Sensor data on iPhone via Blynk

Transferring data to users in a useable way

Introduction and Challenge

Nowadays we are surrounded by intelligent devices with all kinds of technologies in them. These devices are not only equipped with huge computational power, but also with connectivity and sensors. They are able to monitor and track our environment and parameters such as temperature, humidity, acceleration, light and more. The challenge is to create applications which present this data to the users and systems in a reasonable and useable way.

Approach

As a member of Automotive Electronics (AE), Bosch Connected Devices and Solutions GmbH (BCDS) serves the new market for the Internet of Things (IoT). We offer compact electronic devices, comprehensive software and end-to-end solutions in many fields of application. In 2016, BCDS introduced a not-so-traditional IoT-Cross Domain Development Kit: the XDK 110. The idea was to simplify IoT prototyping and to support users in developing their own product ideas as quickly as possible.

XDK is a fully integrated hardware and software product, which includes a Bosch MEMS accelerometer, magnetometer, and gyroscope, as well as humidity, pressure and temperature sensor from Bosch Sensortec. Furthemore it includes a microphone from Akustica and a digital light sensor from a partner. Bosch Sensortec and Akustica, are fully owned subsidiaries of Robert Bosch GmbH specializing in sensor MEMS solutions and microphones bringing digital awareness to new consumer products. The kit includes Bluetooth and WiFi connectivity, a microcontroller, integrated antennas, a micro SD card slot and a rechargeable battery.

Since the XDK is an IoT prototyping tool for infinite use cases, Bosch Connected Devices and Solutions created an online competition looking for innovative use cases with the XDK in the official online community. It should be a new approach on the software and application level, but also may include hardware add-ons. During this competition, the use case “sensor data on iPhone via blynk” was submitted.

Use Case

> *"The idea was to create an application, which brings the sensor data measured by the XDK (like temperature, humidity, yaw rate, light, ...) on a smartphone, which was in this case an iPhone."*
>
> **Achim Kern,** *Software Developer*
> *KeHo Software Entwicklung & Vertrieb*

Therefore an application needed to be installed on the iPhone which was able to display all the data coming from the XDK. In this case, the Blynk platform was used to manage this. Blynk is a platform, which offers different iOS and Android apps with a ready-to-go dashboard to display sensor data on the iPhone over the Internet. It's a digital dashboard, which allows to build a graphic interface for a project by simply dragging and dropping widgets. It's easy to set up within 5 minutes.

Since there was no "Bosch XDK" library ready for the Blynk platform, it was necessary to connect the XDK with the Blynk platform first. Therefore the XDK used a particle photon node as its gateway to Blynk via MQTT (Message Queue for Transport Telem.). This way the XDK was able to work with the Blynk platform. Every time the XDK would send data from its sensors via MQTT over the particle photon node, the request was taken by the Blynk application to show the data on the iPhone. This way the sensor data of the XDK can directly appear on the iPhone through the installed app.

Bosch Connected Devices and Solutions Role

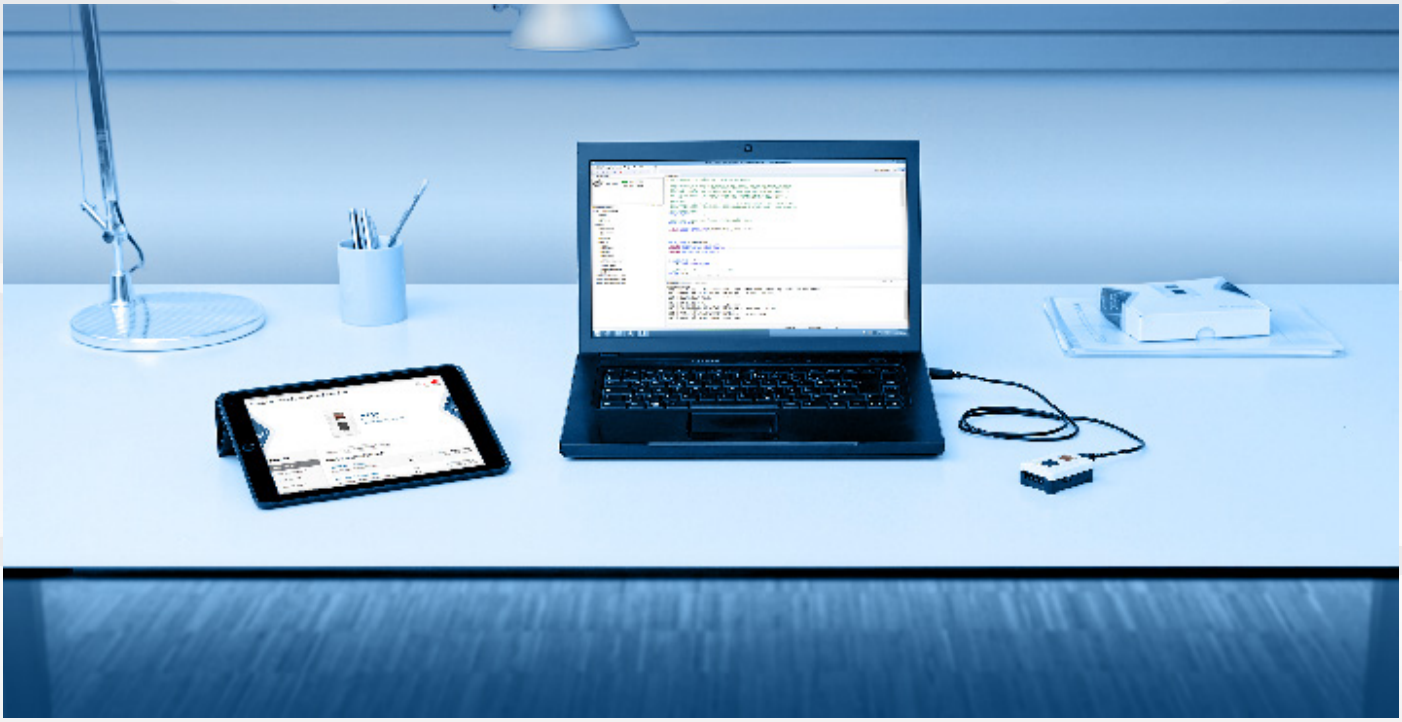
As an innovative company, BCDS can draw on extensive software solutions experience and a comprehensive range of sensors from Bosch Sensortec and microphones from Akustica. By combining our expertise with partners from different business entities, we enable new value propositions and new ways of value creation.

The XDK enables developers to measure and optimize the environment and improve living comfort. It monitors ambient conditions such as air quality, light and noise intensity. The XDK meets this need, in a small form factor with three-year battery life, making it easy to position anywhere.

BCDS empowers companies to turn their ideas and concepts into reality and letting the users interact with the measured data on useable interfaces.

Conclusion

It has never been easier than it is today to monitor the environment with the help of the integrated sensors in devices. Bosch Connected Devices and Solutions makes this even easier by offering the possibility to develop IoT applications with the XDK. It helps you along the way by supporting you with an online community and mass-tailored solutions for your needs.



About Bosch Connected Devices and Solutions

Bosch Connected Devices and Solutions GmbH is based in Reutlingen, Germany and is a 100% owned subsidiary of Robert Bosch GmbH. As an innovative company, it serves the new market for the Internet of Things. We offer compact electronic devices, comprehensive software and end-to-end solutions in many fields of application. Our main businesses are in the areas of Connected Mobility and Industry 4.0 & Logistics! We improve everyday life, increase comfort, security and productivity.

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