Economical and efficient buildings, municipalities, cities, industry and agriculture

Solutions of IQRF Alliance members

On February 22, 2022, the IQRF Alliance organized a hybrid conference on solutions that have already been implemented by members of the alliance. Let us mention in particular the areas of **lighting, heating, sanitary technology, smart wireless locks, and sensors**.

Some of the presenters and guests were personally present in the premises of the Center of the City of the Future at CIIRC in Prague, some participated remotely via an online conference.

The solutions concern **buildings, municipalities, industry, and agriculture**. In all areas, the solutions focus on savings, efficient use of resources, safety, but also on the comfort of life. These are reliable, proven projects that can be used by other people from various fields of life. If you have a question about a possible solution, contact us at the contact below, **we will provide you with a free consultation and together with partners, we will propose a suitable solution**.

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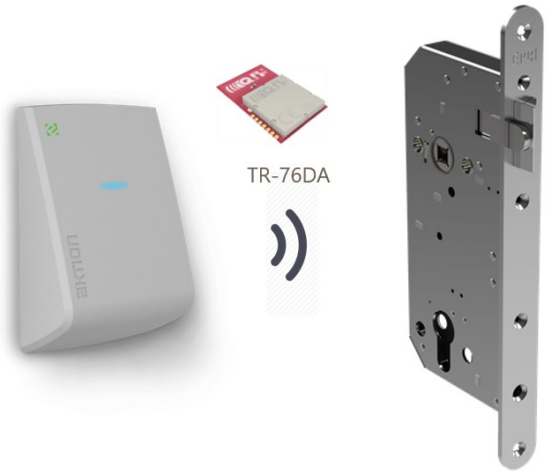
Photo gallery...

Wireless locks

Lubomír Šmíd from EFG CZ, which is a new member of the IQRF Alliance, introduced a new product, **wireless locks**.

Wireless locks using IQRF technology are easy to install, only the existing door lock is replaced with a new wireless lock with minimal intervention in the door construction. IQRF technology uses secure transmission using the industry standard AES-128.



Near the door, there is a fingerprint reader, card reader or keyboard for entering the code, or a camera. This reader communicates via Ethernet with a central application that runs on a server either in a building or in some Internet storage, in the cloud. The application evaluates whether the person who tries to enter has permission to enter. If so, a control signal is sent to the reader, which wirelessly sends a command to a lock to open the door. You can choose from locks that have a blocked needle or a needle and a bolt.

These are electromechanical locks. The lock communicates with the access control sensor every second and unlocks when commanded to open.

Lock control and wireless communication run on batteries. Thanks to the economical communication mode, the company guarantees 90,000 door opening cycles, which in reality means many years of operation without battery replacement. Li-ion batteries with a capacity of 1.2 Ah are commonly used in locks.

The company currently supplies to the Czech Republic and Slovakia.

The recording of the lecture can be found here: https://youtu.be/nrAd_LG_s0s.

Other applications for buildings

Sanitary technics

Smart sanitary technics were developed by Sanela. These are, for example, taps, in which the frequency of use can be monitored, as well as the amount of water consumed, or they can be flushed remotely to prevent the growth of harmful bacteria in the pipeline. Soap canisters are also monitored, so refilling and room cleaning can be adapted. The use of toilets can be monitored similarly.

Sensory

It is advisable to monitor the state of the air in buildings. Sensors measure quantities such as temperature, relative humidity, carbon dioxide, volatile organic compounds, nitrogen oxides, and also very dangerous gases such as carbon monoxide or radon. Representatives of MICRORISC and Protronix presented their sensors.

Temperature and humidity monitoring is essential for food and medicine warehouses, but also for electronics production. The IQAROS system from MICRORISC can be used everywhere. These sensors, along with others, are used by an alliance member, The Cloud Provider (TCPRO), which provides other cloud services such as data analysis, problem prediction, and early warning.

The **IQAROS** system can also be used in farm buildings. A temperature sensor equipped with a stainless steel rod can be inserted into, for example, a bale of straw, hay, or stored grain. If the temperature inside the material rises, it may mean that there is rotting processes inside, for example, due to unremoved moisture. This can lead to spoilage of raw materials or even fires.

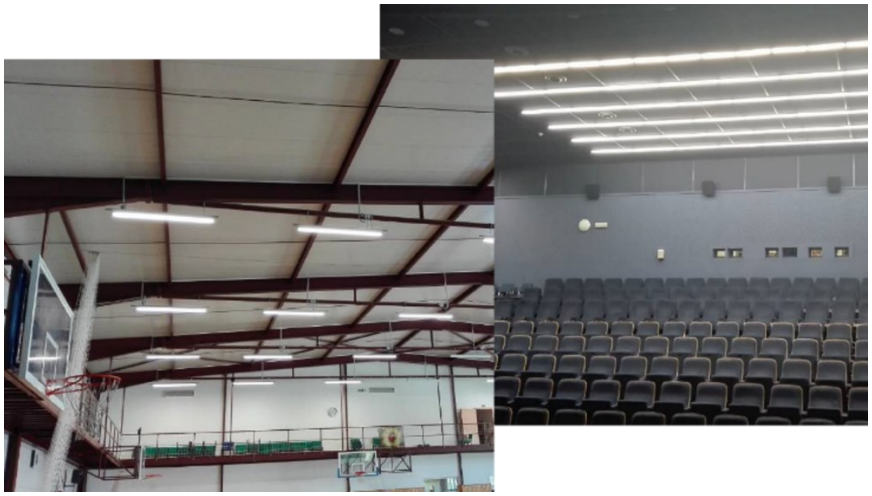
The damage that can be prevented by early detection can be significant. Food can also be spoiled by the growth of some insect pests inside the raw materials. The presence of rodents in warehouses and other farm buildings is also undesirable. Another member of the alliance, ADERA, will help you with DDD problems and can use suitable IoT devices to monitor and eliminate pests.

Heating

At a time when energy is becoming more expensive, it is worth installing remotely controllable, wireless thermostatic heads or remotely controlled infrared heaters. Austyn International is one of the manufacturers that solves this problem. The heating can be optimized with regard to the presence of people or the opening of windows. The company focuses on large buildings such as office complexes, schools, or hotels, as well as on industrial buildings such as production halls, power plants, etc. In the solution portfolio, you will find, among other things, thawing of coal wagons or hot yoga room heating. After the initial analysis, they design a suitable solution and then install everything that is needed, with a guarantee of return on investment.

Lighting

With wirelessly controllable LED luminaires, you can save up to around 80% of electricity, compared to more energy-intensive light bulbs. The control unit in the luminaire is part of the IQRF mesh network, which is locally autonomous and can thus operate locally without any problems, without the use of cloud services. A command for switching on, off, changing the light intensity, etc. is sent to the control unit from the central application, to which the connected light then responds. In addition, the light network can also serve as a backbone network for other devices, such as the above-mentioned air sensors. Today, a large number of light manufacturers use IQRF technology, some of which are members of the IQRF Alliance (DATmoLUX, Radek Pechman, Liteplan, etc.).



Lights can be remotely controlled and monitored by connecting the IoT gateway, which is the main, central element of the lights network, to cloud services that provide remote connectivity. Providers of such services are, for example, Logimic, The Cloud Provider, or IBM.

It may be interesting for LED luminaire manufacturers they can make their lights intelligent, remotely controllable, easily, for example by using DALI bridges or Zhaga or NEMA connectors. These components are offered, for example, by MICRORISC or Nikatron.

Applications for municipalities

Street lights

Savings in the lighting area are an important chapter that municipalities can meet today's savings trends. Compared to energy-intensive lamps, LED luminaires are the right choice in themselves. In addition, with the use of remotely controllable LED lights, municipalities can get various grants.

The IQRF Alliance offers its free consultancy services to municipalities in the field of integration projects. We will discuss your needs, problems, and requirements with you, and in cooperation with experienced members of the alliance, we will propose a suitable solution. The subsequent implementation of such a project is then only a matter of agreement.

Outdoor sensors

Ozone concentrations, noise, dust, UV radiation, etc. are also commonly measured in the outdoor environment. A sensor for measuring the quality of the outdoor environment is available, for example, at Tesla Blatná. In terms of integration, these sensors are interoperable with other IQRF devices and, for example, a network of lights can be used for data transmission.

Safe bike paths

Bicycle paths can be functionally and economically lit. A member of the alliance, the company DATmoLUX, implemented a project to light the bike path in the park. The lights normally shine with minimal intensity, which saves electricity and at the same time brings a certain sense of security to those approaching the path. As soon as the detector detects that there is a person on the path, the relevant part of the path lights up in full. If a bike path crosses the road somewhere, the solution can be combined with the above-mentioned solution of a protected crossing and thus prevent collisions between cyclists and cars. You don't need to install retarders on the road if you alert the driver to an approaching cyclist in another suitable way.

Protection against flash floods

You can provide warnings about rising water levels with ultrasonic water level detectors. JoTio Tech has successfully implemented a pilot project and offers municipalities its solution.

This can prevent significant losses to private and municipal property or even to lives in the event of local floods.

Embankment monitoring

The ZAT company presented its project concerning the **guarding of embankments along the railway** line. Due to rains and subsequent erosion, the material that strengthens the slope along the railway may wash away, the embankment may fall and deviate, which may lead to a train derailment and consequent economic or even human losses.

Wireless tilt sensors are installed into the slope, from which data is regularly obtained. Photographs of the same places at different times are also available for optical comparison. If there are significant deviations, the system sends an early warning.

Contact

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