



**BOSCH**

Invented for life

## Prototype Faster

### *IoTool Gateway with XDK from Bosch*



#### **Introduction and Challenge**

*The Internet of Things (IoT) is a hit with companies and consumers. It can already be found in everything from health trackers to ovens and everything in between. The market is also expected to grow massively over the next few years. One study states that the number of Internet-connected devices will triple from 2015 to 2020, and over six trillion dollars will be spent on them in that time. Being first to market is key to success here. No one wants to spend years in research and development on a killer app, then find out that everyone has already bought something else. And if you are working on a project with grant money, there is usually a deadline for completing it. Under these conditions, there is no time to waste.*

#### **Approach**

This is where IoTool comes in. IoTool is an award-winning piece of software that connects all kinds of sensors (over 100 currently supported) to a smartphone or embedded device. The collected data is encrypted, stored, displayed, processed and synced directly to the cloud. Supported cloud services include both the IoTool Cloud and the Bosch IoT Cloud via a standardized protocol.

The Bosch Cross Domain Development Kit (XDK) is now fully supported by the IoTool

Gateway software. The XDK contains a sophisticated suite of sensors to collect a wide range of data. This includes sensors for temperature, humidity, acceleration, light, noise levels and more. In addition, the XDK provides many possibilities to expand its functions with other sensors or to connect to other devices.

The team behind IoTool looked at the Bosch XDK and decided they were a perfect fit for each other. IoTool added support for the XDK in December 2016.

## Use Case

The XDK from Bosch is a great tool for prototyping Internet of Things devices. When a team starts to create a new IoT device, they don't want to re-invent the wheel. They might start out with the hardware: the XDK is part of it, but they might need other sensors and devices. And they definitely need a way to collect, upload and evaluate the sensor data. That's where IoTTool comes in.

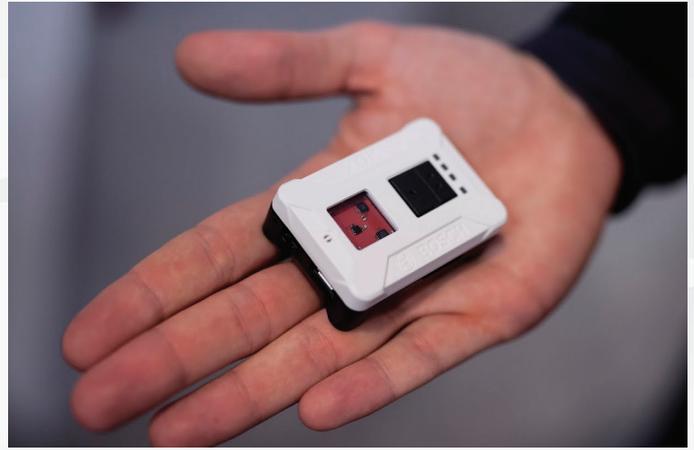
The developer simply connects the XDK to the IoTTool Gateway through a convenient, standardized interface. Data is collected and uploaded to the cloud – the developer can choose between 16 data centers IoTTool provides for use, or any other cloud service the developer wants. Then the developer connects to the XDK using a smartphone. IoTTool takes care of security and compatibility.

If the developer wants to add another sensor or device, IoTTool makes it easy. It is just as convenient to add custom algorithms, customize the user interface, communicate between devices and much more.

One example of the IoTTool and XDK is in the Horizon 2020 initiative. There is a lot of grant money out there to create IoT solutions, but funding is usually only available for about 36 months. No matter what your project seeks to accomplish, you will need to go through several rounds of development and testing. IoTTool and the XDK help you throughout your project by reducing your required investment, the amount of coding you will have to do, and speeding up prototyping.

## The Role of Bosch Connected Devices and Solutions

As an innovative company, Bosch Connected Devices and Solutions (BCDS) can draw on extensive experience in sensors and software solutions. Partners, including Bosch Sensortec and Akustica, show our added value by combining innovative proposals with low barriers to market entry.



The XDK from BCDS offers an all-in-one scalable hardware platform with ready-to-use software. There is no need for component selection, hardware selection, hardware assembly, or deployment of a real-time operating system. Drivers for all system components are included. In addition, BCDS offers the XDK Workbench. This development platform can be downloaded free of charge. Sample applications and a user community are included with the package.

Rather than researching the possibilities and purchasing sensors as the need arises, the XDK's versatile sensor suite covers a range of possibilities out of the box. By giving you everything you need before you know you need it, Bosch helps you handle new scenarios in hours, not days or weeks.



## Solutions and Benefits

The number of Internet of Things devices is expected to triple over the next five years. Compare this to the traditional computer market, where sales have been stagnant over the past decade. Consumers continue to demand more devices to improve their lives. Companies are under pressure to make their devices smarter and more connected.

The IoT Gateway and XDK play a key role in taking ideas from the drawing board to the marketplace. Together they reduce cost for hardware and infrastructure, while reducing time in research and development.

IoT Gateway won first prize in the “Smart Homes” category and second place in “IoT” at the Wearable Technology Show 2016. Its predecessor, SenseView, has an install base of 50,000 users and won “App of the Month” at bluetooth.org, as well as placing as a finalist in the Bluetooth Breakthrough Awards at the Consumer Electronics Show in Las Vegas.

## Conclusion

The IoT Gateway software now supports the XDK. The XDK’s sophisticated suite of sensors and connectivity options provide the cornerstone for Internet of Things products.

IoT Gateway is a cloud-based software system that securely connects the XDK to smartphones and other computer systems. When developing an Internet of Things solution, you need to prototype, test, learn, and only then produce a final product. IoT Gateway helps you get there faster and cheaper. IoT Gateway helps you connect the XDK to smartphones and other sensors. IoT Gateway provides convenient tools for algorithm and interface development.

We at BCDS, with our experience in IoT, are the right partner for sensor-based IoT projects. We increase comfort, security and productivity by enabling new business models for global markets, improving everyday life.

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## 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 and Logistics! We improve everyday life, increase comfort, security and productivity.*

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