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ZENNER and Bosch Connected Devices and Solutions GmbH are developing a Smart Parking complete package together.

Saarbrücken, Reutlingen. October 2020. *ZENNER International GmbH & Co. KG and Bosch Connected Devices and Solutions GmbH have worked in close cooperation for many years in the field of IoT. Within the scope of this cooperation, Zenner is developing a complete solution based on the Parking Lot Sensor* from Bosch Connected Devices and Solutions GmbH. *Both partners bring their own specific expertise to the table, in order to considerably simplify the management of parking spaces for municipalities with Smart Parking.*

Car drivers in big cities spend an average of over forty hours each year behind the wheel just searching for parking spaces. Around 30% of inner city traffic and therefore related CO2 emissions is down to drivers trying to locate a parking space. Digital solutions have long since solved the question as to where the next free parking space is located, in a way much quicker than ever before.

Time savings are gained through modern Internet-of-Things technologies. In this case, sensors are integrated into a networked complete mobility solution via LoRaWAN wireless technology (Long Range Wide Area Network). The wireless technology enables data to be collected from sensors via gateway in a large radius and transmitted to intelligent traffic management systems. Parking spaces can be monitored by being fitted with the Parking Lot Sensor, a floor sensor from Bosch Connected Devices and Solutions GmbH. ZENNER contributes to the corresponding network infrastructure in the form of gateways as well as the ELEMENT IOT backend system, via which data is managed, visualised and made available via the app. “It’s really encouraging that our existing cooperation has now reached the next level. The existing cooperation has proven successful for both parties”, reports René Claussen, Managing Director IoT and Digital Solutions at ZENNER.

In practice, the solution is rather simple: Whenever the parking space becomes free or is taken, the respective sensor transmits the information to one of the installed gateways. The information regarding the availability of the parking space lands in the backend of the mobility system, where it is processed and made available to end users via the navigation system, smartphone app or website. This allows car drivers to specifically head to the next available parking space. Information can also be stored in the backend system regarding the kind of parking space involved, for example, “standard” parking space or special parking spaces (for women, families or disabled drivers/passengers, E-charging station).

A particularly interesting application for operators of public charging points is the monitoring of E-charging stations. E-car drivers, who need to charge their vehicles are often faced with the problem that standard vehicles block the parking spaces with charging infrastructure in an unauthorised manner and that E-cars remain in the parking spaces after being fully charged. By linking information about whether the E-charging station is in use and the availability of the parking space on an IoT platform, the question can be directly answered and reliable real-time information can be provided regarding available and ready to use E-charging parking spaces. What’s more, the Smart Parking solution can also be used to monitor the escape and rescue routes of public facilities.

LoRaWAN offers three advantages as the transmission path: Firstly, the network works in an extremely energy-efficient manner, meaning that the sensors can be operated with batteries over long periods involving minimal maintenance. Secondly, the comparably low-frequency network technology can even reliably reach challenging interior spaces, such as the basement of multi-storey car parks. Thirdly, thanks to the LoRaWAN range, coverage of large areas with a few gateways is a cost-effective option.

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For René Claussen, Smart Parking projects provide a good introduction for municipal utilities to the Smart City topic: “Pilot projects, which we have already performed as an IoT full-service provider with municipal partners, generate an increased level of motivation and enthusiasm. This is not least attributable to the fact that projects can be started with relatively low costs and provide tangible results in no time at all”. Jonas Böttinger, Project Manager at Bosch Connected Devices and Solutions GmbH adds: “The need to network and digitalise cities and municipalities is at the heart of our work. Plenty of successful projects with economic and environmental protection objectives, already reveal the tremendous potential in networking the existing infrastructure. I’m looking forward to seeing how more and more partners in this field with specific projects create added value for those who live there and for all of us.”

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Image material

Image caption: If the parking space becomes free or is taken, the parking sensor transmits the information to the IoT gateway (source: Bosch Connected Devices and Solutions GmbH).