Press Release

SensorThings API: Fraunhofer Software Enables Meaningful Communication of Cloud Devices

The Internet of Things (IoT) connects devices like sensors or actuators. In order to take advantage of the information exchange, one has to add a semantic layer, enabling different IoT systems to use and understand the exchanged information. This is what SensorThingsServer supports, an open source software developed by Fraunhofer Institute for Optronics, System Technologies and Image Exploitation IOSB. This software now sees its first commercial use: IoT Systems, Inc., a US-based Industrial IoT company, demonstrates its implementation at AWS re: Invent.

Thus, visitors of the conference will be given first-hand insight into how open software and the standards it is based upon can contribute to the mass adoption of Industrial Internet of Things (IIoT) technologies. SensorThingsServer is an implementation of the open standard SensorThings API and allows for monitoring, controlling and scaling IIoT devices and systems with unprecedented ease.

AWS re: Invent is a cloud conference from 27 November until 1 December in Las Vegas, USA, which is focusing on the Amazon Cloud (AWS = Amazon Web Services) and its applications.

Flexiblity and minimal development effort

According to IoT Systems, the decision to use SensorThings API is based upon various reasons: SensorThings API allows for scalability across different kinds of hardware devices without investing unnecessarily in the development needed to create individualized solutions for every sensor and actuator. Also, SensorThings API can help manage the data from IIoT devices in the AWS cloud or by edge computing (processing data at local servers powered by AWS Greengrass), allowing partners to customize their IIoT management strategy.

As IoT Systems underlines, SensorThings API is the culmination of the Open Geospatial Consortium (OGC)’s 23 years of experience formulating open standards and best practices for the remote collection and use of data, as well as »the API of choice for one of the most respected applied research science organizations in the world’s expansion into the Internet of Things«, making it the best and most robust option

What is the SensorThings API?

SensorThings API is an application programming interface (API) to manage sensors and actuators in the Internet of Things (IoT). It was developed by the Open Geospatial Consortium (OGC), a non-profit founded in 1994. While IoT networking protocols such as MQTT and HTTP are addressing the ability for different IoT systems to exchange information, SensorThings API is addressing the ability for different IoT systems to use and understand the exchanged information.

In 2005, with new developments in sensor technology and wireless Internet connectivity making it possible to place more sensors in more remote locations than ever before, the OGC developed Sensor Web Enablement (SWE) standards to enable sensor and Web-based application interoperability. The SensorThings API is the OGC’s latest expansion of SWE standards in sensor and actuator management.

What is SensorThingsServer?

In order to manage sensors and actuators, the SensorThings API needs a server implementation for use with Web services (e.g. Amazon Web Services) and with on-premises server hardware.

Fraunhofer IOSB built such an implementation to scale their work for the Industrial Internet of Things and released it for public use. The Fraunhofer IOSB SensorThings­Server is licensed under the GNU Lesser General Public License 3.0 and is freely available on GitHub (<https://github.com/FraunhoferIOSB/SensorThingsServer>).

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