PRESS RELEASE

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KNX HACKATHON FINALISTS DEMONSTRATE SUSTAINABILITY WITH KNX AT KNXPERIENCE 2023

BRUSSELS, 12 OCTOBER 2023 – *Climate change is a pressing issue that affects us on a global scale. In a world that is facing increasing environmental challenges and energy crises, KNX technology has the power to be a positive catalyst in achieving a more sustainable world and a reduced carbon footprint. The KNX Community is continuously proving itself to be very competent in using KNX in numerous ways, by carrying out remarkable KNX projects worldwide and creating innovative KNX solutions and products. By opening applications for the KNX Hackathon, the bright minds of the KNX Community could enter excellent ideas, solutions and products to show proof on how useful KNX can be to achieve increased energy efficiency in homes and buildings. Five finalists were selected to present their entry at KNXperience 2023. Luc Vercruyssen from CDI Projects won the KNX Hackathon with his Luka Energy Manager.*

Joining forces to create a more sustainable future with KNX

Sustainability has been one of the most important topics for KNX. Thanks to its ever-evolving features, versatile applicability and broad interoperability, the world's leading technical standard for smart homes and buildings has been the foundation for the most innovative and ground-breaking energy management solutions in the residential and commercial building sector. And while KNX is already widely recognised for improving people's lives and positively impacting the climate, the KNX Hackathon has once again demonstrated how powerful KNX technology can be when it comes to energy savings and to the reduction of the carbon footprint of smart homes and buildings.

Proving that KNX makes an impact in saving energy and reducing carbon footprint emissions

The competition was open to anyone from all over the world who is able to demonstrate how to save energy using KNX. Any individual or team could participate, including students, hobbyists, professionals, scientific partners, manufacturers, etc. From all received entries, a jury of KNX experts selected five finalists with excellent solutions or projects that use KNX to achieve increased sustainability. The finalists had the opportunity to convince the jury and the community with an interview about their project during KNXperience on the 26th of September. Based on his convincing arguments how energy could be saved with KNX, Luc Vercruyssen from CDI Projects was selected as the winner of the KNX Hackathon.

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A SUMMARY OF THE WINNER AND FINALIST ENTRIES

Winner: Luka Energy Manager by CDI Projects

The Luka Energy Manager can typically increase the consumption of self-generated power in a home with a KNX installation to 90%. LUKA connects to the KNX network via a KNX/IP router and takes advantage of KNX switch actuators and KNX gateways in order to measure energy flows and to control technical installations such as EV chargers, PV arrays, heat pumps, home batteries and other appliances. It also uses web services such as weather forecasts and electricity tariffs to collect all the information required to optimise energy flows. Using KNX to communicate with smart home components ensures a future-proof, flexible and reliable system. By using standard off-the-shelf KNX interfaces, no software development is necessary to control these devices.

xxter Smart Energy Manager by xxter

xxter developed the KNX-based Smart Energy Manager (SEM) that not only monitors energy usage and production, but smart-manages it too. Based on the energy production forecast, which can be automatically predicted with impressive accuracy based on factors such as the weather forecast, dynamic pricing information and the customer's typical needs, the best schedule is created to minimise energy consumption from the grid, thereby reducing costs and the carbon footprint. An example of such scheduling would be to charge an electric car when there is a lot of solar energy available, or when the spot (hourly) electricity prices from the supplier, are low. The xxter SEM can also manage home batteries automatically in order to further improve the efficiency of self-produced energy.

EMergy'nX: Energy Management Merging KNX & IoT for Planetary Emergencies to Reduce CO2 by Can'nX

Can'nX presented a tailored solution using PV panels and storage combined with their Can'nX Emergy'nX energy optimisation software. Hybrid inverters for PV panel production, combined with energy storage batteries were integrated into the existing KNX installation comprising hot water tanks, HVAC, pool filtration, pool heat pumps and electric vehicle charging stations. The energy optimisation software allows automatic control of major power consumers to be finely tuned, with priority orders chosen by the occupant, all without compromising their comfort. Based on fluctuating energy costs and PV production levels, it finely manages battery charge and discharge cycles and automatic operation of necessary equipment to create energy surplus, thereby minimising usage during periods of high electricity pricing.

Energy Efficiency Through Innovative BA Concept implemented with Eisbaer Software by René Rieck

LOCAL+ is an initiative involving architectural students from Aachen University of Applied Sciences. Its design challenge was to develop a building that produces excess energy through innovative and forward-looking systems: a so-called plus-energy house that is almost self-sufficient. A central hydrogen system, interacting with other components, was specified as the main source of energy, promising up to 65% self-sufficiency. Other components include an underground ice store, PVT collectors and a heat pump. In practice, the hydrogen system was dispensed with due to a short service life, and the ice storage facility was reduced in size due to underground construction constraints. Apart from these site-related limitations, the system was implemented in line with the plans and

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uses KNX devices connected via KNX IP Secure to the EisBaer Software PV Manager. In this project, EisBaer software provides the overall control solution for all of the services, including the HVAC, water temperature and energy management.

Project Sharlynsland by Lynn Bayer & Sharon Rischard
In 2019, the mission was to create a self-sufficient home. This was a gradual process that involves monitoring and analysing energy usage, integrating smart home technologies and using renewable energy sources such as solar panels. A crucial part of this project was using KNX automation and monitoring systems to improve how energy was used. By continuously exploring and expanding the automation and monitoring capabilities, they have transformed their home into a smart and efficient living space. This journey towards more specific automations and monitoring has empowered them to take greater control of energy usage and sustainability efforts.

The winner of the KNX Hackathon will receive a trophy and prize money of 3000 EUR and was invited to present the winning solution during the KNX Scientific Conference in Barcelona on the 10th of October. Until the end of October, you can still watch the KNX Hackathon finalists' sessions on demand at https://knxperience.knx.org

PHOTO MATERIAL

Printing of pictures permitted

Picture
KNX Hackathon 2023

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About KNX

KNX Association develops and promotes the KNX standard to offer smart home and building solutions on a worldwide scale, ranging from lighting and blind control to various security systems, heating, ventilation, air conditioning, monitoring, alarming, water control, energy management, smart metering as well as household appliances, audio/video and many more. All these building applications can be configured with a single, manufacturer independent design and commissioning tool (ETS), with a complete set of supported communication media (TP, PL, RF and IP) as well as an extension of the KNX technology towards the Internet of Things (KNX IoT). KNX is approved as a European (CENELEC EN 50090 and EN ISO 22510) and an International standard (ISO/IEC 14543-3). This standard is based on more than 30 years of experience in the market. Over 500 manufacturers worldwide from different application domains have more than 8,000 KNX certified product groups in their catalogues. The KNX Association has partnership agreements with more than 100,000 installation companies in 190 countries.