Smart Building IoT Reference Kit

Challenges
Employee Safety & Wellbeing, Sustainability, Operating Efficiency

According to research from Verdantix, the top three areas where building owners have concerns are around building occupant wellbeing and productive, maximizing space utilization and improved connectivity and data availability. Their first goal is making everyone safer by monitoring and reporting a wide range of issues, including contact tracing, fire alarms, office air quality, dangerous chemical leakage for industrial buildings and structural integrity. Their second goal is a sustainability program. Technology can be applied to conserve energy usage and reduce waste through predictive cleaning programs. Finally, Building managers can gain key insights into space usage to better manage leasing costs. Conference rooms and desks can be booked and used based on hard occupancy data.

The Semtech & TensorIoT Solution
Smart Building IoT Reference Kit

The Smart Building IoT Reference kit offers customers value out-of-the-box. The kit is priced at $1100 and includes a MiFi hotspot with a pre-paid SIM and 2 LoRaWAN®-enabled gateways from Browan, which are built using FreeRTOS. The kit also includes an array of sensors, including: 5 desk monitors, 2 Grid-Eye® people counting, 2 temperature/humidity, 5 door/window sensors, 5 room occupancy, and 1 leak. The solution is powered by FreeRTOS on the gateway, and connects to AWS IoT Core where data is ingested and sent to Dynamo. From there it is rendered into a Cloud dashboard hosted on S3 leveraging technologies such as AppSync, Amplify and React. The Cloud dashboard renders data using visual graphs that show desk occupancy, room occupancy, ambient temperature and humidity, and leak alerts. The Grid-eye sensor rendering also provides an accurate count of people in a given space.

Benefits

The kit simplifies the process of procuring and connecting sensors into the Cloud by providing a fast, simple, out-of-box experience to allow building managers to gain insights into their space.

Off-the-shelf Solution
No purchasing or provisioning of sensors, or need to connect to corporate network. After connecting, the hardware the sample dashboard immediately renders data.

Extensible
All components within the kit are readily available. Customizable for data to be used with other applications.

Best in Class Power Consumption
Ideal for battery-powered devices in hard to reach locations. Battery life will ideally last the life of the sensor.
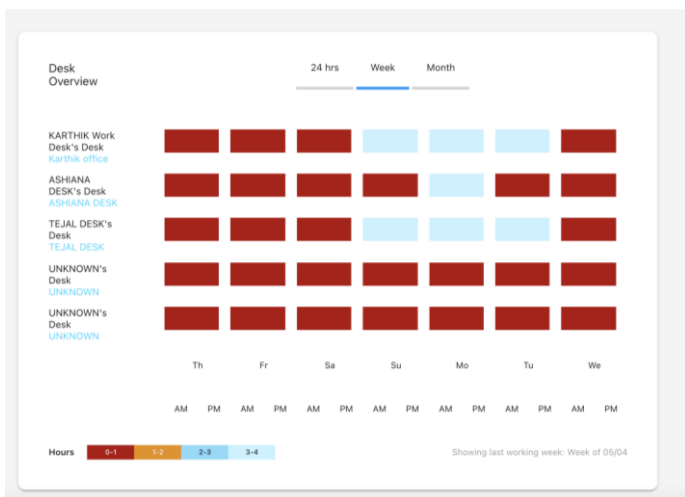
No Dead Spots – Holistic Network Coverage
Users create building-level coverage independent of LoRaWAN public networks or existing building automation system.

Semtech & TensorIoT on AWS

Semtech, TensorIoT and AWS produced a joint solution – a Smart Building IoT Reference Kit – which includes all necessary hardware and connectivity, and a web user interface to deliver a superior out-of-box-solution for building owners looking to experience the power of IoT. The kit enables customers to quickly deploy sensors and gain insight into what is happening in their buildings. The solution utilizes AWS IoT services under the hood, and is easily extensible such that customers can add additional sensors and capabilities on their own or through SI services from TensorIoT.

Features

Space Utilization Monitoring

Leveraging the room, desk and Grid-Eye® sensors, the solution provides building occupancy metrics at hour/date/month. This enables building planners to plan occupancy and focus cleaning efforts on high traffic areas to maintain employee safety while saving on energy consumption.

Environmental Monitoring

The temperature/humidity sensors allow building managers to ensure their tenants have a comfortable ambiance for working. These sensors can be used in conjunction to HVAC integration to optimize energy efficiency. The moisture sensor included with the kit monitors and enables immediate action should a leak be detected, reducing the potential for catastrophic water damage.

Customer Profile & Case Study

Solution

Customers can purchase the kit and deploy the sensors wherever they want to monitor. Once they connect the gateway they can easily login to the dashboard and start to monitor different patterns of usage to determine how to use the data.

Saravana Bhavan

Sarvana Bhavan are a chain of Indian restaurants which are leveraging the solution to look at optimizing operational efficiencies around table utilization and climate control to maximize customer comfort and minimize customer wait times.

Reliance Steel

Reliance Steel is leveraging the Smart Building IoT solution for monitoring their workspace for space utilization and ambient sensing, maximizing efficiency and employee comfort.

Get started with the Smart Building IoT Reference Kit on AWS

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