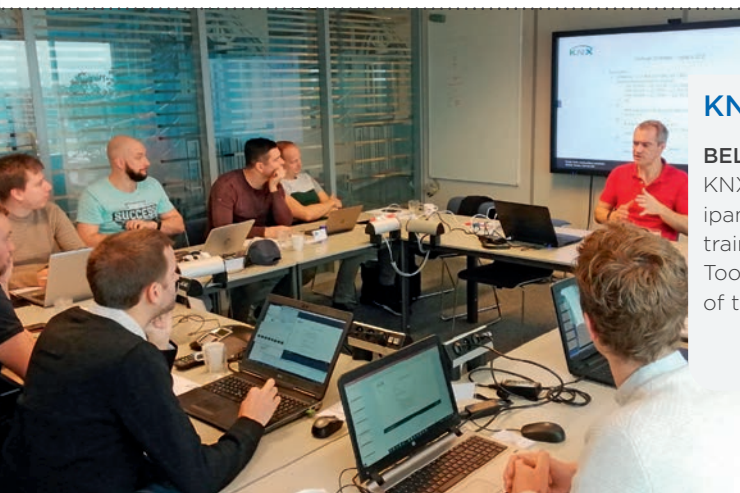
KNX Manufacturer Tool Workshop

BELGIUM The 1st Manufacturer Tool Workshop, that took place at the KNX Association offices, ended on a high note with all the participants satisfactorily finishing the proposed practical exercises. The training focused on the KNX development workflow (Manufacturer Tool › ETS › Device). Interested KNX Members in upcoming editions of this workshop, please contact Jesus Arias at jesus.arias@knx.org. *Contact: www.knx.org*

The workshop at the KNX Associations headquarters

The future belongs to KNX

CHINA KNX China proudly supported the "2019 National Machinery Industry Vocational Education Skills Competition". 52 groups from 32 colleges gathered at Nanjing Technical College and Kaifeng Technician College to compete in the discipline of Electrical Engineering. KNX was the chosen technology. The choice underlined that KNX is also suitable for competitions and training. *Contact: www.knx.org*

A strong community

KNX Training presented in Cameroon

CAMEROON Institut TransEnergie organised a KNX introduction seminar for technical and non-technical minds to learn about KNX and work out if it's right for their career and business. The workshop was held as part of the 1st International Conference on Sustainable Energy and Climate in African Municipalities (SECAM 2019, www.secam-conference.org), at "Ecole Nationale Superieure des Travaux Publics" in Cameroon. *Contact: www.knx.org*

Cameroon is ready for KNX

KNX at Smart City Expo World Congress

SPAIN The Smart City World Congress in Barcelona was the show-place for a direction giving conference at which KNX could not be missed. Franz Kammerl, President of KNX Association, highlighted, how smart cities face a path of "big project" obstacles, with smart buildings creating the foundation. It was clear that KNX can not only help to overcome obstacles but actively shape a better future.

Contact: www.knx.org

Franz Kammerl, President of KNX Association

Tunis hosting KNX Training

TUNISIA KNX Training found its way to Tunis, the capital of Tunisia. At NATEG 2019 (North American and Tunisian Engineers Group), the certified KNX Training Centre Mirage Group was present with a booth. 700 engineers assisted to this event as well as the minister of education, scientific research and the minister of commerce and industry. Next steps are in preparation, such as the setting up of a KNX Userclub. *Contact:* www.knx.org

The booth at NATEG 2019

KNX Training in Morocco

MOROCCO Algeria, Egypt, Cameroon, South Africa, Tunisia... the list of newly certified KNX Training Centres in Africa is growing exponentially. Since 2019, KNX is also proud to welcome the next KNX Training Centre in Morocco, which successfully conducted its first training in Casablanca. KNX Association congratulates all participants and wishes good luck for your professional and personal future!

Contact: www.knx.org

Successful KNX Training in Morocco

#KNXTrain event in Egypt

EGYPT When it comes to KNX training, Egypt can also now proudly show itself as a country, actively promoting and teaching KNX. With various #KNXTrain events and dedicated workshops, the certified KNX Training Centre ELEK-Egypt emphasised that KNX is not only a technology for Egypt, but the future for all smart homes and smart buildings in Egypt. *Contact:* www.knx.org

The first of many events in Egypt

Events and Fairs Schedule

Light + Building 2020
8. – 13. 3. 2020
Frankfurt (Germany)
The world's leading trade fair for lighting and building services technology.
https://light-building. messefrankfurt.com

Expocomfort 2020
17. – 20. 3. 2020
Milan (Italy)
MCE is an event that symbolizes the fullest synthesis of housing comfort in the future.
www.mcexpocomfort.it

Nordbygg
21. – 24. 4. 2020
Stockholm (Sweden)
HVAC and construction fair.
www.nordbygg.se

Lightfair 2020
5. – 7. 5. 2020
Las Vegas (United States)
World's largest annual architectural and commercial lighting trade show and conference.
www.lightfair.com

Tektónica 2020
6. – 9. 5. 2020
Lissabon (Portugal)
The largest Portuguese Building and Construction Fair.
https://tektonica.fil.pt/

Fachtagung Gebäude 4.0
19. – 20. 5. 2020
Munich (Germany)
Symposium about securing quality in the life cycle with building automation.
www.tuvsud.com/de-de/ veranstaltungen/is-events/ fachtagung-gebaeude-40

Eliaden 2020
26. – 28. 5. 2020
Lillestrom (Norway)
The industrial event where the entire electrical engineering industry will meet up.
www.eliaden.no

Guangzhou Electrical Building Technology 2020
9. – 12. 6. 2020
Guangzhou (China)
Asia's premier platform for the electrical engineering, building and home automation markets.
https://guangzhou-electrical-building-technology.hk.messe-frankfurt.com/guangzhou/en.html

Facilities Integrate 2020
12. – 13. 8. 2020
Auckland (News Zealand)
The NZ trade exhibition for the facilities management and system integration industries.
www.facilitiesintegrate.nz

Integrate 2020
19. – 21. 8. 2020
Sydney (Australia)
Australia's largest industry event for AV and system integration.
https://integrate-expo.com

Shanghai Intelligent Building Technology 2020
2. – 4. 9. 2020
Shanghai (China)
Event that aims at brand building and invites professional buyers.
http://shanghai-intelligent-building-technology.hk.messefrankfurt. com/shanghai/en/visitors/welcome.html?nc

IFA
4. – 9. 9. 2020
Berlin (Germany)
International fair for consumer electronics and home appliances.
https://b2b.ifa-berlin.com

Interlight 2020
14. – 17. 9. 2020
Moscow (Russia)
International Trade Fair for
Decorative and Technical Lighting,
Electrical Engineering, Home and
Building Automation.
https://interlight-moscow.ru.
messefrankfurt.com/
moscow/en.html

energetab 2020
15. – 17. 9. 2020
Bielsko-Biala (Poland)
The largest energy fair
in central Europe.
www.energetab.com

EuroSkills 2020
16. – 20. 9. 2020
Graz (Austria)
Europe's largest international
skills competition.
https://euroskills2020.com

30th Anniversary of KNX
20. 10. 2020
Worldwide
International KNX event
to celebrate 30 years of KNX.
www.knx.org

Hi-Tech Building 2020
27. – 29. 10. 2020
Moscow (Russia)
The most important annual event
for home and building automation
in Russia and the CIS.
https://en.hitechbuilding.ru

belektro 2020
3. – 5. 11. 2020
Berlin (Germany)
Trade Fair for electronics
and lighting.
www.belektro.de

Matelec 2020
10. – 13. 11. 2020
Madrid (Spain)
International Trade Fair for the
Electrical and Electronics Industry.
www.ifema.es/en/matelec

Get Nord 2020
19. – 21. 11. 2020
Hamburg (Germany)
Trade fair for Electronics, Sanita-
tion and HVAC.
www.get-nord.de

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